THE UTILITARIAN - ASSOCIATIONIST TRADITION AND THE DEVELOPMENT OF BRITISH PSYCHOLOGY, 1855-1903 (VOLUMES I AND II) (ALEXANDER BAIN, CAMBRIDGE UNIVERSITY, JAMES WARD, UNIVERSITY OF LONDON)

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THE UTILITARIAN-ASSOCIATIONIST TRADITION AND THE DEVELOPMENT OF BRITISH PSYCHOLOGY, 1855-1903. (VOLUMES I AND II)

University of New Hampshire

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PREFACE

Throughout the nineteenth century British psychology was both a theoretical and an applied enterprise. The history of British psychology has been neglected largely because it did not become an experimental science at the same time as psychology was becoming experimental in Germany and the United States. Those historians who have examined British psychology have tended to selectively focus on the few individuals who did engage in some experimental work. I maintain that such a selection bias severely distorts the role played by psychology in nineteenth century Britain. A fuller and more accurate picture of psychology during this period will be gained if we pay close attention to the problem situation inherited by psychology during this period.

Utilitarian-Associationist thought created a framework for psychology that was broad and ambitious. Psychology was assigned the task of illuminating the origins of individual thought, thus providing epistemological foundations for philosophy. At the same time, psychological formulations were to serve as the basis for a theory of conduct. These two strands were most closely intertwined in educational theories—doctrines which prescribed the means for shaping intellectual and moral character.
Throughout the nineteenth century this framework continued to provide the ground rules for psychologists, despite changes in the intellectual climate and in the conception of the nature of psychology. The Utilitarian-Associationist heritage set the tasks to be performed by the new discipline. Later psychologists rejected most of the doctrines that were part of the older tradition, but retained many facets of the program.

Those rejecting the older doctrines drew upon developments in diverse quarters. One important set of influences grew out of the importation of German naturalist and idealist thought. German naturalism, which became allied with evolutionary thought through the efforts of John Tyndall and Thomas Huxley, exposed contradictions between the epistemological and the moral aspects of the Utilitarian-Associationist program. A thoroughgoing critique of the assumptions of this program appeared to be the only way to salvage morality. The German idealists provided the tools for such a critique. And the critique impacted upon psychology when associationism also came under fire.

The rejection of associationism by many of the psychologists in this period was not accompanied by a rejection of the tasks set for psychology by the broader program in which it had been nurtured. Indeed, these tasks--providing a foundation for a theory of moral conduct and providing a theory of the shaping of intellect--became an increasingly important part of the new discipline's program. There are several reasons for this. Evolutionary theory and its popularization
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im p o rta n t  r e s p e c ts.

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In Part IV both institutional and intellectual facets of the emerging discipline are examined. The institutional structure of the discipline is described and, in Chapters 9 and 10, the work of James Ward and James Sully is presented in order to present a picture of the state of the art in academic psychology around 1895. Here my concern will be to show how these psychologists employed some of the newer conceptions within the framework they inherited from the Utilitarian-Associationist philosophers.

The major theses of the present work are:

(1) The portrayal of British psychology as involving a continuous development of empirical and associationist principles leading up to a program for physiological psychology, distorts the historical reality and obscures issues that deserve a closer examination and more thorough elucidation.

(2) Such continuity as did exist between the new psychology and the older Utilitarian-Associationist program served to deflect the science from experimental investigations. The task of describing the foundations of moral and intellectual judgment led to a preoccupation with higher mental processes. The experimental investigation of such sensory processes as reaction times seemed, for good reason, to have little bearing on the central issues facing these psychologists. A fuller treatment of the psychology of the period can only be provided if historians do not straitjacket the growing discipline with a rigid (and presentistic) conception of what constitutes the proper methodology for a scientific psychology.

(3) This fuller picture of the problem situation of the new discipline helps clarify why many psychologists deviated from the Utilitarian-Associationist program. More boldly, I maintain that those on the cutting edge of the discipline were bound to reject a program of physiological reductionism, both as unsuitable for meeting the goals of their program and as scientifically problematic. I also maintain that the central concerns of the discipline are displayed most fully in what psychologists had to say about educational doctrines. Despite difficulties in drawing out practical precepts from their theories, the educational doctrines of these thinkers represented the treatment of psychology's most central concerns during the period.
In examining the work of those reacting to the Utilitarian-Associationist tradition I have found a high degree of continuity between the work of late nineteenth century philosopher-psychologists and twentieth century psychologists such as William McDougall and F. C. Bartlett. In other words, the reaction to Utilitarian-Associationist thought had an impact until well into the twentieth century.

The examination of the vicissitudes of psychology and the Utilitarian-Associationist tradition raises a number of broader issues that have contemporary relevance. Is it possible to formulate an adequate account of human thought and action employing the methods of the natural sciences? If so, can these accounts be turned to practical use in order to improve society? Or should scientific psychology not concern itself with practical matters? Such questions preoccupied British psychologists and philosophers at the end of the nineteenth century and are still being asked today.
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ABSTRACT

THE UTILITARIAN-ASSOCIATIONIST TRADITION AND
THE DEVELOPMENT OF BRITISH PSYCHOLOGY, 1855-1903

by

Deborah F. Johnson
University of New Hampshire, September 1986

The Utilitarian-Associationist program formulated by Jeremy Bentham, James Mill and John Stuart Mill shaped the framework of British psychology throughout the nineteenth century. These thinkers believed that an associationist and hedonistic science of mind provided a sound foundation for a non-intuitionistic philosophy (including epistemology, logic and ethics) and a program of social reform. The tasks set by this program led to a focus on higher mental processes and the nature of conduct within nineteenth century British psychology.

The work of Alexander Bain is reinterpreted in the light of this tradition. Specifically, I argue that Bain's "physiological psychology" represents an attempt to grapple with problems bestowed by this tradition; and that his applied psychology represents an attempt to fulfill the social program of the earlier thinkers.

Later in the nineteenth century a reaction set in against this tradition as contradictions became apparent the epistemological and the moral aspects of the Utilitarian-Associationist program. German Idealist thought provided the tools for a critique which raised the
question: "Can There be a Natural Science of Man?" Critiques of associationism, by James Ward and others, attacked the very foundations of the Utilitarian-Associationist program.

The rejection of associationism did not entail a rejection of the tasks set for the discipline by the Utilitarian-Associationist tradition. These tasks—providing a foundation for a theory of conduct and a theory of the shaping of intellect—became an increasingly important part of the new discipline's program. However, psychologists like James Ward demanded teleological accounts of these processes; accounts that captured the purposive character of human functioning. Such demands represented a challenge to psychology as well as a more general challenge to the enterprise of science.

Although this dissertation focuses upon the intellectual development of British psychology, its institutional development is not entirely neglected. Relevant societies and journals are described. Provisions made for study of the "Moral Sciences" at the University of London and Cambridge University are described. Because the Utilitarian-Associationist tradition maintained that psychology was the foundation of educational theory, Teacher's Training programs at London and Cambridge are described.
INTRODUCTION TO PART I

THE UTILITARIAN-ASSOCIATIONIST TRADITION

Given a science of the mind and a science of society which exhibit the qualities both of the experimental and the exact sciences analogous to the physics of Newton, should it not be possible to found on these new disciplines a moral and legal theory which would be scientific—the achievement of the universal practical science? Such is the problem which exercised thinking people in England throughout Bentham's century. What is known as Utilitarianism, or Philosphic Radicalism, can be defined as nothing but an attempt to apply the principles of Newton to the affairs of politics and of morals. (Halévy, Philosphic Radicalism, p. 6)

The formative stages of psychology's development as an independent discipline in Britain will be examined in this work. Although I will primarily focus upon intellectual developments within the Utilitarian-Associationist tradition, such developments can not be adequately treated in isolation from the larger social, political and intellectual context in which they took place.

In this work I argue that the character of British psychology was formed by the Utilitarian-Associationist program. This program also played a large role in creating social and political realities, particularly during the first half of the nineteenth century. This context helped shaped the tasks envisaged for psychology and the manner in which these tasks were carried out.
My central thesis is that during the early part of the nineteenth century psychology became tied to a program of progressive social reform. It was the view of Bentham, James Mill and John Stuart Mill that psychology must provide the foundation for epistemology and for all the moral sciences (including ethics and jurisprudence) as well as their practical appendages (education and law). The slate of tasks posed for psychology by this group of thinkers remained its agenda throughout the century, despite significant changes in the content and methods of the discipline. In short, the story of British psychology during the nineteenth century is largely the story of the Utilitarian-Associationist tradition and its vicissitudes.1/

The personal connections among the main characters in the story are quite striking. James Mill was described as "Bentham's lieutenant." John Stuart Mill was educated with the view of creating a "worthy successor" to both Bentham and Mill. Alexander Bain adopted John Stuart Mill as a mentor during a period of relative social isolation for Mill. They worked together on certain projects (e.g., Mill's Logic and the second edition of James Mill's Analysis of the Phenomena of the Human Mind), but Bain primarily devoted himself to updating and filling in gaps in the Utilitarian-Associationist Corpus.2/

The intellectual connections will become clear in the course of this work, but a brief overview is called for here. James Mill attempted to provide the philosophical and scientific underpinnings for Bentham's utilitarian program of social reform, by joining empiricism and associationism together in a scientific account of the mind.
Alexander Bain expanded this account and attempted to make it more scientific by providing physiological underpinnings. James Mill argued that we can use psychology to develop a science of education which would tell us how best to shape character and improve society. Alexander Bain followed through on this suggestion and provided works on character and on the science of education. He also—in this way—built upon J. S. Mill's proposed "Ethology." In these and other respects, Bain's work represented the culmination of the Utilitarian-Associationist tradition.

For a number of reasons there was a reaction against the ideas of these thinkers during the last third of the nineteenth century. Empiricism, utilitarianism, associationism and physiological reductionism all came under attack. For many psychologists this movement led to the rejection or radical revision of the views propounded by Alexander Bain. "New" psychologies were formulated by individuals such as James Ward, James Sully and G. F. Stout. Despite these shifts, psychologists continued to maintain that psychology must play a central role in a science of education and that education involved the shaping of character so as to improve society. In short, the Utilitarian-Associationist thinkers envisioned psychology as a theoretical and applied discipline and this vision persisted throughout the century.

Social and political connections must also be taken into consideration. Bentham and James Mill were the spirits behind the philosophic radicals, a group spearheading many of the reforms of the first half of the nineteenth century. Through their efforts bourgeois
liberalism, involving individualism and laissez faire economics, became
the dominant social and political philosophy by mid-century.\(\text{4/}\)

The philosophic radicals came to power because the American and
French Revolutions inspired popular demands for electoral reform. Some
steps in that direction were taken when the Reform Bill of 1832
enfranchised property owners and redistributed parliamentary
seats.\(\text{5/}\) Passage of the bill did not transform Britain into a
democracy, but accorded political power to the middle classes who then
used this power to confront some of the social problems created by
industrialization.

The industrialization of Britain was accompanied by population
increases and the rise of urban centers.\(\text{6/}\) Since the work force was at
the mercy of the market, problems of poverty became quite acute during
periods of low demand. Child labor was common, while formal schooling
was rare. Overcrowding and inadequate sanitation created serious health
problems.\(\text{7/}\) Although individuals as well as religious and charitable
organizations attempted to ameliorate these problems, their efforts made
little headway against such widespread problems.

Many individuals, particularly those with Benthamite connections,
felt that the state must intervene to deal with these problems.
Although liberal political philosophy had called for minimal state
intervention in the life of members of society, such intervention was
acceptable to many of these thinkers if it served to ensure the security
of those members. In this context, Benthamite reformers became
politically as well as intellectually zealous and adept at presenting
social problems as threats to the security and stability of society, so that state intervention could be justified. The political career of one of these reformers, Edwin Chadwick, illustrates the best and the worst of the Benthamite policies. Since Chadwick was connected with much of the important social legislation during the first half of the nineteenth century a quick glance at his career will provide an overview of Benthamite influence during that period./8/ It will also enable us to see how Benthamite legislation led to the growth of state power that was eventually to undercut the social and political philosophy that had been its original inspiration.

Chadwick's first role in the creation of social legislation was as a commissioner investigating the treatment of children in factories./9/ The Factory Act of 1833, which stemmed from this investigation, prohibited children under nine from working. Those between the ages of nine and thirteen were only allowed to work a forty-eight hour week and were required to attend school two hours per day./10/ Schooling had been recommended as a suitable alternative activity; one which might turn the children into productive citizens but which, at the very least, would delay their embarkment on a life of crime./11/ Although this and subsequent bills reduced the amount of child labor, it was not until 1876, when elementary education was made compulsory, that children moved out of the factories and into the schools./12/
Chadwick's efforts were next directed toward the problem of poverty. His Poor Law Amendment Act of 1834 remains the purest example of Benthamite legislation. The system of pauper relief was replaced by a network of workhouses wherein all able-bodied poor over the age of seven were to work. To discourage shirkers the work was to be harder and less remunerative than work outside the poor house. Chadwick envisioned this act as a form of experimental social legislation. The act created the first centralized administrative body integrated with local government. Chadwick hoped that this administrative body would be able to gather information on the workings of the act. Such information could be evaluated to improve future legislation and progress would have been made toward Bentham's goal of truly scientific legislation. Chadwick, however, was not appointed a commissioner and his research plans never came to fruition.

Only slightly daunted by these developments, Chadwick next attacked the problem of disease, a problem demonstrated by the outbreak of cholera epidemics in 1832, 1849 and 1853-54. In 1842, he published a report relating mortality rates to sanitary conditions and calling for public improvements in sanitation. The first Public Health Act was passed in 1848 and Chadwick was appointed head of a central Board of Health with a system of health inspectors to supervise. The act granted local governments the power to levy rates for sanitation projects but, with few exceptions, such improvements were to be made entirely at the local government's discretion. Nevertheless, Chadwick and his health inspectors made their presence known, with mixed results. During the cholera epidemics of 1849 and 1853-54 Chadwick's
office was exceptionally busy, but his work earned him little public respect. The Times had this to say about Chadwick and his fellow board member, Southwood Smith:

these men seem heated with all the zeal of propagandists and all the intolerance of inquisitors. Firmly persuaded of their own infallibility, intolerant of all opposition, utterly careless of the feelings and wishes of the local bodies with whom they are brought in contact . . . . These gentlemen have contrived to overwhelm a good object with obloquy and hatred and to make the cholera itself scarcely a more dreaded visitation than their own.

Chadwick was removed from his post in 1854 and the Board of Health was dismantled. Although Chadwick did not retire honorably, he left a legacy that was to shape the role of the state in Britain into the twentieth century.

The repeal of the Corn Laws in 1846, considered by most to signal the triumph of economic liberalism, took place during a period in which considerable inroads were being made by the government in the regulation of poverty, disease, working conditions and education. While these early efforts did respect the principle of localism, the machinery of a collectivist state was being built during this period. J. H. Clapham describes subsequent events:

The state, purged and trained fine, better informed and better equipped, could supervise the carrying out of its decisions with a certainty which would have been unthinkable two generations earlier. Whatever the conscious or subconscious doctrines about the proper sphere of its action by which legislators were influenced, it was probable, perhaps inevitable, that the organism of state, more sinewy and efficient, would also become more active.

After 1870 social and political changes coalesced to reduce the relevance of liberalism and individualism. The transformed role of the state did not really become evident until the second great wave of
reform legislation which followed the electoral Reform Bill of 1867. The spectre of mass democracy led many to abandon their professed faith in the rationality of man. Darwinian thought asserted that there were links between man and beasts. As it became woven into social thought, this doctrine implied that certain portions of the population were closer to beasts than were others.

The idea that social progress depends upon the pursuit of enlightened self interest was also challenged by the fact that significant progress had not been made on social problems such as the alleviation of poverty. This fact lent weight to the arguments of those who contended that social cooperation, instead of, or in addition to individual competition, was necessary to ensure social progress.

New political philosophies were required to justify the active role of the state and new social philosophies were required to replace the liberal view of man. The declining relevance of liberalism led some to place their faith in the revelations of science while others sought guidance from German philosophers. We will see how each of these alternatives fared in Britain as well as examine their influence upon the fledgling discipline of psychology.

The significance of such social and political changes should become clearer when we recognize that common assumptions underlay both the psychological and the socio-political thought of the Utilitarian-Associationist tradition. The critique of their social and political thought, which began in the 1870's, was paralleled by a critique of their psychological thought. For example, the critique of
individualism or social atomism was paralleled by a critique of associationism, which involved psychological atomism. However, I do not wish to claim that these social and political critiques led to the critique of psychology. The problems of Utilitarian-Associationist tradition were internal ones: the psychology they formulated was simply inadequate for the tasks they wished it to perform./25/ These social and political changes were not sufficient or even necessary grounds for the rejection of Utilitarian-Associationist psychology.

In this dissertation I will be paying particular attention to one of the tasks envisaged for psychology: providing a theory of education. There are several reasons that I feel this to be a central issue. Within the Utilitarian-Associationist tradition it played a central role, since a core assumption of that tradition was that we are formed by our circumstances. Given this assumption it was natural for them to believe that circumstances could, and should be arranged to make us better. Education was seen as one of the primary means of remaking society, because education shapes intellectual and moral character./26/

Although the Utilitarian-Associationist thinkers were not the only ones calling for the extension of education during the first half of the century, there were distinctive elements in their appeal. First, because they argued that a broadly based system of education could ensure the stability of society, they were able to make some headway in a climate of liberal non-interventionism./27/ Second, since they asserted that such education need not be religious (indeed they held that it ought not be religious) they were somewhat removed from the
debates over the character of religious education that forestalled the development of a national system of education in Britain./28/ Finally, and most importantly, they had a theory of the development of the mind (associationism) and an account of motivation (hedonism) that could be employed to develop a theory of educational practice. Associationism along with utilitarian ethics were to be guides in the creation of rational individuals of sound moral character.

The hopes placed upon education by individuals within this tradition also influenced the development of their psychological theory. Since one task of education was to create rational individuals, great emphasis was placed on providing associationist accounts of the higher mental processes. And since the formation of sound moral character was also imperative, associationism and utilitarianism had to join hands to provide an account of conduct, i.e., of a rationally determined will./29/ We will see that this emphasis upon the higher mental processes and upon moral conduct (including the theory of volition) persisted throughout the nineteenth century, even among those who rejected the assumptions of the Utilitarian-Associationist program. Given these emphases in British psychological theory, it is not surprising that experimental psychology was slow to take hold in Britain./30/

With respect to education, social and political changes had a direct role to play in the second half of the century. After 1860 religious influence declined, making it possible to envisage a moral education that was not religious in a sectarian fashion./31/ The Reform
Bill of 1867 evoked fears of mass democracy and made the utilitarian arguments concerning education as a potential equalizer and as a force for social stability more persuasive. In increasing economic competition from Germany and the United States led to a call for improved scientific education.

A series of bills between 1870 and 1891 made elementary education widely available, compulsory and finally free. In 1870, 1.7 million children were attending school in Britain; in 1886 the figure reached 4.5 million. In 1870 there were 28,000 teachers; in 1895 there were 126,000. If these teachers were to perform their duties properly it was imperative that they receive some kind of training. Teachers training colleges, with psychology as an integral part of the curriculum, sprouted up. During the second half of the century psychologists benefited materially from their discipline's links to education. Taking my cue from L. S. Hearnshaw I will argue that, in one sense, psychology was saved by its applications.

Since this dissertation is concerned with the development of psychology as a discipline it is necessary to describe the facilities which existed for the training of psychologists. Here again the tradition we are examining played an important role. Utilitarian-Associationist thinkers founded the University of London in 1826 as a non-sectarian alternative to Cambridge and Oxford. During the first half of the century these colleges offered only a classical education and students were required to subscribe to the Anglican faith. Dissenters could only attend the University of Durham, the University of
London or one of the universities in Scotland. Although a number of reforms were made around mid-century at Cambridge and Oxford—including the establishment of new triposes in moral sciences and natural sciences at Cambridge—the education there remained largely classical and non-professional. Psychology found its first niche as an academic discipline at the University of London, mainly through the efforts of Bain. We will be examining its development there along with parallel developments at Cambridge in later sections of this dissertation.

In Part I of this work I will describe the Utilitarian-Associationist tradition as it was developed in the work of Jeremy Bentham, James Mill and John Stuart Mill. Both the thrust of their reform program and the more specific psychological content—their theory of thought and theory of conduct—will be described. In addition I will examine their accounts of the development of character and their recommendations for educational theory.

In Part II of this work I will describe how the tenets of this program shaped the work of Alexander Bain. As the chief descendent of the Utilitarian-Associationist school, Bain's work dominated academic psychology until nearly the end of the nineteenth century. Bain's theory of thought and theory of volition will be described in some detail in order to show both continuities and discontinuities with the tradition and to provide the backdrop for subsequent criticisms of the Utilitarian-Associationist tradition in psychology. These criticisms will be examined in Parts III and IV of this work.
NOTES FOR INTRODUCTION TO PART I

1. This is perhaps too strong a statement for I am certainly not considering nineteenth century British psychology in its entirety. Important traditions that are either omitted or touched on only briefly include medical psychology, comparative psychology and the mainstream tradition of physiological psychology. I am not certain that Utilitarian-Associationist thought had as great an influence in these traditions, as it did among the central individuals I shall examine (Bain, Ward and Sully). I am certain that to consider this other work would greatly lengthen an already unreasonably long work. Perhaps less justifiable is my decision not to treat the work of Herbert Spencer. A strong case could be made for the influence of Utilitarian-Associationist tradition on Spencer, but neither Ward nor Sully paid particularly close attention to the psychological work of Spencer.


3. In addition to the social and political changes described below several intellectual factors played a role. Evolutionary theory and the increased prestige of science raised the spectre of materialism. Those with religious or moral scruples were quick to reject all mechanistic doctrines. German philosophical works, especially the works of the idealists and neo-Kantians, became known in Britain, and this knowledge provided tools for the critique of empiricism and associationism. All these issues will be touched on in subsequent sections of this work.

4. The triumph of liberalism was symbolized by the repeal of the Corn Laws in 1846. This ushered in a period of free-trade which hastened the decline of agriculture in Britain and brought economic depressions in the second half of the century.

5. This bill enfranchised many members of the new middle class who were interested in ridding British society of aristocratic privilege and moving into an era of industrial prosperity. The bill redistributed constituencies in line with the current population distribution: Birmingham and Manchester, two of the largest industrial cities, were finally given representation. The registered electorate for the United Kingdom increased from 478,000 to 814,000. Anthony Wood, Nineteenth Century Britain (London: Longmans, Green & Co., 1969) pp. 80-85, 435.


10. Ibid., bk. 2, chap. 2. Chadwick's original proposal contained stronger educational clauses. He was unhappy with the alterations to the act, displeased with the system of inspection set up and dismayed by the ease of evading the act. For instance, there was no way of verifying the age of most children until birth registration was made compulsory in 1837. Ibid.


14. Political and social considerations played a large role in awarding these "plums" (the salary was an ample £2,000 per annum). Chadwick was appointed secretary to the commission, but clashed with the commissioners from the very outset. See Finer, *Edwin Chadwick*, bk. 2, chap. 4; bk. 3, chaps. 1, 2.

16. Ibid., 2:1785-1804. This act was passed at the height of the laissez faire philosophy—the corn laws had been repealed in 1846. Alexander Bain was appointed assistant secretary to the Board in 1848. He found this position quite suitable as it enabled him to complete much of his writing at the office. Bain, Autobiography, W. L. Davidson, ed. (London: Longmans, Green, 1904), p. 203.

17. Wiener, The Lion at Home, 2:1785-1804. Provisions that respected the principle of localism were characteristic of the legislation of this period. The public health legislation was compulsory only in areas with unusually high mortality rates. Many towns and cities opted not to adopt the provisions of the bill. One such town—Newcastle—was to regret its decision when cholera broke out in 1853. Finer, Edwin Chadwick, pp. 458-60.

18. During a seven month period in 1849 14,000 people perished from the plague in London alone. The Board of Health had only two inspectors to attempt to control the spread of the disease throughout England, Scotland and Wales. For an account of the Board's work during the period—work which sometimes intensified the problem—see ibid., bk. 8, chap. 3. In March 1850 Alexander Bain resigned in disgust, complaining that the volume of work was leaving him no time for writing. Bain, Autobiography, pp. 203, 209-10.


22. Once again, electoral reform came about only in the face of popular pressure. Spearheaded by the Reform League, the Hyde Park Riots in July of 1866 showed the strength of popular support for electoral reform. Webb, Modern England, p. 324. The Reform Bill of 1867 almost doubled the electorate. In many towns the working classes gained a majority, to the consternation of conservatives. Ibid., pp. 324-27; Wood, Nineteenth Century Britain, pp. 274-77.


24. Ibid., pp. 53-54, 168-69. Charles Booth's studies on poverty, which were initiated in 1886, indicated that 30% of the population of London was living in poverty. Webb, Modern England, p. 384.
25. In part, I believe, this was due to inflated expectations of what a scientific psychology could tell about how to guide practice. The main problem, however, was that the psychology they formulated was not even capable of accurately capturing the reasoning and conduct of the typical middle class liberal. To put it in somewhat more sophisticated jargon, the deterministic and mechanistic assumptions of these thinkers were incapable of capturing the complex and purposive character of much of human thought and action.

26. The formulation of scientific legislation was the other means of remaking society. The emphasis upon the need for a moral education was not new and not restricted to the utilitarians. In 1834 a parliamentary committee investigating drunkenness recommended the establishment of a national system of education. In addition to providing intellectual training such education was supposed to aim at

"the inculcation of a sense of shame, at the crime of voluntarily destroying or thoughtlessly obscuring, that faculty of reasoning, and that consciousness of responsibility, which chiefly distinguish Man from Brute." (Report of the Select Committee on Drunkenness, 5 August 1834. Reprinted in Wiener, The Lion at Home, 2:1420)

What was new and distinctive about the utilitarians demand is that they claimed to "understand the development of moral character in a scientific fashion."

27. For example, James Kay-Shuttleworth's justification was a classic Benthamite one. The state, he argued, has the duty of preserving public order by coercive means and penal enactments. If the same end can be achieved by less coercive means—through education—then surely the state should undertake the task. As he so picturesquely put it,

"the statesman who endeavours to substitute instruction for coercion, to produce obedience to the laws by intelligence rather than by fear ... to use the public resources rather in building schools than barracks and convict ships; to replace the constable, the soldier, and the gaoler by the schoolmaster, cannot be justly suspected of any serious design against the liberties of his country or charged with the improvident employment of the resources of the state" (Trygve R. Tholfsen, ed., Sir James Shuttleworth on Popular Education [New York: Teachers College Press, 1974], p. 42)


29. Maurice Mandelbaum in History, Man and Reason: A Study in Nineteenth Century Thought (Baltimore: Johns Hopkins, 1971) argues that the early associationists (Gay and Hartley) were explicitly concerned with practical matters such as morality. He argues that
"In spite of several comparisons which early associationists drew between the association of ideas and the Newtonian law of gravitation, associationism was not in its origins, an attempt to formulate and validate a specific psychological law. Rather, it was the formulation of a principle which served to bridge the gap between the very general proposition that all knowledge derives from sense experience and specific observations concerning reasoning, the use of language, the operation of the imagination, the growth of complex emotions, and the basis of moral beliefs. (p. 156.)

Thus far Mandelbaum and I are in complete agreement concerning the aims of the associationist program. But Mandelbaum continues, "In its origins, associationism was not what James Mill and especially Alexander Bain later sought to make it, a full-blown psychological system serving to classify and relate all aspects of mental life; it was, rather, a principle used to connect a general epistemological position with more specific issues of intellectual and practical concern" (p. 155).

In this dissertation I am arguing, in contrast to Mandelbaum, that both James Mill and Alexander Bain's psychology was concerned with connecting "a general epistemological position with more specific issues of intellectual and practical concern." That their approach was more systematic indicates only that they viewed such systematizing as a more effective way of achieving their end.

30. I will not ignore the role of institutional factors although I will argue that they were secondary to intellectual factors during this period.

31. Best "Religious Difficulties of National Education," pp. 168-70. Although reformers were still calling for religious education, Best argues that it was not until a "broad, charitable multidenomination Christianity" could be accepted as the national faith, that a national system of education could be established.


33. Both the United States and Germany built extensive rail systems in the nineteenth century, permitting the ready flow of raw materials to industrial areas within their countries. Clapham, Economic History, 2:212-13. By 1896 both Germany and the United States were producing more steel than Britain, and both were gaining on Britain's lead in coal production. Webb, Modern England, pp. 375-77. Germany and the United States also entered into export trade. Britain's free trade policies resulted in the swamping of her home market with foreign goods. In 1887 an act was passed requiring that the country of origin be indicated on all imported goods. Ibid., p. 376. Webb notes that in 1896 "an alarmist book called Made in Germany became a best seller." Ibid.
The economic threat posed by Germany led the British to examine and adopt the German model of scientific and technical education. Haines, "German Influence upon Scientific Instruction in England, 1867-1887," Victorian Studies 1 (1958):215-44. This increasing demand for improvement of scientific education concerned many who felt that education must be humanistic to perform its moral functions. The well-known debates between Matthew Arnold and Thomas Huxley brought these issues into focus.

34. William Forster's Elementary Education Act became law in 1870, three years after passage of the second reform bill. School boards were which was established for overseeing the education of children in their districts. They were to maintain the existing system of denominational schools and, when necessary establish new schools. They were empowered to make school attendance compulsory for children between the ages of five and thirteen, but were not required to do so. John W. Adamson, English Education: 1789-1902 (Cambridge: Cambridge University Press, 1964), pp. 357-60.

In 1876 Sandon's Elementary Education Act made education compulsory by regulating the employment of children. Connell, Educational Thought of Matthew Arnold, p. 127. In 1880 Mundella's act stipulated that local governments must make bylaws to enforce attendance. Ibid. In 1891 school fees were abolished leading to a sharp decline in the number of denominational schools. Adamson, English Education, pp. 367-69, 381, 466.

35. The enrollment figures are based on the findings of the Cross Commission established in 1885 to investigate the workings of Forster's Education Act. Ibid., p. 380. The numbers of teachers are based on figures presented in Asher Tropp, The School Teachers: The Growth of the Teaching Profession in England and Wales from 1800 to the Present Day (London: Heinemann, 1957), p. 114. Tropp noted that the percentage of pupil teachers dropped significantly. Pupil-teachers represented 52% of the teaching population in 1870 but only 27% in 1895. Despite the rapid rise of teacher training institutes only 42% of the teachers were certified in 1895, compared with 44% in 1870. Ibid.

36. L. S. Hearnshaw, A Short History of British Psychology (New York: Barnes and Noble, 1964), p. 211. Hearnshaw, describing a somewhat later period, writes:

Such was the academic and intellectual soil in which British psychology had to grow between the wars. Had it rested with the philosophers alone the growth of psychology would have been slower than it was. Psychology was saved by its applications, educational, industrial and medical. (Ibid.)

In this work I will argue that it was philosophers who first insisted upon the psychological applications that "saved psychology." In another sense it was those applications that condemned psychology—at least the particular brand of psychology proposed by the Utilitarian-Associationist philosophers.
37. Henry Brougham and James Mill, among others were involved in the preliminary stages of planning for the new university.

38. For this reason many young students began travelling to Germany in the 1860's and 70's to supplement the education gained in Britain. It was through such individuals that German thought came to have an influence in Britain.
CHAPTER 1

JEREMY BENTHAM AND JAMES MILL

The Utilitarian-Associationist Tradition

As I have noted the Benthamites, or philosophical radicals, were the originators of many of the important political and social reforms made during the first half of the nineteenth century. In this chapter I will be examining the ideological content of the Benthamite program and its ties to a particular kind of psychology—associationism. A broad sketch of the utilitarian program will serve to orient us before turning to the specific views of its progenitors.

The utilitarian program rested upon enlightenment values situated in the context of the epistemological principles of the English empiricists./1/ The fundamental enlightenment value shaping the doctrines of the utilitarians was the rejection of that which was transcendent, supernatural, mystical or metaphysical as the explanation of any phenomena; in short, the rejection of intuitionism./2/ Such a position was, of course, consistent with the epistemological principles of the empiricists. David Hume's stricture against metaphysical entities had a strong impact on Bentham who was extremely diligent in rooting out such fictions./3/ The utilitarians adopted empiricism as their theory of the origins of knowledge. All intuitionist accounts of knowledge were rejected—experience, and more specifically sense
experience, was held to be the sole basis of our knowledge.

Like the philosophers, the utilitarians placed great faith in the power of human intellect and were confident that the application of scientific method to human phenomena would yield knowledge beneficial to mankind. Such optimism rested upon two beliefs: first, that science could be equated with progress, and second, that society could be transformed through rational control of the environment. An assumption underlying the second belief was environmentalism: the view that human character was completely shaped by its environment. The utilitarian social vision had as its goal the creation of a more equitable society and this was to be achieved by manipulating the environment in line with certain fundamental principles. To ensure success in this endeavor, the utilitarians felt that it was necessary to place morals and legislation on a foundation as precise and certain as the foundation of the physical sciences.

The central role played by psychology in this program followed from their empiricist epistemology. The empiricists had asserted that any theory of knowledge must rest upon an account of how the individual mind develops knowledge out of particular sense experiences. Psychology is thus the foundation of all the moral sciences and their practical adjuncts. And the psychological theory which is most compatible with empiricism and with utilitarianism is associationism.

That the moral sciences will enable us to create a more orderly and equitable society was accepted by all utilitarians. Progress toward that goal was to be assessed at every step by application of the
principle of utility, or the greatest happiness principle. This principle— which was the very heart of the utilitarian program— stipulated that all one's actions should aim at the greatest happiness of the greatest number. The principle serves as a criterion of the moral worth of individual actions, as well as the actions of the state and other social institutions. The state and other political and social institutions are simply instruments for the satisfaction of individual desires./8/

In sum, the utilitarian program involved faith in what reason could draw from experience, confidence in the applicability of scientific method to social problems and optimism concerning the reformability of individuals and society. For a more detailed view of the program we turn to a discussion of the life and work of Jeremy Bentham.

Jeremy Bentham (1748-1832) - Founder of Utilitarianism

Background and Intellectual Influences

Bentham's life spanned the reign of George III, a period notable for social upheavals including the Industrial, the American and the French Revolutions, as well as the modernization of Russia under Catherine the Great./9/ Reform of older institutions was called for in such turbulent times and throughout his life Bentham provided systematic programs to govern such reforms./10/

Bentham was born in 1748, the son of a middle class attorney who had became wealthy from real estate ventures. Jeremy was intellectually precocious and his father channelled his own ambitions into planning his
son's education and future as a barrister and peer. /11/ Jeremy entered Queen's College, Oxford at the age of twelve and graduated, three years later, in 1763. /12/ In line with his father's plans, he entered Lincoln's Inn to study law. He attended Blackstone's lectures at Oxford and regularly observed the judicial process at Westminster. The remainder of his time was spent reading and dabbling in chemistry. /13/

In 1767 he was called to the bar but his practice was neither successful nor long lived. He decided, much to the chagrin of his father, to devote himself to the reform of the law. He reached this decision in the early days of his practice under the influence of the writings of Joseph Priestley and the French philosophs.

Bentham credited Priestley for his introduction to the principle of utility. The doctrine that the guiding principle of government ought to be the creation of the greatest happiness for the greatest number, was one of the central tenets of his later philosophy. /14/ The writings of the philosophs--Montesquieu, Beccaria and Helvetius--were to have a great impact on his later legal philosophy. /15/ From Helvetius he derived his belief in the primacy of legislation and his sense of vocation as a reformer of law. /16/ The greatest happiness principle was confirmed and concretised by Helvetius with the suggestion that happiness was resolvable into separate pleasures. /17/ Helvetius had taken the preliminary steps toward a complete science of morals and legislation, and Bentham became convinced that such a science was the essential underpinning of all social reform. /18/
Helvetius also convinced Bentham of the crucial role played by well-grounded definitions in the creation of a science of morals and legislation. His later reading of another philosophe—D'Alembert—reinforced this conclusion and suggested to Bentham that the first requirement of such definition was the division of language into real and fictitious entities./19/ D'Alembert's outline of all human knowledge impressed Bentham with its encyclopedic scope and encouraged the systematizing tendency that he exhibited throughout his life./20/

Bentham did not adopt all of the ideas of the philosophes. He rejected their central political notions—the social contract theory, the doctrines of natural rights and natural laws—as mere fictions. In this respect he was taking D'Alembert's advice seriously and harkening back to the more stringent anti-metaphysical position of Hume./21/ Indeed, it was his reading of the French philosophes that led him to a deeper understanding and appreciation of the English thinkers, Locke and Hume, and to recognize the contribution of Francis Bacon.

Like Helvetius, Bentham adopted the epistemology of Locke's Essay, assuming that all ideas originated in sense experience./22/ From Hume, Bentham obtained the empirical insight that men act in order to obtain pleasure and avoid pain./23/ The need for a science of morals analogous to the science of physics was confirmed by reading Locke, Hume and Bacon, with the latter providing concrete guidance in how such a science might be constructed./24/ Both Bacon and Bentham held that moral and political science was a different kind of science than physics. It was
not a deductive science, but an empirical and practical science like chemistry or medicine./25/

Bentham spent most of his life writing on law and developing schemes to serve as solutions to the social problems plaguing Britain during this period./26/ In 1776 he published Fragments on Government. The Introduction to the Principles of Morals and Legislation was completed by 1780 but was not published until 1789./27/ While these works were generally well received, Bentham was disappointed that none of his proposals were adopted by the principal legislative figures. He became more and more disillusioned with attempts to induce change among those in power. His bitterness at the fate of his proposals no doubt played an important role in his shift from Tory to democratic politics./28/

In Britain, Bentham was widely regarded as a man with a single idea. This reputation was based upon the tenacity with which he had pursued his project for the housing of criminals: the Panopticon./29/ Widespread recognition of his philosophical program did not come until after 1802, when Traité de Législation de M. Jeremie Bentham was published by Dumont in France./30/ Bentham's doctrines had spread on the continent as far as Russia, but remained relatively unknown in Britain./31/ It was not until well after 1808, the year marking the start of Bentham's alliance with James Mill, that his ideas became widely known in his own country. Before turning to this second phase of utilitarianism we should examine the utilitarian doctrine as developed in the Introduction to the Principles of Morals and
Principles of Morals and Legislation

Bentham's Principles began with the following proposition:

Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do as well as to determine what we shall do. On the one hand the standard of right and wrong, on the other the chain of causes and effects, are fastened to their throne... The principle of utility recognises this subjection and assumes it for the foundation of that system, the object of which is to rear the fabric of felicity by the hands of reason and of law.32/

Here Bentham identified the two principles underlying his utilitarianism. First is the empirical generalization that human action is guided by a tendency to seek pleasure and avoid pain. Second is the prescription that one's actions should be chosen so as to produce the greatest happiness for the greatest number. With the addition of the supporting premise that happiness is but the sum of separate pleasures, the logic underlying the utilitarian moral philosophy was complete. On the one hand, we have an assumption about individual psychology: we are pleasure seekers and pain avoiders. On the other hand, we have a prescriptive ideal. Sound government involves bringing the individual's pleasure seeking into line with the happiness of society, and it is to this end that legislation should be framed.

In order to implement the principle of utility we must be able to estimate the pleasure and pain which will result from various courses of action. Bentham employed the insights of analysis and algebra in the service of morals and legislation and developed his felicific calculus.33/ This calculus should enable one to judge the ethical
value of any act according to the standard of utility. One simply calculates the amount of pleasure caused by an action minus the amount of pain.\textsuperscript{34/} It was Bentham's belief that the felicific calculus would serve as a tool to make morals and legislation as precise and certain as the physical sciences.

Because Bentham regarded individuals as motivated by their own desire for pleasure, he had to address the question of how individuals might be convinced to align their own happiness with the happiness of the greatest number. Among civilized men, Bentham supposed that this should present few problems. The enlightened self interest of such individuals leads them to derive their greatest pleasure from the happiness of the greatest number.\textsuperscript{35/} Bentham recognized, however, that such individuals constituted a small minority in society. The majority of individuals, acting out of purely selfish motives, must be prodded into acting for the public good. The principle of utility is sanctioned artificially with the aid of supplementary pleasures and pains. Such supplementary sanctions are of four types: physical, political, moral or popular and religious. They primarily play a deterrent role, as when the physical threat of a hangover leads to moderation in drink, or when the religious threat of punishment in the afterlife forestalls sinning. In some cases these sanctions may facilitate acts, such as when a love of reputation (a moral or popular sanction) leads one to perform "unselfish" acts.\textsuperscript{36/}
Bentham felt that the most effective of these sanctions is the political, because it is the most general in its effects and the most consistent in its application. For this reason he regarded legislative reform as the central technique for reforming society.\textsuperscript{37} The principle of utility justified the state's intervention into the lives of individuals at the same time that it limited such intervention. Legislation could only restrict the actions of individuals if such restrictions were necessary to avoid pain to other individuals. The state must intervene to establish the law and order necessary for the protection of life and property. As I have mentioned, positive state intervention on other issues was justifiable on Benthamite principles.\textsuperscript{38}

**Bentham's Later Years**

At the age of sixty, Bentham met James Mill and embarked on a new phase of his career. The friendship with Mill radicalized Bentham and stimulated a broader interest in the philosophical foundations of utilitarianism. This new direction is seen in such works as *Table of Springs of Action* (1815) and *Rationale of Judicial Evidence* (1827), works that investigated such psychological issues as the nature and action of motives and the characteristics of evidence that lead to belief.\textsuperscript{39}

Under Mill's influence, Bentham became involved in reform schemes of an educational character. In 1813 he invested in Robert Owen's community at New Lanark. For many years Owen had attempted to get industrialists involved in the reform of working conditions in their own
factories. Failing in this endeavor, he established his own model working community at New Lannark. Owen, like Bentham and Mill, held an environmentalist position with regard to the shaping of human character, but his views were more radical than those held by the utilitarians./40/ Bentham was particularly interested in the system of infant education that had been established at New Lannark.

Bentham's new interest in education led to the development of a plan for a Chrestomathic day school, published between 1815 and 1817. Bentham's school was designed to provide inexpensive instruction in utilitarian principles for the masses. Costs were to be kept low by employing the monitorial system of the Lancasterians. In common with most of Bentham's practical schemes, the plan was never implemented. Nevertheless, Chrestomathia provides insight into Bentham's view of education./41/

After 1815, Bentham's circle of disciplines grew and his sphere of influence widened. Before turning to this next stage of development of the utilitarian program, a stage in which James Mill played a central role, it will be useful to sketch Bentham's contributions to psychology—including his theory of thought, his theory of conduct and his views on education and character.
In his later years, Bentham identified two great principles underlying his thought: the greatest happiness principle, derived from Priestley, and the principle of association, derived from Hartley. Bentham maintained that principles of association accounted for bonds among ideas and between ideas and language. Morally correct forms of behavior, such as altruism and prudence, must be established by formation of the proper associations. The doctrine of association, coupled with his theory of motivation, provided the foundation for his broader program of social reform. The aim of all social reform was to re-arrange the environment so that socially beneficial acts were paired with pleasurable outcomes and socially harmful acts were paired with painful outcomes. In this way, individual self-interest could be shaped to coincide with the interests of society as a whole, resulting in a better society.

Bentham accepted, but never explicated, Hartley's doctrine of the association of ideas, just as he accepted Locke's view that all our ideas originate in sense experience. The task of critically expounding and extending associationism fell to his disciple, James Mill.

It is worth examining Bentham's view of the structure of the mind. Bentham identified two main faculties: the perceptive and the appetitive. The perceptive faculty covered all the intellectual functions of the mind, including perception, memory and imagination.
The appetitive faculty, on the other hand, covered those functions in which desire plays a role, including volition and the operation of pleasure and pain./45/

Bentham discussed all the intellectual faculties—will, memory, perception, imagination and attention—but not in the traditional fashion as distinct powers of the mind. Psychological ideas, such as mind and its various faculties, wrote Bentham, are really fictitious entities. Such ideas are derived from analogous physical entities—he cites the derivation of esprit, the French word for mind, from spiritus, the Latin term for breath; they tend to be treated as real existents. In Bentham's view, this reification involves serious error. Such psychological terms merely denote various sets of operations performed by the mind. They may be useful as heuristic devices, but they should never be reified. In discussing the mind, he warned, we must be very cautious in the employment of such terminology./46/

Bentham's theory of action

Bentham's greatest happiness principle was grounded in a particular motivational psychology. According to Bentham, it is a fact that individuals seek pleasure and avoid pain. This straightforward motivational principle is complicated by the fact that we must often choose between two or more different courses of action. In such cases, the operation of our will, or volition, comes into play. In every case volition is determined by motives, or the feeling of pleasure or pain which the expectation of a particular act yields. The motives act upon the will to bring about or prevent an action accordingly as either
pleasure or pain predominates. /47/ Bentham wrote:

On every occasion, conduct—the course taken by a man's conduct—is at the absolute command of—is the never failing result of—the motives—and thence, in so far as the corresponding interests are perceived and understood, of the corresponding interests—to the action of which his mind—his will—has on that same occasion, stood exposed. /48/

Bentham endorsed the same determinism of motives that we will see repeated in the work of the Mills. In cases where the will is acted upon by many motives, the strongest motive will prevail. /49/ In this passage, Bentham mentioned interests as related to motives. In Bentham's work, interest is simply another name for motive. Interest in particular objects or subjects develops because those objects (or subjects) are likely to be a source of pleasure or exemption from pain. And as interests, or motives, determine the action of the body so do they determine the action of the mind, though in the latter case their workings are less perceptible and less direct. /50/

Bentham's Baconian systematizing tendency is seen in his taxonomy of motives, the Table of the Springs of Action. His purpose in producing this taxonomy is two fold: he was concerned with identifying the fundamental motives in human action, and he also wished to pave the way for a neutral vocabulary of motives. The taxonomy is presented here as pertinent to a depiction of Bentham's view of human motivation and as giving insight into Bentham's view of character. /51/ The fourteen classes of motives, with their defining pleasures and pains and their corresponding interests, are shown in Table 1.
TABLE 1
TABLE OF THE SPRINGS OF ACTION

<table>
<thead>
<tr>
<th>Motive Class</th>
<th>Pleasures and Pain</th>
<th>Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Hunger and Thirst</td>
<td>Of Taste, Palate, Alimentary Canal, or of Intoxication.</td>
<td>Of the Palate, or Bottle</td>
</tr>
<tr>
<td>(2) Sex</td>
<td>Of Sexual Appetite</td>
<td>Sexual Interest</td>
</tr>
<tr>
<td>(3) Sensory Motives</td>
<td>Of Sense(s)</td>
<td>Interest of Sense(s)</td>
</tr>
<tr>
<td>(4) Pecuniary Motives</td>
<td>Pleasure of Possession (Acquisition, Affluence, Opulence); Pains of Privation (Loss, Poverty, Indigence)</td>
<td>Pecuniary Interest</td>
</tr>
<tr>
<td>(5) Power Motives</td>
<td>Of Power, Influence, Authority, Dominion, Governance, Command, etc. Of Governing, Commanding, Ruling, etc.</td>
<td>Interest of &quot;The Sceptre&quot;</td>
</tr>
<tr>
<td>(6) Curiosity Motives</td>
<td>Of Curiosity</td>
<td>Interest of &quot;The Spying Glass&quot;</td>
</tr>
<tr>
<td>(including love of novelty, experiment, desire of information)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) Ingratiation Motives</td>
<td>Pleasures derived from the free services (Good-Will) of particular individuals. Pains derivable from the loss, or non-acquisition, of the same.</td>
<td>Interest of &quot;The Closet&quot;</td>
</tr>
<tr>
<td>(8) Motivation for Good Reputation</td>
<td>Pleasures of Reputation, or Good Repute. Pains of Bad Reputation, or Ill Repute.</td>
<td>Interest of &quot;The Trumpet&quot;</td>
</tr>
<tr>
<td>(9) Religious Motives</td>
<td>Of the Religious Sanction</td>
<td>Interest of &quot;The Altar&quot;</td>
</tr>
</tbody>
</table>
(10) Motives of Good Will
Of Sympathy
Interest of "The Heart"

(11) Motives of Antipathy
Of ill-Will; Of the irascible Appetite:
including the pleasures of Revenge
and the pains of unsatisfied vindictiveness.
Interest of "The Gall Bladder"

(12) Motives to Obtain Ease
Pains of labour, Toil, Fatigue
Interest of "The Pillow"

(13) Self-Preservation Motives
Pains of Death and Bodily Pains
in general
Interest of bodily and personal self-preservation
and security
Self-Regarding Interest

(14) Self-Regarding Motives
Any of the above (except 10 and 11)
taken with reference to the self.

Character and Education

An individual is said to have a disposition (or inclination or propensity) when that individual's conduct is guided by a characteristic motive. It is in his discussion of dispositions that Bentham comes closest to explicating a view of character. Character is simply an individual's moral disposition; the sum total of characteristic motives predominating in an individual./52/

Bentham was far less interested in character than his successors, James and John Stuart Mill. There seem to be several reasons for this. First of all, he was less interested in the origin of dispositions or actions, than in their consequences. In evaluating an individual, he says, we must discover their character through their conduct rather than evaluating conduct by the implied or self-proclaimed character of a
man./53/ In addition to being consistent with his anti-intuitionist stance, such a view is also quite egalitarian. Furthermore, Bentham had already provided a tool—the felicific calculus—for generating a catalogue of moral action, a task he attempted in the Deontology./54/ If one has faith that individuals can effectively employ such a tool to guide their behavior, one need not be concerned about the formation of their character.

Finally, we must remember that Bentham's primary interest was legislation, not education. Bentham maintained that legal sanctions are the most thorough and effective means of controlling conduct, and thereby shaping character. Bentham may have believed that if adequate guidelines (and sanctions) were provided for moral action, sound character would follow.

Bentham's lack of interest in the formation of character is seen in his plan for a utilitarian day school, the Chrestomathia. The core of that plan was a course of studies, whose sequence was to be determined by their relative utility./55/ In addition to the proposed course of studies, the work listed the advantages that result from learning in general, and from such a course of studies in particular. These included enhanced social status, well-ordered mental and moral habits to aid in the management of life and exposure to a breadth of fields, thus enhancing one's chances for success in life./56/ The focus here was on intellectual discipline and the external advantages which ought to accrue to pupils as a result of their education.
Bentham's contributions to psychology and education came late in his life and had a limited scope. For further developments in those areas, we must turn to an examination of the work of Bentham's lieutenant, James Mill. /57/

James Mill (1773-1836)

Background

James Mill was born in Scotland in 1773. With the aid of wealthy benefactors, he was able to enter the University of Edinburgh where he studied classics and philosophy and attended the lectures of Dugald Stewart. /58/ In 1794 he began to study divinity and in 1798 was licensed to preach. His own doubts concerning religion and a lack of parish offerings prevented him from ever following this profession. For several years he was a private tutor in Scotland, but in 1802 he decided to move to London. /59/

Mill first became acquainted with Bentham in 1808 when he was twenty-five and Bentham was sixty. At the time Mill was attempting to eke out a living with miscellaneous literary jobs. Mill had arrived in London six years earlier determined to make money writing for periodicals. He secured a post briefly as an editor, married, and subsequently had nine children. In 1806—the year his first and most famous child, John Stuart Mill, was born—he began work on his history of British India. Mill had no regular means of support until 1819, when he secured an appointment at India House. However, he managed to make a living editing and writing for various periodicals and kept busy with
the task of educating his children./60/

The meeting with Bentham was fortuitous for them both. A close friendship soon developed and Mill became Bentham's chief disciple and the major proselytizer of the utilitarian doctrine. Discussion among the Benthamites slowly led Mill to give up his religious creed. He adopted a position of agnosticism and remained a harsh critic of religion for the remainder of his life./61/ Mill's and Bentham's influence broadened considerably into the sphere of political economy when Mill met David Ricardo in 1811./62/ For the next eight years he wrote a number of articles for the Edinburgh Review and the Philanthropist, edited several of Bentham's works, continued work on the History and supervised the education of his son John Stuart Mill./63/ It was the latter work which stimulated the interest in education that culminated in his Encyclopedia Britannica article on "Education", in 1819.

Mill on Education

John Stuart Mill's education commenced in 1809 when, at the age of three, he began learning Greek. His father's interest in education grew during this period of John Stuart's early education and it was not long before Mill began to display an interest in larger educational issues. A friendship with the Quaker, William Allen, led him to become involved in the work of the Lancasterians, and in 1812 he published an article on that system, advocating a non-denominational, rather than sectarian, system of schools./64/
Bentham began work on the Table of the Springs of Action as well as the Chrestomathia around 1813. During this period, Mill was spending summers with Bentham at Ford Abbey, and it is likely that they had extensive discussions on the issues involved. During the same period, Mill was working on his own article on education, which appeared in 1819, the year following publication of Mill's History of British India.

"Education" (1819)

The Encyclopedia Britannica article is of interest as a statement of the role that education can play in creating and maintaining an equitable society, as well as a statement of the role that a theory of human mind can play in the science of education. Mill shared Helvetius's view that the happiness of a society depends upon the interest it takes in improving the science of education. This view is expressed in the opening line of the article:

The end of Education is to render the individual as much as possible, an instrument of happiness, first to himself, and next to other beings.

Mill regarded a theory of education as a necessary adjunct for those seeking to reform education and society. But such a theory must draw upon the science of human mind. The first step in the development of a theory of education is to systematize that which we know concerning the human mind. In the first section of the article, Mill presented such an overview. He contrasted the empiricists—Hobbes, Locke and Hume as well as Hartley and Condillac; with the intuitionists—Reid and Kant. Mill, of course, placed himself in the former tradition and
asserted that all knowledge is drawn from experience and arranges itself in our minds as sequences of thought built up by association./71/

According to Mill the object of education is to ensure the production of certain sequences of thought while eliminating others. It is through education that we can create model citizens for the new social order. Educators should perform their task by harnessing the two great powers influencing the sequences of thoughts--custom and pain and pleasure./72/ A science of the human mind is therefore the necessary foundation for a science of education and the reform of society. Furthermore, the securest foundation will be provided by an associationist and hedonic theory of mind. In James Mill's work, utilitarianism and associationism have joined hands in a program of social reform. The progressive vision underlying this alliance can be seen in the following passage:

That . . . all the difference which exists between classes or bodies of men is the effect of education, will, we suppose, . . . be readily granted: that it is education wholly that constitutes the remarkable difference between the Turk and the Englishman, and even the still more remarkable difference between the most cultivated European and the wildest savage. Whatever is made of any class of men, we may then be sure is possible to be made of the whole human race. What a field for exertion! What a prize to be won!/74/

Mill had definite ideas about the qualities of mind that ought to be developed through education. Chief among these qualities is intelligence—the ability to make the correct choice of means to happiness./74/ But intelligence alone is not sufficient to create a moral individual; other qualities are needed to guide intelligence. The individual must also possess the power of resisting pleasure and resisting pain as well as the power to do positive good to others and to
abstain from doing them harm. In short, the qualities of the mind that should be trained by education are the four cardinal virtues of the Greeks: Temperance, Fortitude, Generosity and Justice./75/

Mill pointed out that the identification of these qualities does not really simplify the task of education. What is needed is a "classification of the incidents of life," so that educators can properly train individuals to be instruments of the greatest happiness. The science of education must be built upon the science of ethics as well as the science of mind./76/

It should be clear that Mill's proposal for a science of education was highly programmatic. When we look at his definition of education as "everything . . . which operates, from the first germ of existence, to the final extinction of life . . . to affect those qualities of mind on which happiness in any degree depends," it appears necessarily programmatic./77/ Given Mill's definition we must take into account all of the influences upon the mind—the physical, the moral, the social and the political—for all play a role in the shaping of character.

That social and political influences are included by Mill is consistent with his utilitarianism. He maintained that both play a decisive role in shaping the character of the individual. The characteristic "sequences of thought" found in those around us influence our own "sequence of thought" both through imitation and through the pleasure and pain yielded by social interactions./78/ Because the politics of a country play a role in determining what virtues are to be rewarded, they play a role in determining the "desires and passions of
"men," i.e., their character./79/ While both social and political influences have a decisive role to play, their effect may be mitigated somewhat by the quality of the early education an individual receives./80/ Mill asserted that the trains of thought established first are the most durable and the most pervasive. Because these primary habits serve to constitute the fundamental character of the individual,

**Education** ... or the care of forming the habits, ought to commence, as much as possible, with the period of sensation itself; and, at no point is its utmost vigilance of greater importance than the first./81/

The vigilance that James Mill bestowed upon the education of John Stuart Mill provides us with an opportunity to examine his theory in a practical context.

**The Education of John Stuart Mill**

John Stuart Mill was, without a doubt, James Mill's educational masterpiece. John Stuart's own account of his education in the *Autobiography* clearly indicates the thoroughness with which the elder Mill put his ideas into practice./82/ Greek and arithmetic were presented as lessons by his father, although most of John Stuart's early education consisted of selected readings that he would summarize for his father on morning walks./83/ At the age of eight, he commenced the study of Latin, with the obligation to teach it to younger brothers and sisters as he progressed./84/ Four years later he entered a more advanced stage of instruction, "in which the main object was no longer the aids and appliances of thought, but the thoughts themselves."/85/ He began the study of logic and also read the works of such Greek and Latin authors as Demosthenes and Quintilian as well as
some of the dialogues of Plato. Shortly afterward he began the study of political economy by critically comparing the views of Ricardo and Adam Smith.

In John Stuart Mill's own view his education provided ample proof of his father's view that differences among individuals result solely from differences in their education. Nor was John Stuart's education wholly focused upon the intellect. His father, for example, carefully arranged circumstances so as to avoid the development of self-conceit in the young prodigy.

Following a year in France as the guest of Bentham's brother Sir Samuel Bentham, the fifteen-year-old Mill returned to a course of studies guided by the new turn in his father's interests. He read Condillac's *Traité des Sensations*, Locke's *Essay*, Helvetius's *De l'Esprit* and Hartley's *Observations on Man*. About this time his father began writing the *Analysis of the Phenomena of the Human Mind*, with the aim of developing the foundation science for both the utilitarian ethics and the science of education. As James Mill now held a regular position at India House, work on this manuscript was carried out during summers and the book was not published until 1829. John Stuart's aid was engaged in this project, as in many others with which James Mill was involved at this time.
Bentham's influence was broadening during the 1820's. From around 1819, there was talk of instituting a literary review which would represent the utilitarian perspective alongside of the Whig Edinburgh Review and the Tory Quarterly Review. With financial support provided by Bentham, the first volume of the Westminster Review appeared in 1824. From the beginning it attracted notice and was responsible for creating the image of a party of philosophic radicals./92/

If the Westminster Review was one foci of the philosophic radicals, James Mill's circle of associates was the other. It was his friendships with men such as Francis Place, David Ricardo, George Grote and John and Charles Austin, among others, and his influence upon younger men which helped to present the appearance of a school. John Stuart Mill described the group in this manner:

Their mode of thinking was not characterized by Benthamism in any sense which has relation to Bentham as a chief or guide, but rather by a combination of Bentham's point of view with that of the modern political economy, and with the Hartleian metaphysics./93/

A primary interest of the philosophic radicals was the reform of education. Mill's connection with the Lancasterians has already been mentioned. Throughout the 1820's, articles calling for the extension of popular education and the adoption of the monitorial system appeared in the Edinburgh and Westminster reviews./94/ Henry Brougham, a member of parliament and a close friend of Mill, was then calling for parliamentary investigations of the present system and the establishment of a national system of education./95/
Henry Brougham and Joseph Hume joined with others in the mid-1820's to develop a plan for a university that would provide a non-sectarian alternative to Oxford and Cambridge. The proposed new London University was to provide higher education for the rising middle classes unable to afford the expense of Oxford or Cambridge or disbarred from those universities on religious grounds. The new university was to be open to all and to provide individuals with the opportunity to combine a university education with professional studies. The college opened in 1828 and in 1836 became University College which, along with Kings College, was associated with the new University of London. The founding and development of University College and the University of London parallels the development of psychology I am tracing. Mill's Logic and Bain's works on psychology reached wide audiences as required texts for University College and the University of London examinations. Through the 1890's the University of London remained the citadel of Utilitarian-Associationist psychology although its fortifications were considerably weakened by attacks from the 1870's on.

Other educational projects were taken up by the utilitarians. In 1827 the Society for the Diffusion of Useful Knowledge (SDUK) was founded. Both Brougham and Mill served on its London Committee. The goal of the SDUK was,

the imparting of useful information to all classes of the community, particularly to such as are unable to avail themselves of experienced teachers, or may prefer learning by themselves.
The SDUK pursued this object through the distribution of cheap publications, including the weekly *Penny Magazine* which contained useful knowledge about industrial and scientific processes as well as ample doses of moral advice./100/

It is clear that the utilitarians found the cause of educational reform worthy of their best efforts. While we have been stressing the progressive aspect of this doctrine—that education should be the main instrument in the creation of a new democratic social order—there were other aspects, also consistent with utilitarianism. Some of those with utilitarian connections later advocated a national system of schools as a means of reducing crime and poverty and inoculating the masses against political agitation./101/ By mid-century the utilitarian program was beginning to lose the appearance of radicalism.

**James Mill's Psychology**

Mill's most important work, from our point of view, was the *Analysis of the Phenomena of the Human Mind*. We have already seen that Mill accepted the empiricist principle that all our knowledge is derived from sense experience. Such a view provided a foundation for the doctrine of environmentalism, a doctrine essential for his ethical and social views./102/ In the *Analysis* Mill sought to demonstrate that all of the contents and operations of the mind can be derived from sensations and ideas conjoined by association. A similar task had been undertaken by David Hartley in *Observations on Man* and Mill drew heavily on this work./103/ However, while Hartley approached the human mind from both its physiological and psychological sides, Mill followed Locke.
in eschewing physiological consideration of the mind./104/

**Association and the Powers of the Mind**

Mill's task in the *Analysis* was to account for mental phenomena. Mill accepted the Aristotelian division of the mind into intellectual and active faculties. The intellectual powers of the mind include consciousness, conception, reasoning, memory, imagination and other intellectual processes. The effects of pleasure and pain, motives and will were considered active powers of the mind.

According to Mill, the ultimate constituents of the mind are sensations (feelings) derived from the senses. Ideas are but the traces of sensations, and ideas and sensations are the only two classes of feeling which comprise consciousness./105/ Our sensations fall into orderly patterns because they are based upon the order of objects in nature. Since our ideas are merely copies of sensations, they also have an orderly character, even when the presentation of the ideas is not guided by sensation.

The principle underlying the orderly character of our ideas is, according to Mill, the principle of association by contiguity. Ideas which are paired in space (synchronous ideas) or ideas which are paired in time (successive ideas) tend to be conjoined so that the presentation of one suffices to call forth the other(s)./106/ In examining a rose we receive separate sensations of smell, of color, and of texture. Our idea of a rose involves the synchronous association of all these separate ideas into one complex, but apparently simple idea. The
development of successive associations is a similar process. Events which follow one another in time—like reaching into a fire and feeling the pain of a burn—will leave ideas conjoined in the mind such that the thought of fire will lead on to the thought of pain. Our notions of causal relation develop in such a fashion.

Some of the associations formed in this manner appear stronger than others—more durable, more certain and more rapid. Mill identified two factors which account for variations in the strength of associative bonds: the vividness of the sensations and ideas and the frequency with which they have been conjoined. Mill posited frequency as a secondary law in order to formulate accounts of phenomena that had previously been explicated on intuitionist grounds. For example, he must explain how certain of our ideas—such as gold or iron—could be derived from even simpler ideas which correspond to fundamental sensations. Mill argued that when ideas are frequently conjoined they coalesce and take on the appearance of a single simple idea. Some such ideas coalesce so thoroughly that we are unable to think of one without the other. The idea of colour, for example, always contains the idea of extension, yet these ideas were originally distinct. Mill's doctrine of indissoluble association played an important role in his accounts of the origin of belief, necessity and various physical and moral ideas.

Mill maintained that there was no need to postulate resemblance as a basic principle of association. Here he was probably hoping to be able to avoid endowing the mind with a primitive, and inexplicable,
ability to detect similarity. Cases in which we associate ideas that resemble one another, he says, result from the operation of the principle of frequency. Mill argued that the idea of one sheep leads us to the idea of another, similar sheep, because we have frequently seen sheep together./110/ This account is clearly insufficient for explaining most cases of association that seem to be based upon resemblance. Some critics of Mill's account argued that in reducing resemblance to a case of frequency, Mill eliminated one of the necessary conditions for the operation of his principle of association by contiguity./111/ Even Mill appears to have recognized the weakness of his argument. He claimed that whether or not his account of resemblance is accepted should have little bearing upon the remainder of his account of mind./112/ Still it is clear that Mill's account of resemblance is completely unsatisfactory. We will see that Bain not only restored the principle of resemblance, but gave it a central role to play in his account of the development of knowledge.

James Mill's objective in the Analysis was to demonstrate that the mind consists of nothing but sensations and ideas combined into groups and sequences through association. There is no independent ego functioning to control the processes of the mind; there is not even a separate power of reflection enabling the mind to take notice of its own operations. Consciousness is not something over and above other processes of the mind; it is simply a general term we use to denote all the separate processes of the mind. To say that we are conscious of some feeling is identical to saying that we have that feeling./113/
Mill provided associationist accounts of all the intellectual processes. Reasoning is described as the manipulation of marks (language) placed upon clusters of sensations. Remembering involves reviving an idea of a past self alongside the idea of a present self and running backward over all the intervening states of consciousness called up by association. Imagining consists of combining ideas successively into trains of ideas./114/

In adopting an empiricist epistemology, Mill inherited some of its problems. Ever since Hume's critique, anyone adopting an empiricist epistemology had to attempt to provide an adequate account of our belief in causality and our belief in the external world. Both forms of belief must be justified if we are to be able to transcend subjectivity and to claim objective knowledge of the world. The intuitionists, such as Reid, had claimed that the character of such beliefs provided a refutation of the empiricist position. Since our belief in the necessity of a causal relationship and our belief in the existence of the external world could never be derived from sense experience (as Hume had himself demonstrated) it must be grounded in some inexplicable and ultimate characteristics of the human mind./115/

Mill provided an associationist account of belief in order to avoid drawing such a conclusion. Belief, he said, is simply a function of the frequency with which ideas have been conjoined. We believe, first of all, in the existence of an external world. Mill claimed that our belief in the external world arises from inseparable associations created among sense memories, supplemented by a belief in causation,
which leads us to believe that physical objects are causing the sensations. We believe in causality. Mill pointed out, following Hume, that the causal relationship is nothing but an invariable sequence of antecedent and consequent. He added that when this sequence has been experienced frequently, and no counterexamples have been experienced, an indissoluble association will be formed between antecedent and consequent, leading us to believe that this sequence is necessary. Finally, we believe in the uniformity of nature, that the future will resemble the past. Mill explained this as due to the fact that indissoluble associations have been formed in our past experience, leading us to believe that such things will be connected in the future./116/

In Mill's account, all of our beliefs, from superstition to the highest laws of mathematics and nature, rest upon the tendency of frequently associated ideas to become cemented together; that is, upon the law of indissoluble association. In the next chapter on John Stuart Mill, we will examine some of the shortcomings of this view.

Association and Will

Mill maintained that sensations and ideas are the sole constituents of the mind. Many of these sensations have a hedonic character; they are either pleasurable or painful. It is this hedonic aspect of sensations which provides the springs of human action and, thereby, accounts for the active powers of the mind./117/
Mill adopted Bentham's precept that humans tend to seek pleasure and avoid pain. He added that this leads us to pay attention not to the sensations of pleasure and pain per se, but to the *causes* of such sensations, for it is only through action upon such causes that pleasurable sensations can be detained and painful sensations removed. /118/

Ideas of pleasurable and painful sensations retain their hedonic character and thus are able to play an important motivational role. Ideas of pleasant sensations are known as *desires*; ideas of painful sensations as *aversions*. /119/ When hedonic feelings have become associated with the idea of the cause producing them, states of mind known as *affections* are produced. These include sympathy or love (when the feeling is pleasant) and antipathy or hate (when the feeling is unpleasant).

Mill pointed out that there is a natural tendency for our mind to pass to the causes of sensation rather than to dwell upon the sensation itself. The idea of the cause is said to be more *interesting* than the sensation itself. /120/ It follows from this, and from his account of the development of affections, that the most interesting causes will be those associated with the greatest number of pleasures. It is this, Mill claimed, which accounts for the interesting character and the motivating power of the ideas of wealth, power and dignity. /121/

Our own actions are also causes of pleasure and pain and they, in turn, become associated with pleasure and pain. The resulting state of mind is known as a *motive*, and it contains an inherent tendency toward
A particular motive will always lead to action unless there is a counteracting motive; in such cases the strongest motive will prevail. Like Bentham, Mill employed the term *disposition* to refer to a readiness to obey a particular kind of motive.

Mill's account of *volition*, or the mechanism of bodily and mental action, was similar to Bentham's, yet more highly elaborated. As it was this account which influenced discussions of will throughout the nineteenth century, we will examine it more closely. Like Bentham, Mill maintained that the will is not a faculty—not a distinct power guiding action—but simply a peculiar state of consciousness preceding action and arising, like all states of consciousness, from associations between sensations and ideas.

Mill divided his discussion of the will into two parts: the will's supposed control over bodily actions and its supposed control over trains of thought. However, the account given of bodily action provided the framework for his account of mental volition. Mill first established that muscular contractions can have mental causes. He presented multiple examples of sensations which serve as invariable antecedents of muscular action including the sensation of light which leads to pupil dilation and the sensation of pain leading to an eyelink. Repetition of such sequences leads to the formation of an inseparable association between the sensation and muscular contraction, and between the ideas corresponding to each. This inseparable association ensures that when the sensation (or idea) is presented, the action will follow.
The development of such inseparable associations accounts, in Mill's view, for automatic actions such as blinking our eyes when an object rapidly approaches. Mill's account of this action is that the idea of pain is called up by the rapidly approaching object. Because this idea of pain has become associated with a particular muscular contraction, the eyeblink will automatically follow./126/

Voluntary action involves the same associative mechanism but in such action a desire (an idea of pleasure) exists. The desire excites the idea of the action which serves as the cause of the pleasure, and this idea serves to produce the action./127/

Given such an account it makes no sense to say that we are able to directly will a given course of action. Our influence over our actions is indirect; it is only by calling into existence the appropriate idea that we can control muscular actions./128/ Particular ideas gain their "appropriate" character only through repeated pairings with particular acts. In the case of complex muscular actions—walking, dancing, writing—such control is established only very gradually./129/ However, once inseparable associations have been created, the process may take place with such ease that we pay no attention to it. Such is the case in writing, when we focus on what we wish to say, rather than upon the muscular contractions necessary to get it down on paper. Habits such as these acquire the character of involuntary actions, and become what Hartley called "secondarily automatic" actions./130/
After completing his account of our indirect control over bodily actions, Mill turned to mental action. Here his associative account of will faced greater challenges. The control we exert over our thoughts seems to provide evidence of a power capable of controlling association itself.\[131/\] Mill admitted that we are able to guide sequences of associated ideas in directions other than those they would take spontaneously.\[132/\] His problem was to account for this directed control of thought process within the associationist framework.

The process of recollection, or remembering, is one in which the sequence of thoughts seems to be guided or directed by the will. Mill said that recollection does involve a guided process of thought, but he argued that the guidance is provided by the presence of the idea of the goal, not by the will. Recollection, Mill pointed out, is always carried out for some purpose. As that goal is desired (i.e., associated with pleasure) the goal is, in itself an interesting idea. As such it dwells in the mind, giving birth to associations which guide the train of thoughts until the goal is reached.\[133/\]

Attention is another mental process which exerts control over the sequence of our thoughts and which appears to operate independent of association. Mill admitted that if we did have such a power, we would have unlimited control over the trains of our ideas, but he denied that this is the case. Attention, like every other mental phenomena, can be explained in terms of sensations, ideas or their combinations.\[134/\] In the first place, Mill pointed out that attention can only be directed toward sensations or ideas. When we examine the process of attending
closely, we find that we attend only to interesting sensations or ideas, that is, to pleasurable sensations or ideas, or those that have become associated with pleasure./135/ The interesting character of a sensation, Mill said, is all that we can mean by attention. Having a pleasurable or painful sensation is equivalent to attending to it./136/

On this account we have no direct control over attention, just as we have no direct control over will. Attention is under the control of characteristics of the sensations or ideas in question. Voluntary control or attention can only be achieved by altering the hedonic tone of a sensation or idea through association./137/ For instance, if we find a task unpleasant the only way in which we will be able to fix our attention on it is to associate the idea of the task with ideas sufficiently pleasant.

Mill's conclusion was that the active powers of the mind are explicable in terms of the known laws of the human mind and that it is not necessary to posit any independent powers to account for these powers./138/ An evaluation of Mill's account of the active powers of the human mind will be postponed until I have presented John Stuart Mill's criticisms of his father's psychology.

The Utilitarian-Associationist Program

James Mill was the most thoroughgoing of all the British thinkers adopting an empiricist view of the mind. Each and every mental operation was resolved into sensations and ideas combined into groups and sequences by association. At certain points his accounts are rather
unwieldy, at other points they are quite strained, but I have to admire the consistency with which he carried through his analysis.

Mill claimed, however, that this exposition does not provide a complete doctrine of the human mind. Not only does the "theoretical account of mind" still need to be perfected, but the practical branch of this doctrine remains to be developed. The associationist theory of the mind must be employed to develop the practical sciences of logic, of ethics, and of education./139/ It was Mill's hope that the associationist theory of the mind would be placed at the service of the utilitarian program of social reform. Consequently, the sciences comprising such a program—including logic, ethics, and education—will simply become applied branches of psychology.

At this point we should evaluate the relative contributions of Bentham and Mill. Both, it is clear, were interested in establishing a program of social reform, but they emphasized different paths to that goal. Bentham was primarily interested in legislation as the means by which the behavior of individuals could be altered and society remade. Mill was primarily interested in education as the means by which individual character was formed and society was shaped./140/

In contrast with Bentham, Mill's views display an increased emphasis upon genetic accounts of human thought and behavior. James Mill showed a far greater interest in the conditions responsible for the formation of patterns of thought and behavior than did Bentham./142/ Related to this last point we have seen that while Bentham accepted an experientialist account of human nature, it was Mill
who explicated it. Mill's Analysis provided a thoroughgoing account of the human mind that was to shape psychological discussions through the nineteenth century.

Finally, Bentham and Mill shared a polemical approach to the topics on which they wrote. In Bertrand Russell's terms, "they were in the position of men who raise armies to enforce peace." The responsibility for continuing the defense of these doctrines was passed on to the individual they hoped would become a "successor worthy of both of us," John Stuart Mill.
NOTES FOR CHAPTER 1


"They denounced 'intuitions,' or beliefs which might override experience as 'innate ideas' in a new dress; and the attempt to carry out this view systematically became the distinctive mark of the whole school." (Ibid., 2:289).

3. Bentham read, and was significantly influenced by Hume's *Treatise*. His consistent rejection of metaphysical entities led him to reject most of the philosophers political ideas. In ethics, he was particularly opposed to the doctrine of a moral sense and the postulation of a *summum bonum*. Mary Mack, *Jeremy Bentham: An Odyssey of Ideas* (New York: Columbia University Press, 1963), p. 220.


5. Environmentalism is a position that is closely related to empiricism. If all our knowledge comes from sense experience, then all individuals are initially equal and individual differences must be the outcome of differing environmental circumstances. The position that I am calling environmentalism is virtually identical with that called geneticism by Maurice Mandelbaum in *History, Man and Reason: A Study in Nineteenth-Century Thought* (Baltimore, Maryland: Johns Hopkins Press, 1971) pp. 141-45, 147-63. I have chosen not to employ Mandelbaum's term because of its developmental connotations.
6. The program of applying scientific method to the moral sciences was initiated by Hume in Book III of the Treatise. Bentham was inspired by this work to attempt the same. Stephen, English Utilitarians, 1:177; Elie Halévy, The Growth of Philosop... (London: Faber and Faber, Ltd., 1952) pp. 9-15.

7. Associationism provides the mechanism whereby all knowledge can be built up from sensations and ideas. It also provides an account of how the interests of individuals might be brought in line with the interests of society as a whole. Individuals are able to learn to associate pleasure with acts beneficial to society and pain with acts detrimental to society.

8. Leslie Stephen described the greatest happiness principle as follows:

Right and wrong conduct, we may now take for granted, mean simply those classes of conduct which are conducive to or opposed to happiness... The legislator, like everyone else, acts rightly in so far as he is guided by the principle of 'maximising' happiness." (Stephen, English Utilitarians, 1:244.)

9. Halévy, Philosophic Radicalism, p. 5; Benjamin Spector, "Jeremy Bentham, 1748-1832: His Influence upon Medical Thought and Legislation," Bulletin of the History of Medicine 37 (1963):25-42. George III reigned from 1760-1820 but went mad in 1810. His son, the dissolute Prince Regent, became George IV in 1820. In 1830 he died and was succeeded by his brother, William IV. in 1837 their niece, Victoria, ascended the throne. Industrial change began to alter the social, political and economic fabric of Britain after 1750. The American and French Revolutions, with their demands for liberty based upon the doctrine of natural rights, raised concern among Britons. While many perceived the need for democratic reform, others opposed such steps from fear of mob rule. Catherine the Great's reform work in Russia was much admired by Bentham; at one time he considered offering his services to her. Halévy, Philosophic Radicalism, p. 86. Bentham's brother, Samuel, made the journey to Russia, and Bentham joined him there from 1885-1887. Ibid., p. 24.

10. Bentham offered his services to several governments and in 1822 put out a 'Codification Proposal' offering to do legal codification for any nation in need of a legislator. Stephen, English Utilitarians, p. 223.

11. The information used in this section is drawn primarily from Halévy, Philosophic Radicalism, chap. 1; Stephens, English Utilitarians, chap. 5 and Mack, Jeremy Bentham, pt. 1.

12. Upon matriculation and graduation Bentham was required to take a religious oath, an act which troubled him for the remainder of his life. Stephen, English Utilitarians, 1:173.
13. Blackstone, a believer in natural rights and the social contract, was severely attacked in one of Bentham's earliest works, *Fragment on Government*. Ibid., 1:173-174, 181-182. In 1766, Bentham set up a small chemistry laboratory and conducted a number of chemistry experiments. Mack, *Jeremy Bentham*, p. 96. Mack argues that it was the pure and applied character of chemistry that suggested to Bentham what sort of a science utilitarianism might be. She maintains, however, that the key analogy was provided by the medical sciences. Ibid., pp. 262-264. Gertrude Himmelfarb suggests that Bentham became acquainted with the work of Joseph Priestley through his interest in chemistry. Himmelfarb, "Bentham Scholarship and the Bentham 'Problem'," *Journal of Modern History* 41 (1969):189-206. See also Halévy, *Philosophic Radicalism*, p. 24.

14. Ibid., p. 322. This description was written by Bentham in 1827. Himmelfarb claims that this statement reflects the memory confusions of an old man. She asserts that it is more likely that Bentham derived the principle of utility from Beccaria than from Priestly. Himmelfarb, "Bentham Scholarship," p. 198-99.

Joseph Priestley was important as a chemist and as one of the leading intellectuals of the Unitarian faith. He preserved Hartley's doctrine of association by issuing a new edition of *Observations on Man* in 1775. This edition eliminated most of Hartley's physiological speculations and contained several appendices written by Priestley. Halévy, *Philosophic Radicalism*, p. 440. Bentham appears to have derived his associationism from Priestley. Ibid., p. 8.

15. Ibid., pp. 18-21; Mack, *Jeremy Bentham*, p. 104. Helvetius's most influential work was *De l'esprit* which Bentham read in 1869. Cesare Beccaria's work *Dei delitti e delle pene* (1764) first appeared in English translation in 1767. Ibid., pp. 18-21. Others that he read during this period included Condillac, Maupertuis, Voltaire and D'Alembert.

16. As a child, Bentham wondered about the meaning of the term genius. While reading Helvetius he had an insight: genius meant to beget or produce. Bentham asked himself, "Have I a genius for anything? What can I produce?" From Helvetius he had learned that the most important of all tasks was legislation. Continuing his ruminations Bentham queried, "And have I indeed a genius for legislation? I gave myself the answer, fearfully and tremulously--Yes!" The Works of Jeremy Bentham, J. Bowring, ed., 11 vols. (Edinburgh: William Tait, 1838-1843) 10:27. Also quoted in Mack, *Jeremy Bentham*, p. 58.

17. Bentham wrote,

"The idea of considering happiness as resolvable into a number of individual pleasures, I took from Helvetius: before whom it can scarcely be said to have had a meaning. The idea of estimating the value of each sensation by analysing it into . . . four ingredients [intensity, duration, proximity, certainty] I took from M. Beccaria." (University College
Collection, Box 27; quoted in Mack, Jeremy Bentham, p. 107.)


20. Ibid., pp. 109-11. Bentham began a project of revising D'Alembert's encyclopedic tree, a project not completed until 1815 when it appeared in his work Chrêstomathia.


22. Mack, Jeremy Bentham, p. 210. Bentham seems to have accepted the interpretation of Locke popular in his day. Locke's view was actually more sophisticated than that adopted by the utilitarians. While he said that all of the content of knowledge is derived from sense experience, a close reading indicates that he regarded the mind as actively processing that content. Mandelbaum defends Locke against the charge that he reduced the mind to a passive receiver of sense experience. Mandelbaum, History, Man and Reason, pp. 148-54. Mandelbaum also traces the transformation of Locke by such individuals as John Gay. Ibid., pp. 154-56. Regarding the differences between Locke's view and those of his successors, Mandelbaum writes,

"He had prepared the way for their more radical rejection of nativism through his insistence that all of the materials of human knowledge must be furnished by experience. However, he stopped short of the view that the mind's own operations were to be interpreted in terms of the effects of experience; thus he stopped short of thorough rejection of traditional forms of nativism. On the other hand, his successors came to view that which Locke attributed to the powers of judgment as being due to experience." (Ibid., pp. 152-53.)

Mandelbaum's account does not explain why such a first-rate thinker as Leibniz drew similar conclusions in New Essays on the Human Understanding. Several of the later philosopher-psychologists we will be examining expressed interest in Leibniz.


24. Mack stresses the impact of Bacon on Bentham saying,

"He [Bentham] borrowed the content of his thought from Priestley, Helvetius, Beccaria, Locke and Hume, among others; but its form and method were inspired by Bacon. If Helvetius
gave him his first vision of a new science of morals and legislation, his reading in Bacon confirmed it and showed him how it might be done." (Ibid., p. 129.)

For both Bacon and Bentham the initial step in constructing such a science was a critique of other methods. The next step involved the collection of detailed facts. It must be noted that Gertrude Himmelfarb has criticized Mack's account of the influence of Bacon on Bentham. She points out that a recent edition of Bentham's early correspondence contains no mention of Bacon. Himmelfarb, "Bentham Scholarship," p. 200.


27. Principles of Morals and Legislation was first printed in 1780 but Bentham held back on publication, planning to make it part of a larger work. Paley published Principles of Morals and Political Philosophy in 1785, a work which applied the principle of utility to problems in morals and theology. Bentham's friends became quite concerned at the success of Paley's book and pressured Bentham to publish his own work, which he did in 1789. Halévy, Philosophic Radicalism, pp. 22-26. Paley's work became the basic text in morals at Cambridge for the next fifty years. Ibid., p. 23.

28. Ibid., p. 254. Halévy maintains that the full conversion was not achieved until Bentham met James Mill. Ibid., p. 255. Mack disputes this common interpretation, claiming that Bentham was a democrat by 1790. Mack, Jeremy Bentham, pp. 404, 438.

29. The fate of Bentham's Panopticon project typifies the reception of his practical proposals to ease social problems. The Panopticon was a building design well adapted--so Bentham claimed--to the housing of criminals or paupers. The design consisted of several corridors radiating out from central management offices, thereby enabling the head inspector to observe all that was going on. Ibid., pp. 83-84. Bentham's proposal was developed at a time when England was suffering from a surplus of criminals because after the American Revolution the simple expedient of shipping criminals to America was no longer possible. Throughout the 1790's, Bentham negotiated with members of parliament for the implementation of this project. Parliament adopted his scheme on a trial basis in 1794, but there were many delays and official opposition finally killed the project. Ibid., pp. 251-53; Stephen, English Utilitarians, p. 202. The criminal problem was ultimately "solved" by a system of deportation to Australia. In 1897, Bentham tried to revive the Panopticon scheme, this time as a solution to the pauper problem created by the industrial revolution. Bentham envisioned a national network of self-sufficient houses of industry complete with farms and workshops. Once again the plan was not adopted. Ibid., pp. 203-4; Mack, Jeremy Bentham, pp. 212-13. The Poor Law of 1834 later dealt with the pauper problem by
establishing workhouses. Edwin Chadwick used many of the principles proposed by Bentham in the Panopticon in formulating the plans for these workhouses. Finer, Edwin Chadwick, pp. 74-75, 85. The opposition to his proposals led Bentham to conclude that those in power could not be trusted to implement legislation that would produce the greatest happiness for the greatest number. Halévy, Philosophic Radicalism, pp. 253-54; Stephen, English Utilitarians, p. 206.

30. This work contained translations of several of Bentham's works as well as a more concise statement of the doctrine, written by Dumont. ibid., pp. 207-8.

31. In 1803 as many copies of the Traites had been sold in St. Petersburg as in London. Ibid., p. 208. The work was reviewed in the Edinburgh Review in 1804. Although the review was generally unfavorable, Bentham's ability was praised. Ibid.

32. Bowring, Works of Bentham, 1:1. Halévy maintains that this passage is lifted, almost word for word, from Helvetius. Halévy, Philosophic Radicalism, p. 26. The passage is more metaphorical than Bentham's usual work and his own impatience with such a style can be seen in the subsequent sentence: "But enough of metaphor and declamation, it is not by such means that moral science is to be improved." Ibid. Bentham appended the following note to this passage in 1822, "The greatest felicity principle has recently been substituted as more accurately capturing the sense of the principle." Ibid.

33. The felicific calculus was formulated primarily as a tool for legislators who were to become moral mathematicians. Mack, Jeremy Bentham, pp. 243-45.

34. Underlying this calculus were two assumptions: first, that it is possible to specify units of pleasure and pain and second, that no qualitative, but only quantitative distinctions are to be made among various kinds of pleasures and pains.

Several criticisms often made of Bentham's ideas appear to be unwarranted. Although pleasure and pain may not admit of precise measurement, the application of such a calculus might still be useful in making moral evaluations. Halévy, Philosophic Radicalism, p. 31. Bentham claimed that men already engage in such rudimentary calculations; his aim was to bring greater precision into this activity. Mack, Jeremy Bentham, pp. 248-49.

A second criticism is that Bentham ignored individual differences in pleasure and pain. Bentham did recognize that such differences exist and suggested that they might be taken into consideration by judges and legislators. Stephen, English Utilitarians, p. 254. Nevertheless, full acknowledgment of individual differences was not likely to be possible with the calculus. Mack, Jeremy Bentham, p. 246. Finally, Bentham is criticized for not distinguishing between higher and lower pleasures. We will return to this issue in the chapter on John Stuart Mill.
35. Bentham identified two main virtues, Prudence, the exercise of foresight into one's own affairs and Benevolence, the extension of sympathy for other men. Enlightened self-interest involves bringing these virtues into harmony with one another; with an awareness that the public interest has an effect upon the private. Ibid., pp. 308-10. Such an awareness develops as man becomes civilized. Ibid., pp. 206-8.


37. Works of Bentham, 1:161. Bentham hoped that legal reform would reshape behavior and attitudes so that the moral or popular sanction would come to have greater force than the political or legal.

38. Mack argues that Bentham's early proposals are in direct contrast with the laissez faire view generally attributed to him and more consistent with the way in which Benthamite reformers acted during the nineteenth century. Mack, Jeremy Bentham, pp. 295-97. See also Stephen, English Utilitarians, 1:309-10.


40. In A New View of Society: Essays on the Principle of the Formation of the Human Character (1813), Owen stated:

"Any character, from the best to the worst, from the most ignorant to the most enlightened, may be given to any community, even to the world at large, by applying certain means; which are to a great extent at the command and under the control, or easily made so, of those who possess the government of nations." (quoted in Mandelbaum, History, Man and Reason, p. 161.)

The environmentalism of the Owenites was so extreme that they argued that individuals ought not to be punished for the crimes they commit. John Stuart Mill later described the Owenite view as a form of fatalism. Mill, System of Logic, bk. 6, chap. 2, sec. 3.

41. The Chrestomathia was a collection of papers on educational topics. It contained Bentham's completed encyclopedic overview of knowledge with subjects arranged according to their relative utility. The emphasis to be placed upon subjects in the school was determined by

42. Halévy, Philosophic Radicalism, p. 433. Both Priestley and Hartley stressed the value of the principle of association of ideas in leading us to understand and guide the development of moral conduct. Mandelbaum, History, Man and Reason, p. 156. Mandelbaum writes:

"Thus, in its origins, associationism was not what James Mill and especially Alexander Bain later sought to make it, a full-blown psychological system serving to classify and relate all aspects of mental life; it was, rather, a principle used to connect a general epistemological position with more specific issues of intellectual and practical concern." (ibid.)

The central thesis of this dissertation is that the emphasis on practice was retained in the work of these men and passed on to psychologists at the end of the century.

43. As applied to Bentham, this analysis is logically, rather than historically, accurate. Bentham rarely discussed the principle of association explicitly. Hartley had explained the development of egoistic and sympathetic feelings in this manner and James Mill revived such an analysis. Halévy, Philosophic Radicalism, p. 17.

44. McReynolds, "Motivational Psychology of Bentham (I)," p. 239; C.K. Ogden, Bentham's Theory of Fictions (Paterson, New Jersey: Littlefield, Adams and Co., 1959), p. ixxii. This aristotelian view of the mind was also shared by James Mill, although it was Aristotle minus the teleology. Later in the century it was replaced by a Kantian tripartite view, involving intellect, will, feelings. This new division seems to have played a role in focusing greater attention upon the will.


46. We will see that Bain echoed this warning. For Bentham's theory of fictions see Ogden, Bentham's Theory of Fictions. Ogden quotes Bentham on the proper use of such terms:

"What is here meant is, not that no such fictions ought to be employed, but that to the purpose and on the occasion of instruction, whenever they are employed, the necessity or the use of them should be made known." (ibid., p. xliii.)

47. Bentham identified several qualities of pleasure and pain that determine its effectiveness. These include the intensity of the feeling, its duration, its proximity and its probability. Playing a secondary role is the purity and fecundity of the feeling. McReynolds, "Motivational Psychology of Bentham (II)," p. 351. Bentham distinguished between motives to the will and motives to the understanding, maintaining that the latter are only properly called motives when they have some (indirect) effect upon the will. ibid..
p. 356.


49. Ibid.

50. Bentham wrote, "A man is said to have an **interest** in any subject in so far as that subject is considered as more or less likely to be to him a source of pleasure or exemption from pain." (Ibid., 1:207. See also Ibid., 2:477 where Bentham equated interest and motive.) this seems to contradict earlier writings where he restricted volition to "material acts" writing, "with acts, therefore, that rest purely in the understanding, we have not here any concern." (Ibid., 1:46.)

51. Bentham regarded a neutral vocabulary of motives as essential for ethical and legislative purposes, since it would enable moralists and legislators to resist the unfortunate tendency to evaluate actions on the basis of motives. Bentham maintained that motives, regarded in ethical terms, are neither good nor bad. The morality of an action is to be evaluated solely on the basis of the consequences of that act. Stephen, *English Utilitarians*, pp. 256, 262.


53. Ibid., p. 262.

54. The Deontology has been described as Bentham's moral primer for the masses. Mack, *Jeremy Bentham*, pp. 6, 249. Although it was not published until after Bentham's death, it was written during the same period that Bentham was working on the *Chrestomathia*. The full title of the work is worth citing: Deontology, or, the Science of Morality: in which the Harmony and Coincidence of Duty and Self-interest. Virtue and Felicity. Prudence and Benevolence, are explained and exemplified.

55. This, of course, is based upon Bentham's completed tree of knowledge. The order of studies in the Chrestomatic Day School was: (1) Elementary Arts--reading, writing and arithmetic; (2) Natural History; (3) Natural Philosophy; (4) Architecture and Husbandry; (5) Medical Sciences; and (6) Mathematical Sciences. Subjects often appearing in similar curricula, but omitted in Bentham's scheme for various reasons, were: (1) Gymnastic Exercises; (2) Fine Arts; (3) Applications of Mechanics and Chemistry; (4) Belles Lettres; (5) Moral Arts and Sciences; and (6) Logic. *Chrestomathia*, p. 18.

56. Ibid.

58. For biographical details of James Mill's life, I have relied on the following works: Alexander Bain's dry but thorough account in James Mill: A Biography (London: Longmans, Green and Co., 1882); John Stuart Mill's account of his father's life in his Autobiography (New York: Bobbs-Merrill, 1957 [1873]); George S. Bower, David Hartley and James Mill (New York: G. P. Putnam's Sons, 1881) and W. H. Burston, James Mill on Philosophy and Education (London: The Athlone Press, 1973). Sir John and Lady Jane Stuart had established a fund to aid young men preparing to serve the Scottish church. James Mill attended Edinburgh with the help of this fund and later became the tutor of the Stuart's daughter and a close friend of the family. Bain, James Mill, pp. 11-13. Mill's attendance at Dugald Stewart's lectures is significant. Stewart was a student of Thomas Reid, the Scottish common sense philosopher who had opposed Hume's scepticism and David Hartley's materialistic psychology. Reid was an intuitionist, postulating "innate mental dispositions" to account for perception and thought. Stewart followed this path but not uncritically; he endorsed Hume's view of causation for the physical sciences. Stephen, English Utilitarians, 1152-55.

James Mill wrote concerning Stewart: "The taste for the studies which have formed my favorite pursuits and which will be so till the end of my life, I owe to him". Quoted in Bain, James Mill, p. 16. Controversy remains concerning the impact of Stewart's thought on the content of James Mill's thought. Halévy argues that Mill did not become a disciple of Hartley until after meeting Bentham and that it was not until 1815 that he took a stand against his former teacher and became a proponent of associationism. Halévy, Philosophic Radicalism, pp. 437-51. More recently, Daniel Robinson has claimed that Mill derived his associationism directly from Stewart who reitered many of Hume's criticisms of the postulation of innate mental dispositions. Robinson, An Intellectual History of Psychology, pp. 237-38. Consistent with Halévy's interpretation is Burston's argument that Mill adopted psychological hedonism for political reasons and only later shifted his view of mental philosophy. Burston, Mill on Philosophy and Education, pp. 149-53.

59. Mill, Autobiography, pp. 4; Bain, James Mill, pp. 36-70; Bower, Hartley and Mill, p. 12. For information on Mill's activities during these early years in London, see ibid., pp. 12-17.

60. For details on Mill's difficult financial situation and his manner of coping with it, see Burston, Mill on Philosophy and Education, pp. 40-45.


John Stuart's education was a joint project of Bentham and the elder Mill. James Mill wrote to Bentham in 1812:

"If I were to die any time before this poor boy is a man, one of the things that would pinch me most sorely would be, the being obliged to leave his mind unmade to the degree of excellence of which I hope to make it... the only prospect which would lessen that pain, would be the leaving him in your hands. I therefore take your offer quite seriously and stipulate merely that it shall be made as good as possible, and then we may perhaps leave him a successor worthy of both of us." (quoted in Bain, *James Mill*, pp. 119-20.)


65. Bain believed that Mill assisted Bentham in the editing of the Table of the Springs of Action. Bain, *James Mill*, p. 127. Others dispute this and maintain that the Table of the Springs of Action was one of the few works of Bentham not edited by others. See McReynolds, "Motivational Psychology of Bentham (II)," p. 349 (n. 2). In either case, as Bain pointed out, the final products—*Chrestomathia* and "Education"—show no signs of collaboration. Bain, *James Mill*, p. 143.

66. The article is reprinted in Burston, *Mill on Education*, pp. 41-119. Burston claims that the article was written in 1815. Ibid. p. 3. Bain, on the other hand, stated that it was probably written in 1818, after the publication of the *History of British India*. Bain, *James Mill*, p. 247. The very earliest Mill could have begun on the article was in 1814 when he was first approached by Macvey Napier concerning the project. Ibid., p. 128.

67. Burston claims that this article represented a turning point in Mill's intellectual career as it made him aware of the need to develop the philosophical foundations of utilitarianism. Burston, *Mill on Philosophy and Education*, p. 47.

68. Burston, *Mill on Education*, p. 41. Mill adopted Helvetius' environmentalism, maintaining that differences among individuals were primarily due to differences in their education. Ibid., pp. 69-72. Mill said that since the goal of education is "to question, whether the people should be educated, is the same with the question, whether they should be happy or miserable." Ibid., p. 105. Concerning Mill and Helvetius, Halévy commented that

"James Mill was a born propagandist and if education,
Helvetius maintained, was all-powerful in the formation of character, then education was the instrument to use in order to convert the nation to the Utilitarian Morality." (Philosophic Radicalism, p. 282.)

70. Alexander Bain criticized Mill's apriori approach to the subject, writing that the article shows no signs of Mill ever actually having been a learner or a teacher. Bain, James Mill, p. 247. James Mill's study of the human mind led him in 1816 to attempt a reading of Kant's Critique of Pure Reason, a work he dismissed summarily. Soon after he read Hartley whose work, he wrote, gave "the true scent." Burston, Mill on Philosophy and Education, pp. 47-48. Mill was greatly disappointed with the quality of writing on the human mind and wrote to Francis Place in 1817: "if I had the time to write a book I would make the human mind as plain as the road from Charing Cross to St. Paul's," Ibid., p. 53. The Analysis of the Phenomena of the Human Mind was begun in 1822 and published in 1829.


71. Mill's identification with the empiricists is not surprising as he was primarily interested in social reforms. However, he felt that Hobbes, Locke and Hume had not gone far enough in their examination of the human mind. Ibid., pp. 52-56. Condillac and Hartley, he maintained, saw the problem more clearly but of these two he considered Hartley's contribution to be the greater. Etienne Bonnot de Condillac (1715-1780) had modified Locke's system in Essai sur l'origine des connaissances humaines (1746) and Traité des Sensations (1754). Condillac rejected Locke's claim that reflection is one source of knowledge; he proposed instead a thoroughly sensationistic and Associationistic psychology. H. C. Warren, History of the Association Psychology (New York: Charles Scribner's Sons, 1921), pp. 183-84. David Hartley's Observations on Man, his Frame, his Duty and his Expectations was published in 1749. It is likely that Mill became acquainted with Hartley's work through Joseph Priestley's abridged edition which was published in 1775. Hartley maintained that sensations were the sole source of our knowledge and that the principles of association could account for the development of all intellectual and active phenomena. Ibid., pp. 51-62. Hartley had also formulated a theory of vibrations to account for the correspondence between mental and neural activity. Priestley eliminated the passages referring to this theory in his abridged edition.


73. Ibid., p. 52. In Mill on Philosophy and Education, Burston emphasizes that environmentalism, rather than associationism was crucial to Mill's views on education. Burston asserts that the theory of association of ideas is too vague and flexible to be of much specific use to educators. (See pp. 238-39.)
74. Mill said that intelligence involves having intelligent trains of ideas and that "Trains of ideas are intelligent, when the sequences in the ideas correspond to the sequences in nature." Ibid., p. 94. In another part of the article, he pointed out that intelligence involves both knowledge and sagacity or the "possession of numerous ideas with the masterly command of them." Ibid., p. 63. This focus on intellectual training implies that logic must play a central role in any curriculum.

75. It must be emphasized that in Mill's account the value of such virtues is ultimately reduced to pleasure and pain; that is, such virtues are the means by which we obtain pleasure and avoid pain.

76. Ibid., p. 65. Mill may have had Bentham's Deontology in mind when calling for a recipe book of morally-correct action. In any event, he is placing himself squarely in the utilitarian tradition. If we are to train individuals to become instruments of happiness for themselves and others, ethics must tell us which actions are productive of the greatest happiness.

77. Ibid., pp. 41-42.

78. Ibid., pp. 114-17.

79. Ibid., pp. 117-19.

80. Mill wrote:

"We may conceive that certain trains might, by the skillful employment of the early years, be rendered so habitual as to be uncontrollable by any habits which the subsequent period of life could induce, and that those trains might be the decisive ones, on which intelligent and moral conduct depends. The influence of a vicious and ignorant society would in this case be greatly reduced . . . " (Ibid., pp. 116-17.)

81. Ibid., p. 93

82. James Mill's approach to John Stuart's education was characterized by fortitude as well as thoroughness. John Stuart described preparing Greek lessons at the same table at which his father was writing. Lacking a Greek-English lexicon, he was forced to interrupt his father for the meaning of every word he did not know. James Mill produced several volumes of his History of British India as well as many articles under such conditions. Mill, Autobiography, p. 6.

83. John Stuart acquired an interest in history from his reading during this period. Even John Stuart's lighter reading appears to have been chosen for its beneficial effects on a developing character. Mill said of his father, "He was fond of putting into my hands books which exhibited men of energy and resource in unusual circumstances, struggling against difficulties and overcoming them." Ibid., p. 7.
This approach was no doubt based upon the Bell-Lancaster monitory system which the elder Mill regarded so highly. His son was far less enamored of it, partly because he was held responsible for how well his brothers and sisters learned their lessons. While he felt he learned a great deal by serving in the role of teacher, he regarded the method of teaching as inefficient and as inconsistent with moral discipline. Ibid., p. 8. While Mill's reading during this period included works of experimental science, he never observed, nor carried out, any experiments. Ibid., p. 13.

The Gorgias, the Protagoras and the Republic were among the dialogues Mill read. John Stuart concurred with his father's opinion that the Platonic dialogues are invaluable as an introduction to the kind of mental discipline necessary for correcting errors and confusions of thought. Ibid., p. 16.

Mill stated that

"it was one of my father's main objects to make me apply to Smith's more superficial view of political economy, the superior lights of records, and detect what was fallacious in Smith's arguments or erroneous in any of his calculations." (Ibid., p. 20.)

Mill said, concerning this training and a similar training in logic, that it not only provided him with an accurate knowledge of the two subjects, but made him a thinker on each.

John Stuart described himself as rather below average in "natural gifts" and therefore concluded that any girl or boy of average capacity would be able to accomplish as much as he if they were provided with similar educational opportunities. He wrote that

"if I have accomplished anything, I owe it... to the fact that through the early training bestowed on me by my father, I started with an advantage of a quarter of a century over my contemporaries." (Ibid., p. 21.)

Mill said:

"I never thought of saying to myself, I am, or I can do, so and so. I neither estimated myself highly nor lowly; I did not estimate myself at all. If I thought anything about myself it was that I was rather backward in my studies, since I always found myself so, in comparison with what my father expected from me." (Ibid.)

Ibid., p. 37.
91. Helvetius was John Stuart's own choice but the remaining works were selected by James Mill who considered Hartley's work "the really master-production on the philosophy of mind." Ibid., p. 45. John Stuart studied these works by preparing abstracts of each chapter along with remarks. Mill said that the discussion of these abstracts with his father forced him into greater precision with regard to psychological doctrines.

92. James Mill was Bentham's first choice as editor of the journal, but Mill declined the position because of his duties at India House. Ibid., p. 59. John Bowring--later Bentham's literary executioner and biographer--became editor instead. While the Westminster Review was relatively successful, many of the Benthamites expressed dissatisfaction with the views expressed in it. Ibid., pp. 60-64. In 1835 the Mills founded the London Review with the hope of establishing a more radical mouthpiece for their views. Shortly after its founding it merged with the Westminster Review. John Stuart Mill was editor of the London and Westminster Review from 1835-40, and considerably broadened the basis of the periodical. He also required signed articles, thus breaking with the tradition of anonymity followed by such periodicals as the Edinburgh Review and the Quarterly Review.

93. John Stuart Mill stated that the tenets of the school included Bentham's opinions, as well as Malthus' population principle. The latter was seen as the only way of securing high wages and full employment for the masses of workers. Ibid., p. 68. Other views of James Mill adopted by the Benthamites included confidence in representative government and freedom of discussion; an energetic concern for human well-being coupled with a rejection of "common morality" (with its foundation in "asceticism and priestcraft") and, in psychology, a thoroughgoing environmentalism. Ibid., pp. 68-70. John Stuart wrote concerning his father that

"In psychology, his fundamental doctrine was the formation of all human character by circumstances, through the universal Principle of Association, and the consequent unlimited possibility of improving the moral and intellectual condition of mankind by education. Of all his doctrines none was more important than this, or needs more to be insisted on. Unfortunately there is none which is more contradictory to the prevailing tendencies of speculation, both in his time and since." (Ibid., p. 70.)


96. In 1820 Brougham introduced the first bill calling for a national system of education. This bill was, of course, defeated. Brougham's friendship with Mill probably dates back to their days in Edinburgh. Bain, James Mill, p. 75. John Stuart Mill did not care for Brougham and claimed that his father's attachment to him was based solely on his public usefulness. Ibid., p. 76. Joseph Hume was another personal friend of Mill's who was also an active public figure. Ibid.,
p. 77. It was not until the 1830's and 40's that the Benthamites—now including among their numbers Edwin Chadwick and the educational reformers J. A. Roebuck, William Ellis and James Kay-Shuttleworth—became a force in Parliament. Silver, English Education, pp. 90-91.

96. The idea for a university in London originated with Thomas Campbell, a poet. Although Bentham personally did not play much of a role several of his disciples were involved in the planning of the university. Henry Brougham, James Mill and Joseph Hume played the largest role. Francis Place and George Birkbeck were also closely involved with the project. Hugh Hale Bellot, University College London, 1826-1926 (London: University of London Press, 1929), chap. 2. The University was modelled on the Scottish and German Universities in being non-collegial, with instruction provided by lecturing professors. Its most distinctive feature, however, was the omission of theology from the course of study.


98. The London University became University College, London, while a separate body, the University of London, was created to establish examinations and confer degrees. Adamson, English Education, p. 92. Bentham's body can still be viewed at University College.

99. Silver, English Education and the Radicals, p. 42. From Bain's description it appears that Mill's involvement in the SDUK was nominal. Bain, James Mill, p. 325.

100. Adamson, English Education, pp. 39-40. The self-help movement that played such a large role in the mid-nineteenth century can be traced to the SDUK. The popularity of such works as Samuel Smile's Self-Help (1859) and Thrift (1875) demonstrates that liberal individualism had permeated society. More radical historians describe the founding of the SDUK as the beginning of the middle classes' patronizing of the working class. Harold Silver points out that the contrast between the social reform/social control philosophy of the utilitarians and the reform activities of the independent working class movement became quite clear during the 1830's. Silver, English Education and the Radicals, pp. 41-45.

101. James Kay-Shuttleworth, who was chair of the Privy Council's committee for education in 1839, considered education necessary to preserve social order. Kay-Shuttleworth, like many of his class, was appalled by the Chartists' demands for political democracy in the late 1830's. He argued that leaving the masses uneducated left them open to manipulation by such men as the "ignorant and unprincipled" Chartist leaders. James Kay-Shuttleworth, "Recent Measures for the Promotion of
Education in England." (1839); reprinted in Trygve R. Tholfsen, ed. Sir James Kay-Shuttleworth on Popular Education (New York: Teachers College Press, 1974) p. 92. The London police force was also organized during the 1830's to deal with the mass demonstrations held by the Chartists. See also Silver, English Education, p. 46.

102. See n. 74 above.


104. Mill quoted Locke (Essay, i., 1,2):

"I shall not at present meddle with the physical consideration of the mind, or trouble myself to examine wherein its essence consists or by what motions of our spirits or alterations of our bodies, we come to have any sensation by our organs or any ideas in our understandings, . . . These are speculations which, however, curious and entertaining, I shall decline, as lying out of my way in the design I am now upon." (Mill, Analysis, i:2.)

105. Ibid., 1:62. Sensations and ideas are the primary states of consciousness which serve as the basic constituents of all states and trains of states of consciousness, in short for all mental phenomena. Ibid.

106. Mill stated that the general law of association was the principle that "our ideas spring up, or exist, in the order in which sensations existed, of which they are copies." Ibid., 1:78.


108. Mill, Analysis, 1:90-93. Many historians of psychology (e.g., Boring) have followed Warren's lead in maintaining that the distinctive difference between the associationism of James and John Stuart Mill is analogous to the difference between a mechanical and chemical mode of explanation. Warren, History of the Association Psychology, pp. 87-89, 95, 98-99. James Mill's doctrine of the coalescence of ideas seems to me to exemplify the latter mode of explanation. The example most often presented as evidence of J.S. Mill's mental chemistry—the generation of the color white by the
spinning of a prismatic wheel—was borrowed from his father. See Analysis, 1:90-91. John Stuart also praised his father for employing the chemical method in the study of mind. Mill, Logic, bk. 6, chap. 4, sec. 3.

109. Mill, Analysis, 1:93-97. The development of the doctrine of indissoluble, or inseparable, association was James Mill's distinctive contribution to associationism. The doctrine was employed by him and his son to deal with psychological, logical, and ethical phenomena that had resisted associationist accounts. All mental phenomena whose stability, fixedness or durability seemed to bely an empirical origin—e.g., laws of nature and laws of logic—were accounted for as the product of undissoluble associations. The law represents the nineteenth century empiricists' attempt to circumvent Humean scepticism.

110. Ibid., 1:106-110.

111. Concerning this aspect of his father's work see ibid., 1:111-14 (n. 35).

112. Mill asserted:

I have not thought it necessary to be tedious in expounding the observations which I have thus stated; for whether the reader supposes that resemblance is, or is not, an original principle of association, will not affect our future investigations. (Ibid., 1:114.)

Mill appears to have been led to reject a principle of similarity by his desire to deny that the mind has a power of discerning a particular relation (similarity) among ideas. Such a power could not be derived from sensation. Stephen, English Utilitarians, 2:295. Mill appeared determined to admit no powers of the mind beyond receptivity to sensations and the power of combining ideas and sensations. While Mill may be correct in maintaining that little depends upon acceptance of his analysis in this case, the reader of the Analysis is placed on guard against other observed conclusions following from such sparse premises. Mill's polemical program, rather than careful observation of the human mind, seems to have shaped his psychology at certain points.

113. Mill, Analysis, 1:224-25. According to Mill, the terms conscious and consciousness are simply generic marks applying to all the different classes of our feelings (e.g., smelling, having ideas, remembering, reasoning, believing). The term conscious refers these feelings to the feeler; while consciousness refers to feelings themselves. Ibid., 1:225-26.

114. Ibid., 1:chaps. 6-10. This brief summary does not do justice to Mill's accounts of these processes. The important point here is that Mill maintained that there is nothing in any of these mental operations that has not arisen from the association of sensations and ideas. Reasoning is regarded as syllogistic and as involving associations among the terms appearing in the propositions. Ibid., 1:425. Remembering is
even more complex. It involves reviving an idea of a past self (a cluster of ideas) and running over the train of ideas separating that past self from the "present self" ibid., 1:330-31. Imagining simply involves calling up a train of (associated) ideas. Imagination, Mill said, is not a distinctive characteristic of poets; their trains of ideas are distinguished solely by involving different ideas than those appearing in the imagination of merchants, lawyers, statesmen, and metaphysicians. In the latter group, imagination is directed toward some end which gives the train of idea its value; for the poet the train of ideas is its own end. ibid., 1:240-43.

115. Stephen, English Utilitarians 1:149-52. Thomas Brown also appealed to intuition as a vouchsafed belief, but what he meant by this appeal was simply that the origin of belief could not be found in perception or reasoning. An important element of thought therefore must remain inexplicable. This view appears to have had a significant impact upon John Stuart Mill. ibid., 2:275-76.

116. Mill, Analysis, 2:chap. 11. Mill discussed the several manifestations of belief under the headings: I. Belief in events or real existents; II. Belief in testimony; and III. Belief in the truth of propositions. ibid., 2:344. He concluded that

"in instances without number the name belief is applied to a mere case of indissoluble association, and no instance can be adduced in which any thing besides an indissoluble association can be shown in belief." (ibid., 2:367.)

Both J. S. Mill and Bain pointed out that our belief in the uniformity of nature—our strong tendency to anticipate the future from the past—is evident prior to all association. ibid., 1:367-68, 393-423.

117. ibid., 2:184-85. Mill pointed out that sensations are either indifferent, pleasurable or painful and that the greatest number seem to fall into the first class.

118. ibid., p. 188.

119. ibid., 2:191. The terms desire and aversion really refer to the state of consciousness connected with an idea of pleasure or an idea of pain. Mill noted that these terms are frequently applied to the causes of pains and pleasure as when we say we have an aversion to a particular food or a desire for drink. ibid., 2:192. Mill claimed that this ambiguity arises because of the close association between the idea of a sensation and its customary cause. Association was also appealed to in order to account for the fact that desire and aversion contain an implicit reference to the future; that is, they involve an expectation of pleasure or pain. ibid., 2:193. John Stuart Mill's objections to this account will be discussed in the next chapter. ibid., 2:257.
120. Ibid., 2:188. Mill calls sensations interesting "when they are pleasurable or painful or when they are causes of pleasurable or painful sensations." Interest appears to be solely a function of the intensity of the pleasure or pain associated with an idea or sensation. As we will see, attention is nothing more than the having of such interesting sensations. Ibid., 2:363.

121. Ibid., 2:206-7. Wealth, Power and Dignity derive their value because they serve as the means of procuring the services of our fellow creatures; and these services are productive of pleasure. Ibid., 2:207-13.

122. Ibid., 2:258. Mill pointed out that since pleasure is worth having (otherwise it would not be pleasure), a motive naturally leads to action. However, not every motive results in action since other stronger motives may prevail. Education ought to provide individuals with the means of checking motives that produce greater pain than pleasure: "The business of a good education is to make associations and the values correspond." Ibid., 2:259.

123. Mill defined disposition as the facility of being acted upon by motives of a particular kind. Ibid., 2:259.

124. Ibid., 2:329.

125. Ibid., 2:332, 337.

126. Ibid., 2:337. The cumbersome character of this account is even more obvious to us today than to readers in Mill's time as we are more familiar with the laws of reflex action. Even Alexander Bain, who was familiar with this law, felt that the eyelink response resulted from an indissoluble association. Ibid., 2:338. Darwin also confirmed this finding. See Bower, Hartley and Mill, p. 165. These accounts highlight the difficulty that exists in separating out unlearned aspects of behavior (reflexes) from stimuli that might become associated with such sequences in experience. In the light of such difficulties Pavlov's contribution to psychology acquires a greater significant.

127. Ibid., 2:350. The process of volition reverses the process which leads to the formation of a motive. In the latter process an idea of pleasure is associated with a train of causes leading ultimately to some action of our own. In volition, the idea of action of our own leads to the idea of a pleasure associated with it and ultimately to action itself. Mill distinguished between the idea of action in each case. In the motive the idea is merely of the outward appearance of the action. In volition the idea is "the copy of these internal sensations which originally called the muscles unto action" Ibid., 2:353.

128. Mill stated: "the action of the muscle takes places in consequence of the idea, and that our power of willing consists in the power of calling into existence the appropriate idea" Ibid., 2:348. Mill maintained that every act of volition must issue in action. Such a definition conveniently eliminated from consideration such
characteristic (and problematic) phenomena of volition as the intention to perform some action in the future. On Mill's view, my writing this dissertation only involved volition during those periods when I was actually writing.

129. Ibid., 2:344-45.

130. Mill claimed that the requisite associations became so tightly bound through repetition that such processes could be carried on with ease and without necessarily paying attention to them. Ibid., 2:345. Without employing Hartley's term, he was describing phenomenon of secondarily automatic actions.

131. Ibid., 2:358.

132. Ibid., 2:358-60.

133. Ibid., 2:360-62. According to Mill, the process of recollection is propelled by a state of unsatisfied desire--the idea of the End--which exists until the desired idea is recalled. It is this state of unsatisfied desire which is the feeling of effort involved in recollection. John Stuart pointed out that James Mill provides no explanation of how a pleasurable idea--the idea of the End--is transformed into the painful state of unsatisfied desire that propels recollection. Ibid., 2:376-77 (n. 66). The postulation of additional ideas to guide thought, is reminiscent of the positing of epicycles to correct planetary orbits.

134. Ibid., 2:362.

135. Ibid., 2:363.

136. Ibid., 2:364.

137. Ibid., 2:369.

138. Ibid., 2:348.

139. Mill stated that a perfected theory of the human mind would enable us to determine (1) Rules for guiding the human mind in its search after truth (Logic); (2) Rules for regulating the actions of human beings in accordance with the greatest happiness principle (Ethics) and (3) Rules for training the individual to the highest state of intellectual and volitional efficiency so as to produce happiness for himself and his species (Education) Ibid., 2:403.

140. Halévy, Philosophic Radicalism, p. 458. It is this difference in preference for particular instruments of social control that appears to underly their other differences. Mill was more individualistic in his social doctrines and much more interested in the origins, rather than the consequences of forms of behavior. Where Bentham merely classified, Mill analyzed.
141. Mill's interest in the origins of thought was, in part, motivated by his opposition to intuitionist modes of thought. Consequently he felt that the establishment of a plausible alternative view of the mind was urgently required both to defeat intuitionism and to provide a secure foundation for the utilitarian philosophy.

142. The polemical and propagandistic character of both Bentham and Mill's writing has already been pointed out. As we will see in the next chapter such a polemical approach was even more characteristic of John Stuart Mill's work.
CHAPTER 2

JOHN STUART MILL

Intellectual Training

Although a brief account of John Stuart Mill's remarkable early education was given in the last chapter, his intellectual biography has not been completed. Upon his return from France, he resumed his studies and in the course of the next few years was exposed to several works that were critical in shaping the direction of his later thought. These included a history of the French Revolution, Dumont's Traités de Législation and Hartley's Observations on Man. The first work stimulated his revolutionary and democratic zeal; Hartley's work provided him with a model of the analysis of the mind. But it was Dumont's account of Bentham's doctrines that transformed his life. As he wrote:

My previous education had been, in a certain sense, already a course of Benthamism. The Benthamic standard of "the greatest happiness" was that which I had always been taught to apply . . . . Yet in the first pages of Bentham it burst upon me with all the force of novelty . . . . The feeling rushed upon me, that all previous moralists were superseded, and that here indeed was the commencement of a new era in thought. /1/

Particular aspects of the work impressed him greatly. Bentham's analysis of "natural law" and "moral sense" as dogmatism and sentiment in the guise of reason, helped to shape John Stuart Mill's lifelong opposition to intuitionism. Bentham's systematic application of scientific method to morality and legislation had an inspirational
effect.\(^3\) On the impact of the work Mill wrote,

When I had laid down the last volume of the *Traité*, I had become a different being. The "principle of utility" ... fell exactly into its place as the keystone which held together the detached and fragmentary component parts of my knowledge and beliefs. It gave unity to my conception of things. I now had opinions; a creed, a doctrine, a philosophy; in one among the best senses of the word, a religion; the inculcation and diffusion of which could be made the principal outward purpose of a life.\(^4\)

This conversion led Mill to form the Utilitarian Society during the winter of 1822-23. This small group met biweekly until 1826 for discussion of the principle of utility as a standard in ethics and politics.\(^5\) Through this discussion group Mill acquired a reputation as the leader of the youthful utilitarians. During this period Mill secured a position as a clerk in the East India Company, a position which left him time and energy to pursue his intellectual interests.\(^6\)

In 1825, Bentham engaged Mill's efforts in editing *The Rationale of Judicial Evidence*. This book, designed to place legislative practice on a rational foundation, contained ample psychological material. Among topics discussed were intellectual and moral influences on the accuracy of testimony. Practical advice was provided to aid judges in taking such influences into consideration.\(^7\) John Stuart claimed that the task helped to improve his writing style; it probably also served to further stimulate his interest in psychological matters.

During the same period Mill formed a new study group which met biweekly to discuss chosen topics. The group included some of the members of the older Utilitarian Society as well as several new members, including George Grote.\(^8\) Over the next four years they covered the
topics of political economy, logic and analytic psychology through systematic reading and thorough discussion of texts./9/ After completing their discussion of Hartley the meetings ended, but the group reassembled temporarily for the purpose of reading James Mill's Analysis.

Public speaking and writing for the Westminster Review also played a large role in John Stuart's life at this time. A series of debates with some Owenites in 1825, led to the formation of a Society which served as a forum for disputes between Tories and the Philosopich Radicals./10/ His association with the early Westminster Review ended in 1828 with an article correcting Sir Walter Scott's misrepresentations of the early French Revolutionists./11/

**Mill's Spiritual Crisis**

The years between 1825 and 1830 were very busy and productive ones for Mill. Yet these are also years that Mill described as a period of spiritual crisis. According to Mill, this spiritual crisis manifested itself in "a dullness of nerves"; a complete incapacity to derive pleasure from life. Mill was so completely dejected that he could not even derive pleasure by imagining the successful implementation of his plans for social reform./12/

Mill's "spiritual crisis" has been interpreted as a demonstration of the poverty of the utilitarian educational doctrines. However, the "crisis" appears neither severe nor extensive enough to warrant such an conclusion./13/ Furthermore, the habits of mind created during his...
education came to Mill's aid in resolving the crisis. Nevertheless, Mill's account of his crises does provide us with insight into some shortcomings of the utilitarian doctrine.

Although Mill was in great distress, he was still capable of analyzing his situation. He reached the conclusion that his problem stemmed from the overly conscientious cultivation of analytic habits, or in other words, from the overdevelopment of his critical faculties:

For I now saw . . . that the habit of analysis has a tendency to wear away the feelings . . . when no other mental habit is cultivated and the analysing spirit remains without its natural complements and correctives. /14/

Gradually, he reported, he recovered his capacity of feeling and began to take some pleasure in life once again. The crisis had taught him two lessons, the first being that the self-conscious pursuit of one's happiness was not likely to produce happiness. In rationally pursuing happiness, Mill wrote, we destroy its character. To achieve happiness it is necessary to rationally pursue some other objects. /15/

The second lesson was that the associationists' emphasis upon training habits of action and correct thinking needed to be supplemented by a cultivation, or training, of the feelings. It is necessary, Mill concluded, to maintain a balance among the faculties. /16/ And as Mill had been so highly developed in the intellectual faculty, his efforts were now addressed to the other:

The cultivation of the feelings became one of the cardinal points in my ethical and philosophical creed. And my thoughts and inclinations turned in an increasing degree towards whatever seemed capable of being instrumental to that object. /17/
Mill commenced this cultivation of the feelings by reading poetry, first that of Wordsworth and later works by Coleridge and Goethe. In these works he was introduced to German philosophy which he summarily described as the "continental reaction to eighteenth century philosophy."/18/ The main lesson he drew from these works was not an epistemological one, but a social and political one. It is necessary, he wrote, to incorporate an historical viewpoint into the utilitarian doctrine./19/

This insight was reinforced by an exposure to the political works of the St. Simonians in France. Mill was particularly receptive to their view of the natural order of human progress and their division of history into organic and critical periods./20/ But it was the work of a relatively unknown writer that impressed him most. That work outlined a theory of the natural succession of history through three stages: the theological, the metaphysical and the positive stage. Auguste Comte's version of positivism served to both interest and irritate Mill for most of his life./21/

During this period of crisis and recovery the ground was laid for a departure from the strict utilitarianism, empiricism and associationism of his upbringing. To what extent did Mill's view of the functioning of the human mind change because of this exposure to a philosophy based upon diametrically opposed assumptions? Mill claimed that his view became more historical, that he became interested in the laws of development of the human mind. But did this view, that "the human mind has a certain order of possible progress," extend beyond social and
political realms and shape his view of the development of the individual human mind? Did it have any revolutionary impact upon Mill's psychology? My conclusion is that it had only a limited impact. Mill remained a staunch empiricist and an opponent of the intuitionist school throughout his life. Mill's empiricism, however, was considerably more sophisticated than his predecessors, because he understood the force of the opposition's arguments and some of the weaknesses of the Utilitarian-Associationist position. This made Mill more tolerant but also more polemical. Throughout his life, Mill continued to read opposition points of view carefully, but these readings typically spurred him on to redouble his efforts in support of the utilitarian social program based upon the associationist theory of mind. On the other hand, it is possible to discern some impact of these opposing points of view in Mill's writings on character. I will return to this topic below.

**Mill on Bentham and Coleridge**

The value Mill placed on tolerance and free discussion of opposing viewpoints is seen most clearly in his articles on Bentham and Coleridge which appeared in the *Westminster Review* ten years after his spiritual crisis. The purpose of these articles, Mill claimed, was two-fold. First they were intended to represent his altered frame of mind vis-a-vis utilitarianism. More importantly, they were designed to educate the readers of the *Westminster Review*. Thus the article on Bentham was more critical, and the article on Coleridge more laudatory, than they otherwise might have been.
Mill clearly felt that the readers of the *Westminster Review* still needed Bentham's shortcomings pointed out to them. The primary shortcoming of Bentham's view of human nature, according to Mill, stemmed from his failure to consider motives directed toward spiritual or aesthetic ends. "Man is never recognized by him as a being capable of pursuing spiritual perfection as an end," complained Mill./27/ Bentham had elevated the moral character of actions at the expense of their aesthetic or sympathetic character, he charged. Consequently, he regarded Bentham's view of the springs of action as severely limited. Mill pointed out that several important human motives were omitted from Bentham's scheme including conscience, self-respect, sense of honor, love of beauty, love of order, love of power (or of making our actions effectual) and love of action./28/

Bentham, like James Mill, regarded character formation as consisting in the formation of associations between pleasure and beneficial actions and pain and detrimental actions. John Stuart Mill asserted in this article that such training must always falter without a prior training of the affections and will. Furthermore, the responsibility for such training must fall upon the individual himself./29/ Mill asserted that Bentham overlooked a whole class of mental feelings that arise from observation of our own states of consciousness. And it is these feelings that are instrumental in the process of forming one's own character./30/
Bentham's philosophy, he concluded, can teach us the means of organizing and regulating the business of social arrangements—that is, protecting society's material interests—but it can do nothing for the spiritual interests of society. Its value for the individual is even more limited, as it merely prescribes some of the more obvious dictates for the prudent regulation of outward conduct./31/

Two years after the publication of the article on Bentham, Mill's article on Coleridge appeared. In keeping with his didactic goal, Mill first provided a very clear outline of the assumptions of two conflicting schools of thought—the Lockean (or empiricist) and the Germano-Coleridgian (or intuitionist)./32/ Without claiming to have settled any controversies, Mill simply stated his own position, that the truth "lies with the School of Locke and Bentham."/33/ Mill reasserted the empiricist principle that all our knowledge is drawn from experience and that all the ideas, feelings and powers in the human mind are likewise drawn from that source./34/

I interpret Mill's account as indicating that he did not regard the intuitionist epistemology as providing any solution to the problems identified in Bentham's position. What he praised in the Germano-Coleridgian school pertains to their social and political views and not to their view of the mind. It was their historical sense that Mill found commendable, since it served to illuminate the function of important social and political institutions./35/ Nothing favorable whatsoever was said about the account of mind Coleridge had provided as the groundwork of his philosophy. Mill, no doubt, felt that he had
performed his duty in sketching out the lines of battle for the readers of the Westminster Review. He wrote:

For, among the truths long recognized by continental philosophers, but which very few Englishmen have yet arrived at, one is, the importance, in the present imperfect state of mental and social science, of antagonistic modes of thought: which, it will one day be felt, are as necessary to one another in speculation, as mutually checking powers are in a political constitution. A clear insight, indeed, into this necessity is the only rational or enduring basis of philosophical tolerance; the only condition under which liberality in matters of opinion can be anything better than a polite synonym for indifference between one opinion and another./36/

That Mill was in no way "indifferent between one opinion and another" is clearly seen in his System of Logic, a work written intermittently during the period between 1830 and 1840.

Mill's System of Logic

It was during his study group's examination of logic that Mill conceived the project of a book on the subject./37/ Work on the book commenced in 1830, with discussions on the distinctions among terms and on the import of propositions. He worked steadily on this project for the next few years and completed the first three books by 1832. Then, running aground on the topic of induction, he set the work aside for five years./38/

Mill formulated his own view of the methodology of the social sciences in opposition to the view held by his father. Macaulay's attack on the elder Mill's Essay on Government had led the younger Mill to reexamine his own views on the proper method for the social sciences. James Mill had argued that the science of government was a deductive science like geometry. Given a knowledge of human nature we could
derive our politics. Macaulay denied this was possible because human
nature lacks constancy. In addition, politics shape human nature, and
therefore the science of politics must precede a science of human
nature. John Stuart attempted to steer between these positions by
arguing that although politics can be deduced from psychology, the
process of deduction is considerably more complex than that found in
geometry. Astronomy and other natural sciences are better models for
the moral and social sciences than geometry.39/

Mill resumed work on the Logic in 1837. Four years later the work
was completed and in the hands of the publisher. Mill never expected
the work to be much of a success, since its potential audience was
students, most of whom he regarded as addicted "to the opposite school
of metaphysics, the ontological and 'innate principles' school."40/ Contrary to Mill's expectations, the work was a huge
success. It went through eight editions in Mill's lifetime and was one
of the most widely read and influential works of the nineteenth
century.41/ It played a crucial role in shaping the mental development
of that group of Cambridge undergraduates who later formed Britain's
"intellectual aristocracy."42/ Mill, however, never interpreted its
success as a sign of the ascendancy of the empiricist school:

I have never indulged the illusion that the book had made any
considerable impression on philosophical opinion. The German,
or a priori view of human knowledge, and of the knowing
faculties, is likely for some time longer (though it may be
hoped in a diminishing degree) to predominate among those who
occupy themselves with such inquiries, both here and on the
Continent. But the System of Logic supplies what was much
wanted, a text-book of the opposite doctrine—that which derives
all knowledge from experience and all moral and intellectual
qualities principally from the direction given to the
associations.43/
It is Book Six of the *Logic*, "On the Logic of the Moral Sciences," that is of most interest to us. In this part of the *Logic* Mill developed the proposition that progress in the moral sciences depends upon the employment of the methods of the physical sciences. But before he could develop his concrete proposals for the moral sciences, he had to deal with an important objection to the program—the claim that human actions are not subject to invariable laws. At issue was the question of whether a science of human nature is possible. Many of those who supported the doctrine of the freedom of the will contended that human thought and action presented an exception to universal causation. For that reason they denied that a science of human nature is possible. Mill approached the question somewhat differently, asking whether the phenomena in question occur with enough regularity to be amenable to scientific investigation. He maintained that to say particular phenomena obey laws means only that such phenomena follow certain unconditional sequences. From this perspective he re-examined the doctrine of freedom of the will.

Mill stated that most defenders of the doctrine of free will operated with a faulty conception of causality, one involving the view that the cause somehow "compels" or "necessitates" its effect. If they recognized the true nature of the causal relation, he stated, they would see that to say that the will is "caused," means only that actions follow motives in a certain and unconditional sequence. Therefore, the will is not free in any meaningful sense, it is always conditioned by antecedent events. It is the task of psychology, as the experimental science of mental phenomena, to explore such sequences and to provide
the foundation for all of the moral sciences./47/

While psychology is still an imperfect science, wrote Mill, it has been able to ascertain that every mental impression leads to an idea and that the excitation of these ideas obey certain laws: the laws of association./48/ In order to utilize these psychological principles to make statements about actual conduct, a secondary science the science of the formation of human character (both individual and national)--will be needed./49/ Mill called this science ethology and conceived it as a deductive science, maintaining that the laws of the formation of character are simply corollaries of the general laws of mind discovered by psychology./50/

What was Mill's aim in proposing this new science? Clearly it was designed to serve as a bridge between the foundational science (psychology) and the most general social sciences (politics and sociology). Ethology was to provide us with a way of particularizing the general laws of psychology; of examining the outcome of their operation in particular physical and moral circumstances./51/ Ethology, I maintain, represented Mill's attempt to incorporate what he had learned from the Germano-Coleridgian school into his view of the moral sciences. While there are universal laws of the human mind such laws will manifest themselves differently in various circumstances./52/ Although Mill never surrendered his empiricism, his reading of the Germano-Coleridgians provided a new twist to his experientialism: leading him to give a broader characterization of the circumstances that have an impact upon thought and action. Mill's
program for ethology represented an attempt to incorporate a historical and sociological perspective into the moral sciences. /53/

It was Mill's view that the identification of these circumstances was necessary for the understanding of a society at any given point in time. /54/ Furthermore, he maintained that once we know which circumstances produce particular qualities in human beings, we have a secure basis for establishing a rational system of education. /55/ Finally, ethology provided the potential for overcoming the limits of utilitarianism in a scientific manner. /56/ Still, the science remained only a program; Mill never took any steps toward the development of Ethology. /57/

Mill described the social sciences—politics and sociology—as deductive sciences; their laws were thought to be deducible from the fundamental sciences of psychology and ethology. /58/ However, as these latter sciences are, as yet, incomplete, the social sciences must rely on another method of investigation—the inverse deductive or historical method. That is, a tentative form of knowledge about society can be gained by carefully examining historical developments. This method yields laws that are merely empirical generalizations. Before they can be regarded as 'scientific laws' they must be verified by deduction from the psychological and ethological laws upon which they rest. /59/

In Mill's view the moral sciences play an especially important role in life as they serve to specify the means by which we can achieve certain ends. Ethics, for example, must be grounded in these sciences if it is to provide practical advice concerning the guidance of
life./60/ However the moral sciences are limited in some respects; they
cannot, for example, determine which given ends are most
desirable./61/ Such a task is the responsibility of Ethics itself. In
offering his own opinion concerning the proper principle to guide the
practice of life Mill, once again, displayed his indebtedness to Bentham
and his father. He wrote that

the general principle to which all rules of practice ought to
conform, and the test by which they should be tried, is that of
conduciveness to the happiness of mankind./62/

Mill admitted, in apparent disagreement with his forebears, that
there are many virtuous acts and modes of action in which happiness is
sacrificed and more pain is produced for the individual than pleasure.
Such acts, however, rest upon the cultivation of feelings that will
ultimately improve the quality of human life. The individual should
cultivate "an ideal nobleness of will and conduct," simply because

the existence of this ideal nobleness of character, or of a near
approach to it, in any abundance, would go further than all
things else toward making human life happy, both in the
comparatively humble sense of pleasure and freedom from pain,
and in the higher meaning of rendering life, not what it now is
almost universally, puerile and insignificant, but such as human
beings with highly developed faculties can care to have./63/

Here Mill was asserting that the promotion of happiness is the ultimate
aim of moral conduct, but he added that happiness must be conceived more
broadly than the individualistic hedonism of Bentham and James Mill
permitted.

Shortly before publishing the first edition of the Logic, Mill
became acquainted with Alexander Bain who became the kind of literary
aide that James Mill, for a period, had been to Bentham./64/ Bain aided
Mill in several revisions of the Logic, and Mill in turn supported Bain's efforts in psychology.

Mill never followed up on his proposed new science, Ethology. Instead, following the publication of the Logic, he turned to the science of Political Economy, a science that could be deduced without the aid of historical considerations. /65/ Principles of Political Economy (1848) and established Mill as Britain's most prominent liberal philosopher. Subsequent works, On Liberty (1859) and Utilitarianism (1861) presented his theory of social and political conduct, but it is beyond the scope of this work to examine them. /66/

In the early 1860's Mill was provided once more with an opportunity to take up the sword in defense of an empiricist and associationist account of mind. The posthumous publication of Hamilton's Lectures on Metaphysics and Logic in 1859 and 1860 provided Mill with a sparring partner, and he took up this challenge in his Examination of Sir William Hamilton's Philosophy. /67/

Mill on Hamilton

Mill's concern in this work, as in many others was with the refutation of a priori metaphysics, particularly as they bear on doctrines of logic. Hamilton had specifically criticized associationism and Mill rushed to its defense, not just for the sake of the issues at hand but also because, "a true psychology is the indispensable scientific basis of Morals, of Politics, of the science and art of Education." /68/
The fundamental issues revolve around the nature of consciousness and the ideas, feelings and powers within it./69/ Hamilton asserted that consciousness has a twofold character which it impresses upon sensations in every act of perception. Each act of perception involves an ego, or mind, and a non-ego, or matter, and these are primely given in consciousness, not derived from experience. In Hamilton's view, consciousness is structured to enable us to sift out objective from merely subjective sense materials; we can directly intuit the primary qualities of matter presented to our senses. We are thus directly aware of the reality of a portion of the external world./70/

Against this view, Mill argued that our conception of matter is not an original datum of consciousness. Our belief in the existence of the external world is not directly given; it is based upon an "expectant faith" and the "tendency of invariable associations to generate belief."/71/ Our belief in the external world is the belief that under certain conditions, certain sensations will again recur. Matter is but "a permanent possibility of sensation."/72/ It is not an original datum of consciousness; it is an idea derived from experience.

What of ego, the other ultimate datum? Can it also be derived from experience? Mill provided a definition of mind parallel to that presented for matter. Mind, he said, is "a permanent possibility of thoughts, emotions and volitions as well as sensations."/73/ The mind is but the "thread of consciousness." But is this all that the mind is? Mill said, no. In addition to the series of feelings, the mind is aware of itself as past and future and this awareness is an integral, yet
inexplicable, aspect of consciousness. Mill believed that the notion of self was not resolvable into sensations and their combination in the same manner that matter was./74/

We see here that John Stuart Mill went beyond the assumptions of his father. There is something in the mind which is over and above the record of received sensations. While he admitted that our consciousness of self is inexplicable on associationist principles, he remained critical of Hamilton's account of the ego. The presence of one inexplicable constituent of the mind in no way necessitates the postulation of a variety of such mysterious powers./75/

Mill, in addition, disagreed with Hamilton's account of the origin of the consciousness of self. Hamilton had maintained that it was an original fact of mind; that the self is apprehended immediately in consciousness. Mill denied this, claiming that the consciousness of self develops only after considerable experience of the recurrence./76/ In his denial of the immediate apprehension of matter and mind, Mill was reasserting the empiricist principle that the sole source of our knowledge is experience, that we do not immediately intuit the nature of anything.

While Mill departed from the strict empiricism of his father on the issue of the self, he adhered to the associationist account of will, in opposition to that formulated by Hamilton. Hamilton had argued that there were no rational grounds for deciding between the doctrines of free will and necessity./77/ Nevertheless, he said, the doctrine of free will receives support from two sources—the direct testimony of
consciousness and the fact that freedom of will is implied by our consciousness of moral responsibility. No equivalent evidence exists, he contended, for the doctrine of necessity./78/

In reply, Mill reexamined several of the examples employed by Hamilton. He concluded that whenever we closely examine such volitional acts, we find a moral antecedent. Experience teaches us that the will is determined in the only sense of determination possible: each act of will is preceded by a moral antecedent./79/

Furthermore, Mill claimed, our direct consciousness of freedom is nothing more than the awareness that if our motives had been different, we would have acted differently. Such a consciousness can only arise because our will is determined in the manner described./80/ The same holds true of our consciousness of moral responsibility. Mill insisted that it is the doctrine of free will—the view that actions take place independent of motives—not the doctrine of determinism that is incompatible with morality and the operation of a just society./81/

This account has touched on just a few of the relevant issues discussed in Mill's Examination. Mill also reviewed Hamilton's doctrine of unconscious mental modifications and the nature of belief. On the latter topic, Mill once again departed from the view of his father. We will return to this topic when examining Mill's notes on his father's psychology.
Mill's combativeness was directed toward another quarter shortly after the publication of this work. In the early 1840's Mill had begun a correspondence with Auguste Comte. The two quickly recognized their basic affinity on such issues as social progress.\textsuperscript{82} However as the correspondence developed, their differences became apparent. Mill disagreed with Comte's view that psychology must be reduced to physiology, a more fundamental science, and was shocked by Comte's support of phrenology. Unlike Comte, Mill maintained that society is nothing over and above the actions of the individuals constituting it. Finally, they disagreed on the question of the equality of the sexes and this disagreement brought their correspondence to an end.\textsuperscript{83}

In the meantime, however, Mill had been instrumental in introducing Comte to Britain. By the late 1850's in fact, Comte had become somewhat of a cult figure.\textsuperscript{84} This irked Mill, since on top of their earlier disagreements, he regarded some of Comte's later political doctrines as despotic. Because of Comte's popularity and because of his own earlier support of Comte's ideas, he felt it incumbent upon him to provide a critical evaluation of the good and the bad in Comte's philosophy. This he did in two essays published in the Westminster Review and later reprinted in the volume, Auguste Comte and Positivism (1865).\textsuperscript{85}

Mill did not simply busy himself with opposing points of view. He also attempted to give the Utilitarian-Associationist viewpoint a wider hearing. To this end he conceived the project of reissuing his father's Analysis. The work, he felt, had not received the recognition it deserved because, at the time of issue, "the current of metaphysical
speculation ran in quite an opposite direction to the psychology of Experience and Association." In the "more favourable atmosphere" of the late 1860's, he maintained, the book stood a greater chance, particularly if enriched and corrected "by the results of more recent labours in the same school of thought."/86/

The Analysis of the Phenomena of the Human Mind, edited by John Stuart Mill and with notes by Alexander Bain, Andrew Findlater and George Grote, was published in 1869./87/ On psychological matters, Mill had been deferring to Bain for some time. Nevertheless, there is still enough of his own material in the work to enable us to discern the extent of his departure from the doctrines of his father./88/

John Stuart Mill's Psychology

Associationism

Although John Stuart Mill adopted a thoroughgoing associationism, he departed from his father's position in several respects. We have already seen that he denied that consciousness was simply the "having of feelings." John Stuart maintained that consciousness was something more, that it also involved the referring of feelings to our self. In claiming that our consciousness of self and our ability to observe states of mind were irreducible facts, Mill was maintaining a position more similar to Locke than to his father./89/

James Mill, the reader will recall, maintained that association by resemblance was not a fundamental law. His adoption of such a position was probably motivated by a wish to avoid positing a form of association
which took place solely on the basis of relations of ideas, for then he must also posit a power of the mind to detect these relations. Nevertheless, his account was simply inadequate as an explanation of the formation of most associations that appear to be based upon similarity. Quite frequently, for example a stranger's face or voice will suffice to lead us to recollect an old friend. That resemblance is responsible for this train of thought is clear, but the conditions that James Mill claimed were necessary for the formation of such an association are unlikely to have been met. /90/ John Stuart Mill also pointed out that association by resemblance is a necessary condition for the revival of associations formed by contiguity. When present sensations (for instance the sight and feel of red velvet) revive past sensations (such as the sight and feel of red roses) it can not be because the present red velvet was frequently paired with red roses. The mind does appear capable of seizing upon fundamental resemblances and it is this capacity that enables us to revive ideas of past sensations, among other things. The law of association by resemblance, wrote John Stuart Mill, is as fundamental as the law of contiguity. /91/

John Stuart Mill gave wholehearted support to his father's doctrine of indissoluble, or inseparable, association. This is not at all surprising given his perspective on logic, since it was this doctrine which provided the foundation for his a posteriori account of "necessary truths." /92/ However, Mill did take issue with his father's employment of the doctrine as an account of the origin of belief.
James Mill had stated that belief involves nothing more than an exceptionally strong association between facts. On this account the only distinction possible between belief and imagination (truth and illusion) lies in the relative strengths of the associational bonds in each. John Stuart Mill objected to this analysis. Indissoluble associations, he said, are neither necessary nor sufficient conditions for belief; nor are they indissoluble. We can believe in that which we have never had the opportunity to experience as constantly conjoined. In fact, conjunctions in our sense experience often contradict our beliefs; the sun appears to be moving around the earth but we believe that the earth is actually moving. Furthermore, the fact that we can alter our beliefs means that such associations are not indissoluble. In Mill's view, his father's account simply will not work: belief involves something beyond indissoluble association.

Belief and imagination, John Stuart said, are distinguished by the very same difference that enables us to distinguish sensations and ideas. Although James Mill had spoken of a primordial distinction between sensations and ideas, he had failed to draw out the implications of such a distinction for the analysis of belief. John Stuart stated that the difference between belief and imagination "is the difference between regarding something as a reality in nature and regarding it as a mere thought of our own," and that such a difference is primordial. Nothing more can be said about the source or character of this difference; belief is ultimately inexplicable.
The associationists depicted mind as involving orderly sequences of ideas, with no gaps occurring in consciousness. Our phenomenal experience reveals more chaotic phenomena. Ideas leap into the mind; the connections among successive ideas are unclear or not apparent at all. Such observations must be accounted for and it was for such cases that James Mill posited the law of obliuscence. In certain cases of association, said James Mill, the consequent is far more interesting than the antecedent. The consequent rivets our attention and the antecedent appears to drop out; it is due to this quirk of attention that we overlook many important mental antecedents and misinterpret the true operation of our mind and body. For example, we may not always connect nightmares with the indigestible food we ate the night before, but that food is, nevertheless, a crucial antecedent. James Mill accounted for the link between indigestion and nightmares by pointing out that anxiety disorders the digestion as well as leading to nightmares. If one is anxious frequently enough, a bond will be formed between the sensations of indigestion and the ideas that prevail in a state of anxiety. Thus nightmares result from sensations of indigestion, although the role of such antecedent sensations may be overlooked.

While John Stuart Mill claimed that the law of obliuscence was one of the most important laws of the mind, he took exception to some of the examples presented by his father, including the one presented above. The production of such states of mind, he claimed, does not depend solely upon association. Many people have nightmares as a result of indigestion without the requisite prolonged experience of
anxiety./99/ Disorders in organic functioning may modify the sequence of thoughts directly, John Stuart argued, simply by their own physical action on the brain, and not just through the associations they excite./100/ Here Mill was asserting, contrary to his father's view, that physiological conditions can play an important role in our mental operations, a role distinct from that played by association./101/ This contention, no doubt, was based upon his acquaintance with Alexander Bain's work.

James Mill employed the doctrine of oblivescence in his account of memory, and this account was carefully scrutinized by John Stuart Mill. The elder Mill had claimed that when there have been frequent repetitions of a series of sensations, the train of ideas will rush through the mind with such rapidity that "some of the links are apt to disappear from consciousness as completely as if they never formed part of the series."/102/ In commenting on this account, John Stuart Mill inquired about the fate of these ideas. Several possibilities exist. Such ideas could truly be lost--pressed out by the rush of subsequent ideas--but then they would be unable to serve as crucial links in the series of ideas./103/ Alternatively these ideas could continue to play the role of links, while passing through the mind unconsciously./104/ This view, however, contradicts James Mill's position that consciousness and having a feeling are equivalent. James Mill would have preferred the final alternative; that is, that the ideas pass through the mind consciously, but are instantly forgotten./105/
John Stuart Mill examined these alternatives, and showed himself unhampered by the orthodoxy of his father. Because he was willing to acknowledge physiological factors as conditioning mental processes, John Stuart could admit the possibility of unconscious processes in the mind. In such cases, he argued, the chain of causation might be continued on the physical level; the rapidity of these physical changes would account for the lack of accompanying feeling. This alternative, as well as the view that ideas pass rapidly through the mind and then are forgotten, both have the merit of preserving the sequential character of trains of thought. However, each of these alternatives assumes that a very large number of ideas can rush through the mind in a very short time. The implausibility of this assumption led John Stuart to attempt to make sense of the view that some of these ideas really do drop out.

The loss of some ideas, said Mill, would not be disastrous if, at the same time, new links are being forged. If ideas persist briefly in consciousness, then the ideas that are associated successively will also be associated synchronously. When the successions proceed more rapidly, the overlap between ideas may become so extensive that associations can be forged between ideas that were not previously contiguous. In this manner, ideas can drop out without necessarily leaving unbridgeable gaps in consciousness.

In this discussion, John Stuart Mill displayed an awareness of how forced some of his father's accounts of mental phenomena were. In addition, he showed a greater willingness than his father to entertain a
variety of explanations for such phenomena, and he proposed changes in
his father's account of mind. These changes were dictated by a desire
to strengthen the associationist account of mind, not to undercut his
father's philosophy. As we shall see, his modifications cut more deeply
than he had anticipated.

Volition

John Stuart Mill fundamentally agreed with his father's view
concerning the mechanism of volition, but he incorporated several
important qualifications into this account. To recapitulate, in James
Mill's account will is simply the hypostatization of the action of
desire. Desire involves the idea of pleasure and is the invariable
antecedent of the performance of a voluntary act; the will is fully
determined by such desires. It was with regard to the analysis of
desire that John Stuart Mill made his first departure from the views of
his father. In his father's account, wrote John Stuart Mill, desire is
too exclusively an intellectual phenomena./109/ According to James
Mill, a desire is simply an idea of a pleasure which dwells in the mind
and calls up the idea of an action which is the cause of that pleasure.
It is the idea of action which instigates the action in that
account./110/ John Stuart Mill said that desires, in and of themselves,
must be regarded as having motive power. Having desires and aversions
involves something more than having mere ideas of pleasures and pain;
desires and aversions stir us to action. Desire is the initiatory stage
of volition./111/
Mill's revision had a number of implications. Bentham and the elder Mill had argued that the strength of a motive (and thus its causal effectiveness) was determined by the anticipation of pleasure yielded by the act. John Stuart argued that the present pleasure or pain, the affective tone associated with the idea, determined the strength of motives. And as anything can be made an effective motive through judicious application of the laws of association, the problem of disinterested action disappears. People would behave altruistically to the extent that such actions acquire a positive affective tone. Here was a noble task for education, which we will be discussing further on.

John Stuart Mill also charged that his father had underestimated the power of attention, or voluntary control of our thought processes. Nevertheless, his revised account of attention was still an associationistic one, one in which the act of attention is explicitly connected with motor phenomena. Mill pointed out that his father had considered only part of the effects of an act of attention; specifically those effects stemming from the tendency of an interesting idea to prevent less interesting ideas from rising up in consciousness. But John Stuart pointed out that this attention also increases the intensity of the idea thereby enhancing its ability to call up other ideas by association. The idea is not simply held in consciousness by an act of attention, its power is enhanced.

The enhancing power of attention has consequences for both the intellectual and the moral sphere. Because the attended idea becomes intensified, it will be more readily associated with contiguously

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occuring sensations or ideas. In the future, therefore, the idea will have a greater tendency to suggest other ideas. If the intensified idea is a desire or an aversion, this idea will gain greater power to incite or prevent an action. In John Stuart Mill's account, attention has a good deal of power over our trains of thought and our actions. But we do not directly control this power, its operation is guided by the laws of association.

John Stuart Mill noted that the account of the emotions given by his father focused too exclusively on the intellectual portion of those feelings, neglecting the "animal element" of emotions that he felt played a particularly important role in the passions. For example, the idea of pain may simulate the state of consciousness we call fear, but that state of consciousness is a pale lifeless version of the passion of fear. This passion, and others like it, have a unique character which does not depend on the particular pain apprehended or even on whether it is bodily or mental pain.

Despite the omission of this important element of human nature, Mill found his father's associationist account of the development of the emotions satisfactory. He reiterated his father's view that pleasure and pain often persist apart from the objects that originally incited the feelings. Both of the Mills anticipated Allport's doctrine of the functional autonomy of motives, when they argued that actions performed first as a means to an end can come to be valued for their own sake. Their account of social motives, such as patriotism or altruism, an account fundamental to their ethics, rested on this idea. If the
society rewards altruistic actions, they may acquire an intrinsic value and be engaged in for their own sake./118/ John Stuart Mill introduced a major revision in the utilitarian system when he argued that we must acknowledge qualitative differences among pleasures. Certain pleasures must be regarded as having a higher value than others./119/ These higher pleasures tend to be ideal, rather than material; ends in themselves, rather than means. These two doctrines—the functional autonomy of motives and of the qualitative differences among pleasures—played a central role in John Stuart's accounts of character and education.

Character and Education

John Stuart Mill claimed that habits of willing may develop when motives operate frequently. In such cases the motives involved become independent of the original desire and "we may will from habit that which we no longer desire for itself."/120/ This doctrine of the functional autonomy of motives is of fundamental importance for his account of character. Like Bentham and his father, John Stuart argued that such habits underly character. A well-developed character is steady and constant, a "fully fashioned will" not subject to the vicissitudes of momentary pleasures and pains./121/

Despite this similarity, John Stuart's view of the development of character differed significantly from earlier accounts because he argued that human motivation is not fixed. While it is true, he argued, that humans seek pleasure and avoid pain, there can be significant differences in the type of pleasures and pain motivating them. Here
Mill's doctrine of qualitative differences among pleasures played a role. There are lower and higher forms of character, just as there are lower and higher forms of pleasure. In the lower form of character material and selfish interests predominate; in the higher form, ideal and sympathetic interests predominate. Mill argued that a progressive society was one in which the latter form of character predominated.\(^{122}\)

Here we meet, once again, the utilitarian idea that the creation of the good society involves altering human motivation. But in John Stuart's account this was no patchwork task, it entailed bringing about fundamental changes. The task is not simply to correctly apportion the balance of pleasure and pain connected with various actions, but to bring about a fundamental shift in the nature of human motivation.\(^{123}\) And it was education, in the broad sense of the term, that was to be the instrument of such change. Mill repeatedly asserted that education has unlimited power. Through education man can develop higher forms of sensibility and new capacities or he can remain at lower levels of functioning. Education forms character, and education directed toward the cultivation of feelings and imagination develops a higher form of character.\(^{124}\)

In most of his writings John Stuart spoke of education in a rather broad sense: as "the culture which each generation purposely gives to those who are to be its successors, in order to qualify them for at least keeping up, and if possible for raising, the level of improvement which has been attained."\(^{125}\) Education, therefore, goes well beyond schooling in his account. In another sense though John Stuart deviated
from his father's account. His own spiritual crisis had taught him that when the education one receives at the hands of others is inadequate, the individual must take steps himself to rectify the situation. Because John Stuart found himself to be deficient in feeling, he undertook the task of cultivating or training his feelings. /126/

This lesson was incorporated into John Stuart's doctrine of self determination. We have the ability to modify our character, he wrote, and our feeling of moral freedom stems from this ability. /127/ But the desire to alter our character does not spring up ex nihilo. Experience, wrote Mill, elicits this "wish to modify our character": that is, experience "of the painful consequences of the character we previously had" or "some strong feeling of admiration or aspiration accidentally aroused." /128/ Once such a wish has been manifested, the primary means through which change is affected is by developing new forms of sensibility. Cultivation of the feelings is required to shift motivation from its lower to its higher form.

Mill did not extensively treat the topic of education. However in his inaugural address as Rector at the University of St. Andrews (1867) he stressed the value of a classical education. /129/ He also advocated the study of literature and poetry as means of training the higher feelings. /130/ Mill's views on the means of education and the ends to be achieved represented a significant deviation from the utilitarian doctrine. However, like many of Mill's deviations neither the results, nor the insights leading to the results were incorporated back into the tradition.

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NOTES FOR CHAPTER 2


2. Ibid., pp. 42-43.

3. Ibid., pp. 43-44.

4. Ibid.

5. Members of this group included William Eyton Tooke, (the leader of the younger Cambridge Utilitarians and one of Mill's closest friends until Tooke's suicide in 1830), William Ellis and John Arthur Roebuck. Ibid., pp. 52-53.


9. The group met from 8:30-10:00 a.m., two days a week. They read portions of the work aloud, allowing time for remarks and/or objections. Each and every point raised was thoroughly discussed even if it took several meetings. Ibid., pp. 77-80. In political economy they read James Mill's Elements of Political Economy (1821), David Ricardo's Principles of Political Economy (1817), and Samuel Bentley's Dissertation on Value (1825). Ibid. The logic texts included Aldrich's Artis Logicae Rudimenta, which disgusted them with its superficiality; the Manuductio and Logica of the Jesuit Du Trieu; Whately's Logic and the Computatio sive Logica of Hobbes. Mill said most of the ideas for
Book I of his Logic originated in these discussions. Ibid., p. 79. Their sole text in analytic psychology was Priestley's edition of Hartley's Observations on Man.

10. Ibid., pp. 80-83.

11. Mill had been critical of the narrowness of the Westminster Review for some time. At the time of writing this article, Mill was contemplating writing a complete book on the French Revolution. He never carried out this work, but the collection of books he gathered was later useful to Carlyle. Ibid., p. 85. Mill became reconnected with the Westminster Review when his short-lived London Review merged with the older periodical in 1835.

12. Ibid., pp. 86-87.

13. F.A. Cavenagh in James and John Stuart Mill on Education, (Cambridge: Cambridge University Press, 1931) suggested that John Stuart's crisis illustrated the weakness of James Mill's system of education. See pp. ix-x, xxii. R. K. Webb wrote: "Mill... was raised by his father to be the perfect Benthamite, receiving an education... so rigorous and yet so limited that at twenty the young man sugerred a hardly surprising nervous breakdown." (Modern England, From the Eighteenth Century to the Present [New York: Dodd, Mead & Co., 1968], p. 179.) On the other hand, Leslie Stephen attributed the crisis to overwork during the editing of Bentham's Rationale of Evidence. Stephen, The English Utilitarians, 3 voils. (London: Duckworth & Co., 1900), 3:19, 22-23. Mill's crisis, as he himself admitted, was probably no more severe than those undergone by many individuals at that age. Mill, Autobiography, p. 91. Furthermore, even if Mill's early training precipitated the crisis, this training provided him also with the means of resolving it. Mill's crisis led to a perceptive critique of the assumptions under which he was raised, assumptions that were to serve as his fundamental principles for the remainder of his life.

14. Ibid., p. 89. There is considerable irony in John Stuart's description of his employment of reason to discover its narrowness.

15. Ibid., p. 92

16. Ibid., p. 93.

17. Ibid.

18. Mill described the character of this revolt:

"It is ontological, because that was experimental; conservative, because that was innovative; religious, because so much of that was infidel; concrete and historical, because that was abstract and metaphysical; poetical, because that was matter of fact and prosaic." (Mill, "Coleridge," Westminster Review 33 (1840):257-302; reprinted in Mill on Bentham and Coleridge, ed. F. R. Leavis (Cambridge: Cambridge University Press, 1980)
Hill came to admire some of the doctrines of these thinkers but claimed that they ignored that portion of truth recognized by the thinkers of the eighteenth century. He wrote:

"though, at one point of my progress, I for some time undervalued that great century, I never joined in the reaction against it, but kept as firm hold of one side of the truth as I took of the other." (Mill, Autobiography, p. 105.)

19. Ibid., pp. 104-5. The lesson is summed up in a passage where Mill asserted that

"the human mind has a certain order of possible progress, in which some things must precede others, an order which governments and public instructors can modify to some, but not to an unlimited extent: that all questions of political institutions are relative, not absolute, and that different stages of human progress not only will have but ought to have different institutions . . . . that any general theory or philosophy of politics supposes a previous theory of human progress." (Ibid.)

Our primary concern, of course, is the impact of such a shift on his psychological and/or ethical views. I maintain that it had no revolutionary impact. John Stuart retained his allegiance to empiricism, associationism and utilitarianism. However, some of his revisions to these doctrines--such as the assertion of qualitative differences among pleasures--do seem related to this shift. His proposal for the development of the new science of Ethology also seems related to this shift. Finally, what he had to say about character and education shows the impact of this shift. However, it seems clear that Mill was more concerned with the development of national, rather than individual character. In late-nineteenth century terms he was speaking about the phylogenetic, rather than the ontogenetic development of character.

20. Ibid., p. 105-6. Mill discussed this cyclical view of history:

"During the organic periods (they said) mankind accepts with firm conviction some positive creed, claiming jurisdiction over all their actions . . . . Under its influence they make all the progress compatible with the creed, and finally outgrow it; when a period follows of criticism and negation, in which mankind lose their old convictions without acquiring any new ones, of a general or authoritative character, except the conviction that the old are false." (Ibid., p. 106.)

It is quite likely that this view of history aided Mill in detecting a contrast between the eighteenth century philosophy and the Germano-Coleridgian school, and in formulating his view that truth was
likely to be found in each position. It also probably sharpened his polemical tendencies as the view suggests that cycles of action and reaction are necessary for the progress of human thought. *Ibid.*, p. 107.


22. See n. 19 above.

23. Mill's opposition to this school was maintained partly for political reasons. He wrote:

"The notion that truths external to the mind may be known by institution or consciousness, independently of observation and experience, I am persuaded, in these times, the great intellectual support of false doctrines and bad institutions. By the aid of this theory, every inveterate belief and every intense feeling, of which the origin is not remembered, is enabled to dispense with the obligation of justifying itself by reason, "and is erected into its own all-sufficient voucher and justification. There never was such an instrument devised for consecrating all deep-seated prejudices." (*Ibid.*, p. 145.)

24. Mill's Logic was written as an exposition and defense of the empiricist school. Its particular aim was to provide an empiricist and associationist account of necessary truths to serve as an alternative to the intuitionist account. *Ibid.*, pp. 144-45. In 1865 Mill published *Examination of Sir William Hamilton* as a defense of the position, but in this work the revisions he made to his father's views could be interpreted as concessions to the competing viewpoint. *Ibid.*, pp. 174-75. In 1867 he began preparing a new edition of James Mill's *Analysis*, to stand as "a classbook of the Experience Metaphysics." *Ibid.*, p. 198.

Mill was not simply contentious; he felt that there was a real value in examining opposing points of view. He wrote:

"Human nature and human life are wide subjects; and whoever would embark in an enterprise requiring a thorough knowledge of them has need both of large stores of his own, and of all aids and appliances from elsewhere. His qualifications for success will be proportional to two things,—the degree in which his own nature and circumstances furnish him with a correct and complete picture of man's nature and circumstances, and his capacity of deriving light from other minds." (Leavis, *Mill on Bentham and Coleridge*, p. 58)

These comments were made by way of identifying certain of Bentham's shortcomings; specifically his lack of sympathy and imagination and his failure to learn from other minds. *Ibid.*, pp. 61-62. John Stuart lived
up to his ideal in one respect—he learned a great deal from opposing schools. However, the representativeness of his nature and circumstances is more questionable.

25. Ibid., pp. 140-41. See also Mill, "Bentham", Westminster Review, 29 (1838):467-506; reprinted in Leavis, Mill on Bentham and Coleridge, pp. 39-98. This article appeared in 1838 following both Bentham and James Mill's deaths (in 1832 and 1836, respectively.) The Coleridge article appeared in 1840. Mill was editor of this Review from 1835-1840. This position, he said, "enabled me to express in print much of my altered mode of thought, and to separate myself in a marked manner from the narrower Benthamism of my early writings." Mill, Autobiography, p. 140.

26. Ibid., pp. 140-41.

27. Leavis, Mill on Bentham and Coleridge, p. 66. In Mill's view, it is essential to recognize that man is capable of "desiring for its own sake, the conformity of his own character to his standard of excellence, without hope of good or fear of evil from some other source than his own inward consciousness." (Ibid.) In other words, man's actions must be guided by inner feelings as well as externally created sanctions. One consequence of Bentham's omission is that "conscience," "principle," "moral attitude," and "moral duty" can have no place in his ethical system (except as derived from social or religious motives) Ibid., p. 67.

Leslie Stephen remarked that while such criticisms were, in the main, justified, they cut more deeply than Mill probably intended. Stephen argued that to admit the necessity of some internal faculty monitoring behavior (eg. conscience) is very nearly equivalent to positing a moral sense. And this is the very faculty Bentham was determined to avoid in his ethical system. Stephen, English Utilitarians, pp. 252-54.

28. Leavis, Mill on Bentham and Coleridge, pp. 67-68. Mill pointed out that such taxonomies were useless since, on the associationist account, anything could become a motive. He wrote:

The attempt, again, to enumerate motives, that is, human desires and aversions, seems to me to be in its very conception an error. Motives are innumerable; there is nothing whatever which may not become an object of desire or of dislike by association." ("Remarks on Bentham's Philosophy" [1883] in The Collected Works of John Stuart Mill, J. M. Robson, ed., 21 vols. to date [Toronto: University of Toronto Press, 1963- ], 10:13.)

29. Leavis, Mill on Bentham and Coleridge, pp. 70-71. According to Mill, no satisfactory system of ethics can exist which denies that individuals have a power of "self-culture" and, therefore, fails to aid them in that task. Mill claimed that the positing of a power of self-determination had its origins in his spiritual crisis, when his
environmentalism led him to feel "as I were scientifically proved to be the helpless slave of antecedent circumstances." Autobiography, p. 109. The notion of self-determination, "that our will, by influencing some of our circumstances, can modify our future habits or capabilities of willing" enabled him to overcome his dejection and to continue accepting environmental determination while rejecting fatalism. Ibid., pp. 109-10. The analysis of liberty and necessity appearing in Book 6 of the Logic stems from this period. Ibid., pp. 109-10. As that chapter involves a criticism of the doctrines of the Owenites, it seems possible that Mill's thinking on this subject was stimulated by the debates with the Owenites carried out in 1825. Ibid., p. 80.

30. Bentham's philosophy, he said, "Overlooks the existence of about half of the whole number of mental feeling which human beings are capable of, including all those of which the direct objects are states of their own minds." (Leavis, Mill on Bentham and Coleridge, p. 71.) Here Mill seems to be assuming that we have what Locke called a "power of reflection." James Mill adamantly denied such a power existed.

31. Ibid., pp. 73-74. In a more zealous phase, Mill maintained that social reform derived "from the effect of educated intellect, enlightening the selfish feelings." Reform was not to be sought by appeals to "unselfish benevolence" and "love of justice." Mill, Autobiography, p. 72. Looking back on these views in 1870, Mill reckoned that few of the survivors of that phase of Utilitarianism would still consider enlightened self-interest to be the main vehicle of social reform. Ibid.

32. Ibid., pp. 109-10. Mill spoke of the experiential school where we refer to the empiricists. Locke's doctrine--that all knowledge consists of generalizations from experience--rests on the premise that "sensation, and the mind's consciousness of its own acts, are not only the exclusive sources, but the sole materials of our knowledge." Ibid., p. 109. Note here that Mill was restoring the Lockean "power of reflection" that James Mill had rejected. Concerning Coleridge's view, John Stuart wrote:

"He claims for the human mind a capacity, within certain limits, of perceiving the nature and properties of 'things in themselves.' He distinguishes in the human intellect two faculties, which ... he calls Understanding and Reason. The former faculty judges of phenomena, or the appearances of things, and forms generalizations from these; to the latter it belongs, by direct intuition, to perceive things, and to recognize truths, not cognizable by our senses ... Among the truths which are thus known a priori ... Coleridge includes the fundamental doctrines of religion and morals, the principles of mathematics and the ultimate laws even of physical nature ..." (Ibid., pp. 109-10.)

33. Ibid., p. 114.
34. Mill stated:

"We see no ground for believing that anything can be the object of our knowledge except our experience, and what can be inferred from our experience by the analogies of experience itself; nor that there is any idea, feeling or power in the human mind, which, in order to account for it, requires that its origin should be referred to any other source." (Ibid.)

35. Mill specifically commented on Coleridge's view of a National Church as an organized body set apart and endowed for the cultivation and diffusion of knowledge. Ibid., pp. 143-48. Coleridge examined other institutions, such as the state, in the same manner, always inquiring as to the reason behind institutions. Mill pointed out that this not only sheds light on the purpose of such institutions, but illuminates the contrast between what they ought to be and what they presently are. Ibid., pp. 141, 167. Although Coleridge—an individual with Tory sympathies—disapproved of the Reform movement, Mill pointed out that his view of the proper composition of the Legislature was more liberal than that held by many Liberals. Ibid., pp. 151-52.

36. Ibid., p. 104.


38. Mill, Autobiography, pp. 102-3, 133. Mill did not resume the project until 1837, the year after his father's death.

39. Ibid., pp. 103-4. T. B. Macaulay had argued, against James Mill that it was impossible to deduce the science of government from the laws of the human mind because these laws (the laws of association) ensured that there was no constancy in human nature. Macaulay, "Mill's Essay on Government: Utilitarian Logic and Politics," Edinburgh Review 50 (1829):159-89. He concluded that our knowledge of human nature must be deduced from politics which is an experimental science like chemistry. Mill's denial of this view of society foreshadowed his later opposition to Comte's thought.

Against Macaulay, Mill maintained that society is nothing more than the sum of the individuals comprising it. Therefore, social laws can be derived from the laws of the individual human mind and politics is a deductive science. Stephen, English Utilitarians, 3:152-53. See also Mill, A System of Logic in Collected Works, vols. 7 & 8 (1973-74), bk. 6, chap. 7.

However Mill argued that the method is not deductive in the same way as geometry. Social phenomena are the effects of an aggregate of causes, some of which cancel out the effects of others. To account for
the actions of such competing causes, it is necessary to employ the
deductive methods used by astronomy and natural philosophy. The new
science of Ethology was supposed to provide the bridging principles
necessary to aid in this deduction. Ibid., bk. 6, chap. 8. See also,
Kubitz, Development of Mill's Logic, pp. 31-37.

40. Mill, Autobiography, p. 144. Leslie Stephen maintained that
Mill's sense of representing a minority viewpoint developed from his
self-imposed social isolation after 1830. Stephen asserted that while
most Englishmen disliked the Utilitarians, and most professors were
concerned with disavowing atheism, Mill overestimated the strength of
the opposition. Most Englishmen, Stephen asserted, are predisposed to
their empiricism, perhaps due to their temperament. Stephen, English
Utilitarianism, 3:77-78.

41. The success of Mill's book was in large measure due to its
adoption as a undergraduate text in logic, a subject obligatory for most
university students. By the 1880's precis of the work could be
purchased by those preparing for examinations. The work continued to be
regarded highly in the twentieth century.

42. Noel G. Annan, Leslie Stephen: His Thought and Character in
Relation to his Time (Cambridge: Harvard University Press, 1952),
p. 141. Annan wrote: "The Logic was one of those books which capture
the mind of a whole generation." (Ibid.)


44. Mill cited astronomy (in its earlier stages) and tidology, as
sciences analogous to psychology. In both sciences the existences and
discoverability of general laws is assumed. And in tidology there were
also subsidiary laws, not well known, concerning the effect of
circumstances of a local nature. As in psychology, the necessity for
such subsidiary laws limits the applicability of the general laws.
Nevertheless, though the general laws by themselves can not be precisely
accurate in all cases, they will be close in most. Mill, Logic, bk. 6.,
chap. 3, secs. 1, 2.

45. Ibid., bk. 6, chap. 2, sec. 1. This, of course, is the Humean
account of causality.

46. Ibid., bk. 6, chap. 2, secs. 2, 3.

47. By experimental science, Mill meant inductive science. The
purpose of all science, in his view, was to formulate statements about
the regularities among phenomena, or empirical laws. Such laws enable
us to describe, to explain and to predict facts (or to determine the
conditions under which similar facts may be expected again to occur).
Ibid., bk. 3, chap. 2, sec. 4.

Such regularities are discovered through analysis, followed by
systematic observation or experiments. The phenomena in question must
first be resolved into their constituent elements. Then by varying the
circumstances (applying Mill's Canons of Induction) either naturally (by observation), or artificially (by experimentation), we discover the real laws. There is no logical difference between the observational and the experimental method, but the latter approach provides us with a greater number of variations in circumstances and greater control over possible confounding circumstances. Ibid., bk. 3, chap. 7.

Artificial experiments are possible only to a very limited extent in such sciences as mental philosophy, physiology and the social sciences. The development of the human mind, Mill said, is "obscured by an indefinite multitude of unascertainable circumstances, rendering the use of the common experimental methods almost delusive." Among such unascertainable circumstances are the "vast complication of physical facts," which are important because of the close connection between mind and body. Ibid. Therefore, in the investigation of the human mind we are largely restricted to the observation of that which "nature spontaneously offers." Ibid.

48. Mill emphasized—probably in opposition to Comte—that psychology is an independent science, not a derivative of physiology. He pointed out that because the succession of mental states can be known independently of and more completely than the conditions of nervous states we can have an independent science of mental phenomena. Ibid., bk. 6, chap. 4, sec. 2. There is some evidence that suggests that Mill's view of the relation between physiology and psychology shifted over the course of successive editions of the Logic. While it would be extremely interesting to trace this shift, it is beyond the scope of the present work.

49. The laws of this science will be subsidiary laws, enabling us to describe, explain, and predict human action and feeling under particular circumstances. Mill wrote:

"mankind have not one universal character, but there exist universal laws of the formation of character. And since it is by these laws, combined with the facts of each particular case, that the whole of human action and feeling are produced; it is on these that every rational attempt to construct the science of human nature in the concrete and for practical purposes must proceed." (Ibid., bk. 6, chap. 5, sec. 2.)

50. Ibid., bk. 6, chap. 5, sec. 5. Psychology provided the general laws of the human mind, while Ethology provided general laws concerning the effect of particular social, political and cultural circumstances. In today's disciplinary structure cultural anthropology seems to be the closest equivalent to Ethology, although social psychology and personality theory are also possible candidates.

51. Ibid., bk. 6, chap. 5, sec. 2. In order to take such circumstances into account, the science must be able to predict what will happen when complex causes interact. It was for this reason that Mill argued, against his father, that politics was not a deductive science like geometry. See n. 39 above.
52. Ibid.

53. In some respects, Mill's view was not really a radical departure from the position of his father. As we have seen, James Mill recognized the impact that social and political conditions had upon individual character. However, John Stuart did recognize a different dimension in these social and political conditions, the dimension of culture. Culture involves the opinions, feelings and habits built up across generations and transmitted from each generation to the next. Mill argued that our character is largely the result "of the qualities produced in us by the whole previous history of humanity." Ibid., bk. 6, chap. 10, sec. 4.

I would argue that John Stuart Mill was far more interested in the formation of national character, than in the formation of individual character. Bain reported that in 1843 Mill "announced that his next book would be Ethology—a subject which had taken hold of him in connexion with the logic of politics." Bain, Autobiography, ed. W. L. Davidson (London: Longmans, Green, 1904), p. 159. Mill described the science of political ethology as "the theory of the causes which determine the type of character belonging to a people or an age." Mill, Logic, bk. 6, chap. 9, sec. 4. See Mill's comments on Political Ethology, ibid., bk. 6, chap. 9, sec. 4.

His historicism is clearly related to such views, which certainly complicated the development of Ethology. It seems, for example, that a philosophy of history would be a necessary prerequisite for the development of such a science. It is significant that Mill dropped the Ethology project in favor of Political Economy—a science that could be developed without having to take into account historical conditions. Ibid., bk. 6, chap. 9, secs. 3, 4. See also Bain, Autobiography, p. 164. Mill's Principles of Political Economy was published in 1848.

54. Kubitz claims that Mill hoped Ethology would be able to provide an alternative account of social equilibrium to that provided by Comte in Social Statics. Kubitz, Development of Mill's Logic, p. 249. On Mill's dissatisfaction with Comte's account, see Mill, Auguste Comte and Positivism (Ann Arbor: University of Michigan Press, 1961 [1865]), p. 89.

55. Logic, bk. 6, chap. 5, sec. 6.

57. Mill claimed that Bentham's philosophy of laws and institutions needed to be grounded in a philosophy of national character, as laws must be suited to the particular stage of progress attained by men. Ibid., pp. 249-50. For specific criticism of the narrowness of views of English political economists, see Mill, Logic, bk. 6, chap. 9, sec. 4.

against the development of a science of character. However, I fail to find any evidence for his claim that Mill proposed Ethology as an alternative to phrenology. While Mill was clearly opposed to phrenology, I believe that the Ethology proposal was derived from other sources. (See n. 53).

In 1891 James Ward evaluated Mill's proposed science and concluded, like Leary, that Mill's psychology was inadequate for the task. Specifically, he argued that the associationist psychology lacked a coherent notion of the individual and therefore had a faulty conception of how circumstances influenced individuals. Ward also claimed that some of these circumstances—e.g. the characters of others—lack the constancy necessary to enable us to develop general laws. Ward, "J. S. Mill's Science of Ethology" International Journal of Ethics, 1 (1891):446-49.

58. That is, they employ the physical, or concrete deductive method. Mill, Logic, bk. 6, chap. 9. On the distinction between the empirical, the geometrical and the physical method, see n. 39.

59. This method was provided because of practical problems in the way of the a priori determination of social laws. One must carefully formulate empirical laws and then, by deduction, verify that these laws follow from the laws of psychology and ethology. Ibid., bk. 6, chap. 10.

60. Ibid., bk. 6, chap. 12, sec. 2.
61. Ibid.
62. Ibid., bk. 6, chap. 12, sec. 7.
63. Ibid., pp. 621-22.
64. Bain and Mill had corresponded prior to their meeting in 1842. Bain immediately took up duties aiding Mill in pre-publication revisions to the Logic. They became close friends during a time in which Mill was becoming increasingly socially isolated because of his relationship with Harriet Taylor. Stephen, English Utilitarians, 3:44-45.
65. See n. 53 above.
66. Mill's Utilitarianism was also a polemical work designed to defend utilitarianism. It was stimulated in part by William Whewell's attack on utilitarianism and defense of intuitionism in ethics. Stephen, English Utilitarians, 3:301. In defending the doctrine Mill, in his usual fashion, introduced several necessary modifications. Mill's attempt to answer the charge that pleasures are subjective and, therefore relative, lead him to assert that there are qualitative differences among pleasures. Some pleasures are more desirable and valuable than others. These differences need not necessitate the abandonment of the felicific calculus; the differences in value among pleasures can be readily determined by those individuals who have known
the full range of pleasures. Such competent judges agree, of course, in
ingrating the intellectual pleasures as more valuable than sensual


68. Mill, Examination of Sir William Hamilton's Philosophy and of
the Principal Philosophical Questions Discussed in his Writings (London:
Hamilton's work was extremely popular at mid-century. His Lectures on
Metaphysics and Logic went through seven editions by 1882 and his
edition of Reid's Works was widely read. Mill's Examination went
through six editions by 1890 and stimulated a great deal of controversy.

69. The issue of the nature of consciousness was regarded as
having great importance. Mill wrote that,

"All theories of the human mind profess to be interpretations of
consciousness; the conclusions of all of them are supposed to
rest on that ultimate evidence, either immediately or remotely.
When we know what any philosopher considers to be revealed in
consciousness, we have the key to the entire character of his
metaphysical system." (Ibid., pp. 107-8.)

70. According to Hamilton, in every act of perception we have a
primitive consciousness of our self and a primitive consciousness of
something different from our self; it is the presence of the "not-self"
which distinguishes perception from simple consciousness. Ibid.,
pp. 19-20, 164.

71. Ibid., p. 192.

72. Ibid., p. 198.

73. Ibid., p. 206.

74. Ibid., pp. 212-13. Memories and expectations have the
peculiar quality of involving a belief in their past or future
existence, within the very same thread of consciousness of which we are
presently aware. Memories and expectations involve a reflexive
awareness that seems to necessitate the postulation of a self or ego.

75. Mill refrained from employing these inexplicables in the
service of intuitionism and objected to those who would employ such
mysteries to construct even greater mysteries.

76. Ibid., p. 214.

77. Ibid., pp. 494-95. Hamilton's argument was a reiteration of
Kant's third antinomy.
78. Ibid.
79. Ibid., pp. 500-1.
80. Ibid., p. 504.
81. Ibid., p. 513.
83. Stephen, English Utilitarians, 3:154-57; Mill, Logic, bk. 6, chap. 4, sec. 2. Mill believed that the inequality of women was a product of their circumstances; Comte believed there was a natural basis for this inequality.
84. Mill, Autobiography, pp. 177-78.
88. For Mill's view of Bain see, "Bain's Psychology" Edinburgh Review 60 (October, 1859):287-321. This article was apparently written to help boost the sales of Bain's books. Mill had supported the publication of Bain's first volume, The Senses and the Intellect. As it did not sell well, the publisher was reluctant to issue the second volume, The Emotions and the Will. Mill and Grote offered to financially back the book and it was published in 1859. Bain, Autobiography, p. 251.

In J. S. Mill's preface to the new edition of the Analysis, he identified two sources of problems in that work. The first stemmed from the imperfect state of the physiological sciences at the time; the second from a characteristic impatience of detail that was a mental quality of James Mill. According to John Stuart, his father's strength lay in seizing the comprehensive laws of a phenomena but he failed to carefully examine the details of their application and failed to anticipate objections that might be made to them. Mill wrote,

"From this cause . . . he has occasionally gone further in the pursuit of simplification, and in the reduction of the more recondite mental phenomena to the more elementary, than I am able to follow him; and has left some of his opinions open to objections, which he has not afforded the means of answering. When this appeared to Mr. Bain or myself to be the case, we have made such attempts as we were able to place the matter in a
clearer light." (Mill, Analysis, 1:xxix-xx.)

89. As we have seen, Mill adopted Locke's description of the sources of our knowledge as involving "sensation, and the mind's consciousness of its own acts" [underlining mine], Leavis, Mill on Bentham and Coleridge, p. 109.

90. Mill, Analysis, 1:112 (n. 35).


92. Indissoluble associations are formed when two events always occur together and neither ever occurs with any other event. Such a process provides the glue which enables us to distinguish "necessary" from merely contingent relations. Necessary truths, according to the intuitionists, are those truths whose negation is inconceivable; Mill argued that what is taken as an original, or natural, incapacity is actually acquired, and is a function of prolonged experience which leads to inseparable associations (which may be either true or false). Ibid., 1:97-100, (n. 30).

93. Ibid., 1:380-81. James Mill assumed that the sequence of our ideas would follow the actual sequence in nature. This serves to ensure that anyone with sufficiently wide experience should form the correct beliefs. Ibid., 1:363-64.

J. S. Mill was more concerned than his father with the problem of distinguishing between truth and illusion and found the associationist account of the formation of belief problematic. Ibid., 1:407 (n. 108). John Stuart's interest in logic made him more concerned with the necessary and sufficient grounds of belief; his canons can be regarded as methods for testing and correcting associations. Kubitz, Development of Mill's Logic, pp. 54-55.

Mill recommended employing the term "inseparable" rather than "indissoluble" to indicate those associations "which we cannot, by any mental effort, at present overcome." Ibid., 1:404 (n. 108). That inseparable associations are not sufficient grounds for belief is indicated by the fact that we are not all naive realists as well as by the existence of optical illusions. Ibid., 1:406-7 (n. 108).

94. James Mill accounted for such shifts in belief by stating that the inseparability gradually shifts from the old association (sun setting/rising with sun moving) to the new one (sun setting/rising with earth moving). If such a shift really took place, we should subsequently be unable to associate sunrise or sunset with motion of the sun. John Stuart Mill pointed out that this is simply not the case; we can consider the phenomena in either light. If so, then neither of these associations is inseparable. Yet we believe one supposition and not the other; "there must therefore be in the fact of Belief...something for which inseparable association does not account." Ibid., 1:411 (n. 108).

96. Ibid., 1:418, 423. On James Mill's distinction, see Ibid., 1:419.


98. Ibid., 1:101-2.

99. Ibid., 1:103-4 (n. 32).

100. Ibid., 1:105 (n. 32).

101. The admission that physiological conditions play a role added a whole new dimension to the account of the mind. The power of association can no longer be regarded as unlimited; the biological substrate places constraints on the associations which can be found. Bain pointed out that emotional states, in particular, have natural connections with one another as a function of connections among their physical accompaniments. Ibid., 1:102 (n. 31). As we will continue to see, the associationist account of the emotions is the weakest part of their analysis.

102. Ibid., 1:106 (n. 34).

103. Ibid.

104. Ibid., 1:106-7. William Hamilton first proposed this form of unconscious linkage.

105. Ibid., 1:106.


107. Ibid., 1:110.


110. More properly, desire is the idea of a pleasure or the idea of a cause of a pleasure. Ibid., 2:351.

111. Ibid., 1:381.

112. Ibid., 2:372.

113. Ibid., 2:372-73.

114. Ibid.
115. John Stuart's own account appeared strained at certain points. He agreed with his father that attention is controlled by the amount of pleasure in the idea and that voluntary attention operates by affixing additional pleasures to the idea. He maintained that the same mechanism operates when our mind is wandering and we must expend effort in attending. In such a case, the superadded desire comes from our dissatisfaction with this infirmity:

"our sense of the insufficiency of our attention in the particular case, [calls up] the idea of another desirable end--greater vigor and certainty in our mental operations. That idea superadds itself to the idea of the immediate end, and this reinforcement of the associating power at last suffices to fix the attention." I b i d ., 2:373-75 (n. 66).

The feeling of effort associated with such a process is due to the prolongation of a "state of unsatisfied desire" or "the incessant alternation of hope and disappointment" stemming from the attention grabbing, then deserting, the idea. I b i d ., 2:376 (n. 66). Whatever one might think about this account it is clear that parsimony is not one of its outstanding features. See also John Stuart's criticism of his father's account of the origin of the "state of unsatisfied desire" I b i d .

116. I b i d ., 2:234 (n. 45). This line of criticism is similar to that discussed above (see n. 101). Although John Stuart Mill maintained that our emotions are acquired, he also recognized a physiological or original component in several of them.

117. I b i d ., 2:234-35 (n. 45).

118. The development or non-development of such social- or disinterested-motives depends to a large degree on the course of education provided for the individual. See 2:chap. 21, secs. 1, 2 and n. 45. For both Mills, motives became "functionally autonomous" when, through frequent repetition, they become habits. M i l l , L o g i c , bk. 6, chap. 2, sec. 4 and U t i l i t a r i a n i s m in C o l l e c t e d W or k s, 10:238-39. On the functional autonomy of motives see G. W. Allport, "Functional Autonomy of Motives," American Journal of Psychology 50 (1937):141-56.

119. M i l l , U t i l i t a r i a n i s m in C o l l e c t e d W or k s, 10:211. Here Mill was reviving a position held by Hartley, but rejected by his father. G. S. Bower, D a v i d H a r t l e y a n d J a m e s M i l l (New York: G. P. Putnam's Sons, 1881), pp. 186-89.

120. M i l l , L o g i c , bk. 6, chap. 2, sec. 4.

121. I b i d .

122. M i l l , U t i l i t a r i a n i s m in C o l l e c t e d W or k s, 10:211-12. For these points and much that I have written about Mill's view of character, I am indebted to the account given by Maurice Mandelbaum in H i s t o r y , M a n , a n d R e a s o n : A S t u d y in N i n e t e e n t h C e n t u r y T h o u g h t (Baltimore: Johns Hopkins
123. As we have seen, Mill argued that anything could become a
motive (see n. 28). The shift in motivation was to be brought about by
cultivating sensibility so that individuals come to prefer the higher,
intellectual pleasures to the lower, sensual pleasures. Such a shift
would be perpetuated, to some degree, since culture is transmitted from
one generation to the next.

124. In his emphasis of the cultivation of feelings, Mill's views
contrast with those of Bentham and his father as well as with those of
Bain. As we will see Bain's main concern was with training individuals
to repress emotion because it distorted reason. As an aside, Mill had
encouraged Bain to read Wordsworth, but Bain remarked that he got

125. Mill, "Inaugural Address," in James and John Stuart Mill on
Education, ed. F. A. Cavenagh (Cambridge: Cambridge University Press,
1931), p. 134. Mill argued that this definition represented a narrow
view of education. His broad definition was "whatever helps to shape
the human being, to make the individual what he is or hinder him from
being what he is not." (Ibid.)

126. In describing his decision to cultivate his feelings in order
to remedy an imbalance in his makeup, Mill seems to be assuming that a
sound character is a balanced, or harmonious character. In contrast
Bentham and Bain clearly adopted the view that a sound character is one
which operates efficiently.

127. Mill, Logic, bk. 6, chap. 2, sec. 3. Mill wrote,

"His character is formed by his circumstances, ... but
his own desire to mould it in a particular way is one of those
circumstances and by no means one of the least influential. We
cannot, indeed, directly will to be different from what we
are ... [but] when our habits are not too inveterate, [we]
can, by ... willing the requisite means, make ourselves
different."

For more on what Mill had to say about self-determination see n. 29
above.

128. Ibid. Kubitz points out that the role of this last
circumstance, being "accidentally aroused" introduces an element of
chance into the moral sciences. Kubitz, Development of Mill's Logic.
129. James and John Stuart Mill on Education, p. 138. Mill rejected the view that such study wasted time and energy that might be devoted to science. He argued that with proper teaching students ought to be able to master both classics and science. Ibid., p. 141. He also argued that the university was not a place of professional education. Ibid., pp. 133-35.

Mill frequently sounded like a faculty theorist when writing on education. See his essay "On Genius" (1832) in Collected Works, 1:329-39 where he talks about education as involving the "calling out and exercising" of faculties. Ibid., p. 335.

SUMMARY FOR PART I

FROM BENTHAM TO J. S. MILL: THE
UTILITARIAN-ASSOCIATIONIST PROGRAM

In Part II have described the development of the doctrines which took shape in the Utilitarian-Associationist program. Bentham and the two Mills were all deeply interested in establishing a program of social reform. Such a program was to be scientific and therefore grounded in a theory of human mind. Their liberal and egalitarian views called for an environmentalist psychology and it was to empiricism and associationism that they appealed.

To guide this program of social reform, the development of certain sciences was necessary. The development of the sciences of morals and legislation (Bentham); of the human mind, logic, ethics and education (James Mill); and of logic and various moral sciences, e.g., ethology and political economy (J. S. Mill), were all initiated or advanced in the works of these three individuals. Each of these sciences was ultimately to be grounded in a theory of the human mind. In treating these sciences as applied branches of psychology, these thinkers created an agenda for psychology.

The reformist zeal of these three individuals manifested itself in polemical defenses of their views against proponents of differing views that they regarded as insufficiently grounded in reason. We shall see that the polemical character of their thought was passed along to those
who followed this tradition during the second half of the century.

My particular concern is, of course, with developments in their theory of mind. I have already noted how the theory of mind was given more attention by James Mill than by Bentham. Corresponding to this shift came an increased emphasis upon genetic modes of explanation. James Mill's theory of mind represented a very extreme form of environmentalism. Mill maintained that all our knowledge was derived solely from the senses with the aid of the glue of association; Locke's ideas of reflection were completely rejected. John Stuart Mill backed off from this extreme environmentalism, finding it incomplete as well as inadequate, at points, for the tasks the theory of mind was required to perform.

John Stuart Mill maintained that his father's theory was hampered by his failure to acknowledge the organic conditions underlying the phenomena of the mind. This led him to neglect certain phenomena (e.g., the "animal aspects" of the emotions) and to posit implausible accounts of others (e.g. memory.) The theory also failed to recognize certain inexplicable mental phenomena that play an important role in our thought and action, such as the inexplicable (but not original) awareness of self or ego that plays a role in all our thought. This awareness has implications for morality since the fact that individuals are reflective may make a difference in the nature of their control over conduct.
Yet another inexplicable element resides in the mind, in this case as a component of belief. Assent cannot be regarded as solely a matter of association; some further constituent must be involved. Here Mill's primary concern was with strengthening the case for his empirical account of logic, but once again he identified a crucial weakness in the associationist account.

Mill's theoretical modifications were inspired by new developments in science and the desire to strengthen the experiential account of the mind so that it could perform its various duties. Whether Mill recognized it or not, these modifications had the effect of lessening the importance of the role played by the laws of association.

The next individual of importance in the Utilitarian-Associationist tradition was Alexander Bain. In Part II, we will examine his work and its relation to the work of Bentham and the two Mills.
The repeal of the Corn Laws in 1846 marked the high point of economic liberalism. Bourgeois liberalism, the political philosophy of the Utilitarian-Associationist thinkers, was to retain its hold on British politics for the next twenty years. Liberal politics responded to and was shaped by the problems of an industrial nation. These problems were widespread in the nineteenth century. Increases in population and its concentration in industrial regions had intensified poverty and created widespread health and sanitary problems. Children worked long hours in factories instead of receiving the schooling that might make them productive members of society. The alleviation of such social problems required intervention on a much broader scale than individuals or charitable/religious organizations could provide. As we have seen, the work of several Benthamite reformers envisioned a new role for the state to play in the amelioration of these problems.

The first wave of reform legislation had been ushered in by the passage of the Reform Bill of 1832 which extended the franchise to many members of the middle class. This bill was followed by a wide range of legislation attacking social problems on a piecemeal basis. Such
reforms provided a stopgap until, in the final third of the century, it became necessary and acceptable to implement legislation with a comprehensive and compulsory character. This second wave of reform was also precipitated by an extension of the franchise. Once again popular agitation preceded reform. In 1867 a second Reform Bill was passed; this measure doubled the British electorate./2/

Educational Reform

Individuals on both sides of the political spectrum were concerned about the new "enfranchisement of the masses." Although they followed different lines of reasoning, all reached the very conclusion that Benthamite reformers had been insisting upon for nearly fifty years: the masses must be educated. From 1870 to 1880 legislation was passed that resulted in a tripling of the elementary school population./3/ This increase led to a greater demand for teachers and the establishment of new teacher training institutes./4/ Many regarded training in psychology as an essential part of the professional preparation of teachers. By 1879 psychologists were beginning to take advantage of the opportunities created by this new situation. Bain had published Education as a Science and his condensed text Mental and Moral Science was also selling briskly./5/ James Sully and James Ward were each employed as lecturers on the theory of education at teacher training institutes./6/

Some of these developments lie outside the period we are now examining but they had their origins in developments taking place at mid-century. By 1850 James Kay-Shuttleworth's pupil-teacher system had

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almost fully replaced the Bell-Lancaster monitory system. In Kay-Shuttleworth's system outstanding pupils were apprenticed to head teachers for a period of five years. They then became eligible to compete for a position as a "Queen's Scholar"; a position that provided a stipend enabling them to spend up to three years at a training college. Upon successful completion of this training and another examination, the pupil-teacher emerged as a "state-certificated" teacher.

In 1858 the Newcastle Commission was set up to investigate popular education and formulate measures "for the extension of sound and cheap elementary instruction to all classes of people." Their investigations and subsequent recommendations shaped the development of the national system of primary education after 1870. The Commission also investigated teaching and teacher training. Certain of their recommendations had long-lasting, although not necessarily beneficial, results. They recommended continuance of the pupil-teacher system under new conditions. Schools were to continue to be supported by a system of government grants but these grants were made conditional on each student's record of school attendance as well as on his or her performance on examinations measuring achievement in reading, writing and arithmetic. The principle of "payment-by-results" met with a great deal of opposition, in part, because it encouraged a pedagogy of drill and rote memorization. Such a pedagogy was rationalized by those who felt exercises trained the "faculty of memory." This faculty view of the mind underlay much pedagogical practice during the period, although Bain's central task in Education as a Science (1879) was to undermine
During the 1870's new types of teacher training institutes were developed as alternatives to the pupil-teacher approach. The establishment of the Teachers' Training Syndicate at Cambridge in 1879 represented a new departure, in offering lectures on education within a university setting. I will have more to say about these developments in Part III and IV of this work.

Middle Classes and Higher Education

From 1832 until 1867 the middle classes were able to extend and consolidate their economic, social and political power. The resulting shift in the social makeup of British society had a number of consequences. The middle classes called for educational reform, both in elementary and in higher education. This resulted in increased educational opportunities and fostered the growth of a new emphasis on the professions and professionalism. As we will see this ethos of professionalism had an impact on the reform of university education.

From mid-century on there was increasing concern about the availability of higher education for the middle classes. During the 1840's and 1850's undergraduates at Cambridge and Oxford were most likely to be either prospective Anglican parsons, prospective lawyers or young men of rank and fortune. Beyond Cambridge and Oxford, education for members of dissenting sects and/or the middle class was available through the Scottish universities, the University of Durham or through the colleges associated with the University of London.
increased educational needs of the middle classes led, on the one hand, to the gradual reform of Cambridge and Oxford and the rise of new colleges and, on the other hand, to the creation of a new type of student: a British version of itinerant scholar.

Royal Commissions investigating Cambridge and Oxford at mid-century demonstrated their concern for extending higher education. Acts based upon their recommendations abolished religious tests for matriculation and graduation, enlarged the pool of university-supported faculty and encouraged the adoption of newer curricula.\(^{18}\) The social composition of the universities gradually began to change, aided by establishment of the Indian Civil Service (1854) which provided career opportunities for members of the middle classes.\(^{19}\) Since the examination presupposed a classical education, the value of a Cambridge or Oxford education was enhanced. The expense of college living which had barred many was technically no longer a deterrent after 1869, when students were permitted to matriculate at Cambridge and Oxford without being affiliated to a college.\(^{20}\)

Students interested in post graduate education during the 1860's and 1870's tended to adopt an itinerant life style. Until 1902, the University of London was solely an examining and degree granting body, not a teaching institution. Students who had received their education from independent colleges or through private study were able to compete for University of London degrees by examination. Many Cambridge students (e.g. James Ward and J. Neville Keynes) supplemented their Cambridge degrees with a degree from the University of London.
The degree granting structure provided by the University of London enabled many independent colleges to grow in size and prestige during this period. Some of these later achieved the status of University Colleges affiliated with the restructured University of London, while others developed into independent institutions.\textsuperscript{21}

Many students, particularly at the post-graduate level, remained dissatisfied with the educational opportunities available in Britain. Graduates seeking a broader and/or more scientific education, often supplemented their domestic education with study at German or French universities. George Croom Robertson, James Ward and James Sully were among the individuals in this generation who spent time abroad and familiarized themselves with continental modes of thought.

The tradition of continental study established in the 1860's and 1870's was to have a threefold impact. In the first place, it increased knowledge of, and respect for continental systems of education; in particular the German system.\textsuperscript{22} Secondly, the year or two spent abroad exposed many individuals to new intellectual influences, far broader than those provided by the classicism of Oxbridge or the empiricism of the University of London.\textsuperscript{23} Finally, and most concretely, individuals who received continental training in scientific disciplines introduced such studies—along with the method of instruction—to the newer universities in Britain.\textsuperscript{24}
Science Education and the Universities

The biggest impetus for the growth and reform of higher education during the late nineteenth century came from those concerned about scientific and technical education in Britain. Concerns about the industrial preeminence of Britain were raised by the new competition from Germany and the United States. When a poor showing at the Paris Exhibition of 1867 consolidated these concerns, industrialists began to call for more adequate scientific and technical training./25/

In 1870 the Devonshire Commission was appointed to investigate scientific education. Between 1870 and 1875, they issued a series of reports examining provisions for scientific instruction at all levels and recommending changes./26/ The Commission's Third Report (on university training) made specific recommendations concerning scientific instruction at this level. They contended that more than one professorial chair was required for the proper study of a scientific discipline and added that a professor required assistants, as well as adjunct professors and demonstrators. They recommended that universities establish research fellowships and research laboratories./27/

These recommendations provide insight into what was regarded as minimal standards for the establishment of new scientific disciplines. That they were so regarded led Croom Robertson to note, with some regret, that the moral sciences had been omitted from the purview of these reports./28/ In 1873 the moral sciences, including psychology, were not officially regarded as incipient sciences whose growth might be
fostered by adoption of certain measures.

Science, Professionalization and "Mind"

It was within this context that *Mind: A Quarterly Review of Psychology and Philosophy* appeared. Bain was the originator and financial backer of this new venture. His protégé, George Croom Robertson, became editor. In prefatory remarks to the first issue in 1876, Robertson addressed the bearings of these larger issues on the fields of psychology and philosophy. He stated first of all that

nothing less . . . is aimed at in the publication of *MIND* than to procure a decision of this question concerning the scientific standing of psychology.

Robertson also emphasized the need for greater professionalism in philosophy and psychology. Noting that the development of both fields in Britain had rested on the work of amateurs, Robertson stated

if their work had been academic, it would probably have been much more sustained . . . . The informality of their thought has undoubtedly prevented [British] philosophy from obtaining the scientific consideration which it holds elsewhere.

It was Robertson's hope that the new journal could aid in the movement away from such amateurism. He also expressed his hope that the journal would provide a forum for the presentation of detailed work in psychology including work demonstrating its bearing on educational matters. He wrote:

Theoretic psychology has its practical application, as a whole, in the balanced training and culture of the individual mind, while it deals separately with functions whose natural play stands greatly in need of regulation . . . . A true psychology ought unquestionably to admit of being turned to the educator's purpose.
The issues of the scientific status of psychology; the professionalization or "disciplinization" of psychology and the bearings of psychology on education shaped discussions among psychologist-philosophers from 1870. The impact of these concerns can be displayed most clearly by examining the narrower social-political context in which the academic discipline of psychology developed: the mental and moral sciences curricula at the University of London and Cambridge University.

Institutional Developments in Psychology

Universities

University of London

In 1857 Bain was appointed to serve as one of two examiners in Mental and Moral Philosophy at the University of London. Bain and his co-examiner Thomas Spencer Baynes immediately proposed a revised scheme of subjects for the logic and moral philosophy examination. This new scheme was adopted by the Senate in 1858 and remained in effect from 1860-1884.

For the ordinary B.A. and B.Sc. degrees students were required to take examinations in logic and moral philosophy. The topics covered under these headings included: "Names, Notions" and Propositions; "Syllogism"; "Induction and Subsidiary operations"; "The Senses"; "The Intellect"; "The Will, including the Theory of Moral Obligation." As Bain admitted, this curriculum was designed with certain texts in mind. A popular manual of this period advising
students on how to prepare for the University of London examinations recommended a close reading of Mill's *Logic* and Bain's works on psychology. The adoption of this curriculum ensured steady sales of Mill and Bain's work for the next thirty or forty years.\footnote{35/}

Candidates for the B.A. and B.Sc. honours degrees were given more difficult examinations on these topics, as well as examinations on the topics of emotions and the theory of ethics. From 1860 through 1879 about ten students per year obtained the first degree with honours.\footnote{36/} After obtaining their first degree students could prepare for an examination for the M.A. degree. The subjects covered by Branch III of this degree included logic, moral philosophy, political philosophy, history of philosophy and political economy. During the 1860's about three students per year completed this degree; during the 1870's about five per year obtained the degree. As we will see, this examination paralleled the Moral Sciences Tripos at Cambridge which led to a degree after 1860. The London examination lasted four days and consisted of six papers and two essays. There were two papers each on political economy and logic and moral philosophy; one paper each on moral and political philosophy and history of philosophy; one essay on logic and moral philosophy and one essay on history of philosophy.\footnote{37/} The history of philosophy essay topics included:

1. 1868: The meaning of the terms "sensation" and "idea"; the questions related to them and any cases where the different meanings have given rise to confusion.\footnote{38/}

2. 1869: The psychology of belief.\footnote{39/}
(3) 1872: The reference to physiological conditions in the explanation of mental phenomena: whether admissible in principle and justified by results attained already or to be anticipated. Sketch by the way the history of philosophic opinion and practice on this head./40/

(4) 1874: The relation of the Will to other mental powers, and its influence on the formation of character./41/

(5) 1876: The relations between physiology and psychology./42/

(6) 1878: Is it possible to reconcile the doctrines of Freewill and Necessity?/43/

(7) 1879: Is logic a branch of psychology? If not, what is its position in a classification of sciences?/44/

It is obvious that these topics do not represent a particularly broad conception of the history of philosophy. The concerns of thinkers in the Utilitarian-Associationist tradition, including Bain, resurface in these questions./45/

Students who had earned the B.Sc. degree could, after two years, go on to compete for a D.Sc. in logic and moral philosophy. To earn this degree students were required to take four days of examinations in various subjects. The D.Sc. Branch XVI included as its principal subjects logic and moral philosophy; its subsidiary subjects were physiology, history of philosophy, political philosophy and political economy./46/ By 1860 the University of London had in place a scheme for the full academic training of someone interested in the mental and moral sciences, but very few people availed themselves of these opportunities. During the 1870's only one person earned the D.Sc. degree, although there were a few other attempts./47/ While the curriculum had potential, it did not serve to establish psychology as an academic discipline. Nevertheless, it did force large numbers of students to...
become aware, however superficially, of a new area of investigation.

In 1876 George Croom Robertson published a report in *Mind* on the study of philosophy in London. He traced the history of the University of London, its transformation into a mere examining body and noted the damaging effect of this transformation on the study of philosophy. He wrote:

the candidates, in course of time discover that certain books most nearly correspond with the scope of the examination, and the examiners, however careful they may be to put open questions, cannot refuse a stereotyped form of answer or bear hard on those candidates whose obviously limited reading has left them without the means of answering any but a determinate class of questions. . . . A little book-knowledge of philosophical questions, when not a dangerous, is truly a most unprofitable thing./48/

And he added:

I doubt if anyone who has read the written answers of the multiform crowd of candidates for the B.A. degree, the majority of whom have come into contact with no living instructor, can hold it an unmixed good that an examination in Philosophy is imposed upon all under the present constitution of the university./49/

Although Robertson was specifically speaking about the study of philosophy, the problem he identified was widespread and serious enough to lead to the reform of the University of London, although not for another twenty-odd years./50/

University College, London

In 1866, George Croom Robertson, a former student and protégé of Bain's was appointed to the chair of Mental Philosophy at University College. The contest was quite controversial and Bain displayed his zealous partisanship of the Utilitarian-Associationist tradition.
First, let me present the bare facts of the contest. During July of 1866 a number of candidates made application for the vacant chair of Mental Philosophy. Chief among these candidates was James Martineau, Professor of Mental, Moral and Religious Philosophy at Manchester New College, and George Croom-Robertson, a young protégé of Bain's from Aberdeen./51/ In early August, after reviewing the applications of all the candidates, the Senate reported to the Council of the College that, in their opinion, Martineau was the most eligible candidate. Despite this recommendation, the Council declined to appoint Martineau to the chair./52/ A second report was prepared by the Senate examining the qualifications of the remaining candidates. This report concluded that of the candidates whose claims we have examined up to this point [excepting Martineau] he [Robertson] is the ablest, and, as far as we can judge, the most learned and the most likely to rise to eminence, and to raise the reputation of the College./53/

Despite a public uproar about the case, Robertson was appointed to the chair in December 1866./54/ Although Robertson was quite well qualified for the position, Martineau certainly had the advantage over him in terms of experience and a history of successful teaching./55/ Why wasn't Martineau appointed to the position?

Two basic objections to Martineau's appointment surfaced in comments written by Council members. The first was that "the philosophical position he represented was at variance with philosophical truth," at least as that "truth" was conceived by "the original founders and many of the late supporters of University College."/56/ The second was that as a prominent theologian he could not be depended upon to separate his theological principles from the teaching of mental
philosophy. Martineau's teaching, it was argued, might violate or endanger the central principle of the college: that of impartiality among religious sects. /57/

Correspondence between George Grote and Alexander Bain during this period indicates that considerable behind-the-scenes manipulation took place to secure Robertson's appointment. While Grote's objections to Martineau rested clearly on theological grounds; Bain, equally clearly, raised the philosophical objection. Some background information on Martineau's work is relevant here.

In 1860 Martineau had published an article entitled "Cerebral Psychology: Bain." This article reviewed Bain's major works and was highly critical of his atomistic associationism and his hypothetical physiology. /58/ In fact, many of the criticisms made by Martineau were reiterated by James Ward twenty-five years later in his much more successful attack upon Bain's psychology. /59/ Martineau's article apparently irritated Bain; and he recommended that Grote read it in order to evaluate Martineau's candidacy. Bain wrote to Grote:

To my mind, that single article stamps Martineau's anti-scientific character to such a degree as would make his appointment to University College a dire misfortune. /60/

Two weeks later Bain again wrote to Grote, this time expressing his alarm at the apparent certainty of Martineau's appointment. He said:

That Martineau's teaching would be both in spirit and in the letter hostile to inductive philosophy is to me most certain. I might forgive his handling of my own books, although I could not trust such a man as a teacher: but the virulence of his language toward Auguste Comte, on Comte's best points—his Atheism, makes him to me odious. /61/
Bain and Grote carried the day. That the victory was not to be regarded as a personal one for Robertson, but rather a triumph of principle for Bain and Grote, was made clear in Grote's congratulatory letter to Robertson and in Grote's directives to Bain concerning the content of Robertson's inaugural address. I cannot resist presenting one of these letters in its entirety and quoting extensively from the other. Grote's first letter was written to Robertson two days following his election:

You say truly that I have had to go through much anxiety and effort to bring about this result. I have certainly made myself sponsor for you with a degree of affirmative confidence, such as nothing but my full knowledge of Mr. Bain and the value of his word could have prompted or warranted. I do not at all regret having done this: for I am persuaded that you will redeem all my pledges duly and worthily. At the same time, I must remind you that you have a great deal to redeem. My friends as well as myself will be deeply humiliated—our many opponents will be triumphant on their side—if the figure which you make in the Lecture-room is other than creditable and efficient.

Succeeding as you do to a chair which has for thirty years been a nullity in the hands of another, you have the most splendid opening before you for acquiring dignity and reputation as a Professor and for furthering (what I value most of all) the scientific handling of Mental Philosophy in the footsteps of Mill and Bain.

Grote's second letter was written to Bain ten days later. Here Grote made several rather direct "suggestions" pertaining to Robertson's inaugural address. His central concern was minimizing the appearance of partisanship that, in fact, had been the cause of Robertson's election. Grote wrote:

He ought to take no notice of the peculiar circumstances of the contest which has aided in his appointment. Towards the end of the lecture he will say a few words about the antithesis between the secular and the theological point of view, in respect to Mental Philosophy (that the principle of University College prescribes absolute neutrality and abstinance from
R's appointment is in reality a victory over the theological principle; but we have got the reality, and we shall only lessen the real value by putting the fact forward prominently as a matter of triumph./63/

Grote added, parenthetically, that Robertson should not mention him personally. Nor, he insisted, should he allude to Bain's partisanship. Grote wrote:

He must take care to avoid . . . putting himself ostensibly forward as your pupil, or as prominent and exclusive champion of your doctrines or point of view. This is what his opponents will impute to him and he ought to give no ground for it in his inaugural lecture./64/

On the other hand, Grote continued, "I think he ought to lay special stress and emphasis on J. S. Mill's book, as having entirely altered the aspect of Logic."/65/ And he added, "He may dwell on Mill's book with the less reserve as Mill has had nothing to do with his appointment."/66/

Robertson's inaugural lecture does reveal the impact of these directives./67/ Despite such an inauspicious beginning, Robertson went on to make many valuable contributions from this chair. He was admired as a teacher, and worked extremely hard at his job as editor of Mind. Nor was he a slavish advocate of Bain's doctrines or point of view. Robertson was acquainted with German thought and understood quite clearly that empiricism required a new start in Britain./68/ Unfortunately ill health reduced his productivity and led to his early death in 1892.
The story does not end with Robertson's triumphant address. Grote was apparently unwilling to rest secure with individual victories. A bequest made at his death in 1877 established the Grote Chair of Mind and Logic. Grote attached two conditions to the bequest. First, the chair could only be occupied by a lay person. Second, the performance of the holder of the chair must be evaluated by a review committee every four years. Robertson became the first Grote Professor of Mind and Logic and held that position until he retired for health reasons in 1892.

Cambridge University

Cambridge University had established the Moral Sciences Tripos in 1851. This tripos merely combined the subjects in which the University already possessed professors and did not confer a degree. In 1860 the regulations were revised so that a degree was conferred upon successful completion of the tripos. A more complete scheme of examinations was constructed and a Board of Moral Science Studies was established to oversee the curriculum for this tripos. The areas examined included: moral philosophy, mental philosophy, logic, history and political philosophy, political economy and jurisprudence. A paper on the history of philosophy was also given. The authors and books recommended for mental philosophy were: Plato's *Theaetetus*; Aristotle's *De Anima*; Descartes' *Method*; Locke's *Essay*; Reid's *Philosophy* (Hamilton's Notes and Discussions); Kant's *Kritik der Reinen Vernunft*; Victor Cousin's *Philosophie du XVIII Siècle* and Sir William Hamilton's *Lectures on Metaphysics*. In this respect alone, the curriculum at
Cambridge was significantly broader than that at the University of London. Furthermore, St. John's established a fellowship in the moral sciences in 1863. From 1860 through 1867, 74 candidates completed the tripos./72/

A new curriculum adopted in 1867 eliminated history and jurisprudence from the Moral Sciences tripos./73/ Only moral and political philosophy, mental philosophy, logic and political economy remained as subjects on the tripos but students were also required to write a separate paper on history of philosophy./74/ The mental philosophy works were Descartes, *Discours de la Methode* (not including the latter portion); Hamilton, *Lectures on Metaphysics*; Bain, *Senses and intellect*; Locke, *Essay Concerning Human Understanding*; Cousin, *Philosophie de Locke*; Cousin, *Philosophie de Kant* and Ferrier, *Institutes of Metaphysic.*/75/ During the period from 1868 through 1875 eleven or twelve candidates completed the tripos each year.

From 1867 onwards the character of the Moral Science tripos was shaped by Henry Sidgwick's reform efforts./76/ The curriculum was fully revised about once every ten years, but new readings were issued more frequently. From 1876 onwards the Board of Moral Sciences provided a "schedule of subjects" for the tripos, in addition to the list of readings. The subjects for mental philosophy included psychological, epistemological and metaphysical topics; a far broader array than found at London./77/
In 1876 Sidgwick published an article in *Mind* on the study of philosophy at Cambridge. Sidgwick was not optimistic about the situation. He noted the paucity of students taking the tripos and examined reasons for this situation. These included the lack of rewards associated with this tripos, as well as the absence of prestige and direct professional utility. He added that philosophical study was intrinsically unattractive "for most English minds" and that the subject lacked affinity with the traditional habits and tendencies of Cambridge that stemmed from its emphasis upon mathematics and physics. Such tendencies could even be seen at work within the Moral Sciences tripos, wrote Sidgwick. He observed that Cambridgians had a great affinity for political economy which resulted in a stress on logic and political economy on the tripos, at the expense of "the larger but vaguer subjects of Mental Philosophy (Psychology and Metaphysics) and Moral and Political Philosophy."

Bain and Mill's texts clearly did not occupy center stage at Cambridge as they did at the University of London. We will see that, in the 1880's, Cambridgian influences led to the broadening of the curriculum at the University of London. These curriculum revisions took place during the period in which a Cambridge fellow, James Ward, was presenting his devastating critique of Bain's psychology. This critique will be presented in Part III, after the reader has become acquainted with the life and work of Alexander Bain.
NOTES FOR INTRODUCTION TO PART II

1. This piecemeal and largely voluntary legislation included the Factory Act of 1833, the Poor Law Amendment Act of 1834 and the Public Health Act of 1848. This legislation was discussed briefly in the Introduction to Part I.

2. Spearheaded by the Reform League, the "Hyde Park Riots" in July of 1866 showed the strength of popular support for electoral reform. Robert K. Webb, Modern England: From the 18th Century to the Present (New York: Dodd, Mead, 1968), p. 324. The Reform Bill of 1867 almost doubled the electorate with the greatest increases among voters in the boroughs. In many towns the working classes gained a majority, to the consternation of the conservatives. Ibid., pp. 324-27.

3. This legislation included: Foster's Elementary Education Act (1870) which made elementary education available to all children; Sandon's Elementary Education Act (1876) which indirectly made education compulsory by regulating child labor; and Mundella's Education Act (1880) which stipulated that local authorities must make by-laws to enforce attendance. John W. Adamson, English Education: 1789-1902 (Cambridge: Cambridge University Press, 1964), pp. 356-57. The Cross Commission, appointed in 1885 to investigate the workings of these acts, reported that children listed on school rolls increased from 1,693,059 in 1870 to 4,465,000 in 1886. In addition, a larger percentage of those listed were actually attending school. Ibid., p. 380.


5. Bain's Mental and Moral Science was published in 1868 and went through at least five editions by 1884. Education as a Science was published in 1879 and went through ten editions during Bain's lifetime.

6. In 1879 James Sully was lecturing on the theory of education at Maria Grey Training College and at the College of Preceptors. James Ward had just begun his lectures on the theory of education at the newly established Teachers' Training Syndicate at Cambridge.

7. The monitory system had been developed to provide efficient and economical education. The more capable students were given the task of instructing the rest of the students. The system was highly efficient because only one schoolmaster was required to teach the monitors, who then passed their knowledge on to the rest of the
children. Although cheap and efficient, it was not found to be particularly effective. The monitors tended to simply parrot what they had heard from the schoolmaster. Adamson, English Education, pp. 23-25. Bentham and James Mill were both enthusiastic about the monitory system which has been described as "the application of factory methods to the classroom." James Mill adapted this system in the education of his own children: John Stuart served as the monitor. For John Stuart’s assessment of this system see Chapter 1, n. 85 above.

Kay-Shuttleworth’s system was regarded as an improvement over the monitory system as the pupil-teacher was more closely supervised and received systematic instruction, at least in theory. After the pupil-teacher system was instituted in 1846, large numbers of certified teachers were turned out. Dicken’s Hard Times (1854) satirized the new profession with his character Mr. McChoakumchild who along with

"some one hundred and forty other schoolmasters had been lately turned out at the same time, in the same factory, on the same principles, like so many pianoforte legs."


9. Adamson, English Education, p. 203. One of the main reasons for establishing this commission was the increased concern over the rising costs of education. These increases were particularly problematic as the Government had sustained heavy military costs in the Crimean War. The Newcastle Commissioners included Henry Pelham, fifth Duke of Newcastle, as chairman, James Fraser and Matthew Arnold. Ibid.

10. The commissioners were highly critical of the quality of instruction and especially the teaching of reading, writing and arithmetic. In contrast, they found that moral and religious instruction was successful. The report stated:

"The religious and moral influence of the public schools appears to be very great, to be greater than even their intellectual influence. A set of good schools civilizes a whole neighborhood. The most important function of the schools is that which they best perform." (quoted in ibid., p. 210.)

This assessment paved the way for the establishment of a national and non-sectarian system of education.

11. The Revised Code, which was based upon these recommendations, was adopted in 1852. It abolished direct payments to teachers, pensions and a whole range of grants that had been available for equipment and special needs. The parliamentary grant was to be paid directly to school managers. Deductions were made from the grant for unsatisfactory attendance, unsatisfactory performance on examinations and unsatisfactory school conditions. Tropp, The School Teachers, p. 81.
Kay-Shuttleworth also expressed his opposition to the revised code calling it an
"arbitrary and indefensible application of a doctrine of political economy respecting supply and demand, bounties and protection, to a sphere of action in which it has never had any place in English Statesmanship—to a sphere of moral action in which it is totally inapplicable." (quoted in Tholfsen, Kay-Shuttleworth, pp. 172-73.)

However unpopular, the system of payment-by-results remained in effect until 1890 and persisted for examinations in specific subjects until 1897.


13. The Cambridge Teachers' Training Syndicate paved the way for the establishment of a Day Training College for men affiliated with the university. The Teachers' Training Syndicate operated from 1879 through 1891, when a Day Training College was established at Cambridge.


17. Ibid., pp. 89-92, 95. The Scottish Universities, popular with dissenting families during the first half of the century had been modelled on the German universities. G. E. Davie claims that the unique character of these universities was destroyed when the English government attempted to reform them through the Scottish Universities Act of 1858. See Davie, The Democratic Intellect: Scotland and her Universities in the Nineteenth Century (Edinburgh: University Press, 1961). By the 1880's Scots were sending their own children to English Universities. The University of Durham was chartered in 1837. It was modelled on Oxford but eliminated religious tests and expensive college life.

18. Parliamentary Acts covering Oxford (1854) and Cambridge (1856) initiated many of these reforms. In addition, Commissioners were appointed to oversee Oxford and Cambridge and the Universities were permitted to amend their statutes under the guidance of these Commissioners. Adamson, English Education, p. 194-95.
The establishment of a university professoriate involved a shift from the traditional English collegiate form of institution to the German form of the university. The collegiate system relied on a pool of tutors who had close contact with a limited number of students. The goal of such an education was the mental and moral discipline of individuals. Ibid., pp. 183-84. Because college tutors catered to such small numbers they could not be specialists beyond the standard subjects of classics or (at Cambridge) mathematics. Gerald Geison, "Sir Michael Foster and the Rise of the Cambridge School of Physiology: 1870-1900" (Ph. D. dissertation, Yale University, 1970), p. 21. The college system with its tutorial teaching staff discouraged the growth of modern disciplines, particularly scientific disciplines.

The so-called Prussian system had distinctively different goals. Here the aim of teaching was the dissemination of a body of knowledge by experts in the field. On the post-graduate level the goal was the creation of new knowledge. Although such a system was clearly better adapted for providing instruction to large numbers it met with much resistance at Cambridge and Oxford. Adamson, English Education, pp. 183-84.

19. After 1878 those who had passed the Indian Civil Service examination were required to spend a year at either Oxford or Cambridge in order to acquire polish before leaving for India. Their presence led to the establishment of an Indian Languages Tripos at Cambridge in 1879. At Oxford an Indian Institute was established where Arnold Toynbee served as a tutor. Ibid., p. 425.

20. On the costs of collegiate living see ibid., pp. 190-91, 417. Non-collegiate students were accepted at Oxford from 1868 and at Cambridge from 1869. Many felt that such students were missing out on one of the most valuable aspects of life at these universities; the social mixing in colleges. In fact, unaffiliated status could only be a viable alternative if there were a substantial pool of university lecturers who could provide instruction for such students. What tended to happen during this period was that most of those who entered these universities as non-collegiate students quickly affiliated themselves with colleges. It was the founding of new colleges--oriented toward some of the newer subjects--that made a greater contribution to the nineteenth century reform of these universities. Ibid., pp. 195, 416-17.


22. This new respect was sorely needed as there was strong opposition to the "Prussian system" among those at Cambridge and Oxford. Matthew Arnold was one of the early proponents of the German system of higher education. He first published Schools and Universities on the Continent (London: Macmillan, 1868). In 1874 he issued the sections on Germany from that work as Higher Schools and Universities in Germany (London: Macmillan, 1874).
23. The importation of German philosophical thought which led to the critique of empiricism in the 1870's and 1880's can be traced to these students. Henry Sidgwick and Thomas Hill Green were among the first generation of thinkers exposed to these influences. George Croom Robertson, James Ward and James Sully also absorbed German philosophical thought to varying degrees. For these latter thinkers, Hermann Lotze's work was particularly important. Another German neo-Kantian, Friedrich Lange, provided the framework within which English empiricism was transformed into scientific naturalism by John Tyndall, Thomas Huxley and others. These developments will be described in Chapter 6 below.


26. The Devonshire Commission was established in 1870 partly as a result of the lobbying efforts of the British Association for the Advancement of Science. William Cavendish, Duke of Devonshire, Chancellor of Cambridge University and later benefactor of the Cavendish Laboratory (1871) was chairman of this commission. Thomas H. Huxley and James Kay-Shuttleworth were among the commissioners. Between 1870 and 1875 the commission issued eight reports covering all bodies that provided scientific instruction. Progress of the commission was reported in Nature, a journal founded in 1869.

27. Ibid., pp. 420-22.


29. The journal project had been discussed between Bain and Robertson at least as early as 1872. Bain to Robertson, 28 August 1872. (All correspondence between Bain and Robertson is in the George Croom Robertson Papers, University College Library, University College, London.) The original title of the journal was the Quarterly Review of Mental Science, but Maudsley objected that it might be confused with his Journal of Mental Science. Robertson suggested the title Mind and Bain eventually agreed, although he noted that "'Mind' is on a par with Nature except perhaps a little more affected and assuming and open to sarcastic wits." Bain to Robertson, October 1874.

The prospectus issued by Bain and Robertson made it clear that the journal was conceived as a scientific, rather than an exclusively philosophical one. They wrote:

"The fact that Mind is now made the subject of positive scientific inquiry like any aspect or department of external Nature, may be assumed as the ground for establishing such a periodical . . . Yet it would be vain to pretend to ignore the expressions of doubt or denial as to the possibility of a phenomenal science of mind, that are heard not more from the
representatives of the older philosophical methods, on the one hand, than from scientific specialists, on the other. It is for those who maintain the possibility, to make it manifest by submitting their inquiries to every test suggested by the procedure of recognised sciences; and there is not a more signal test than the publication of a continuous record of fresh results cohering alike with one another, and with facts known or principles allowed before. The new Review will have done something to determine a question of the highest moment for science in general, if it succeeds, and, if it fails, may not have done nothing. ("Prospectus for the Quarterly Review of Mental Science," George Croom Robertson Papers, University College, London)

At the end of Robertson's tenure he admitted, in fact, that the new journal had failed in this respect, although he did not draw any more general conclusions concerning the possibility of a phenomenal science of mind. Robertson, "Valedictory," Mind 16 (1891), p. 559.

Philosophical topics were also to be treated, especially those which "admit of being brought to a base of theoretic psychology." Bain and Robertson continued:

"To work in the logical, aesthetical, and ethical direction is . . . to follow out the theoretical science of psychology upon the lines of its proper and immediate application; as, on the other hand, to bring questions of logic, aesthetics, or ethics to their psychological base, is the surest means of determining them. ("Prospectus")

Here we have a claim avowedly in line with the precepts of the Utilitarian-Associationist tradition: that psychology is the foundation of logic, aesthetics and ethics. Other tasks that befall to psychology, and for which the new journal might play an important role are the explication of the "varied procedure of the sciences" (methodology) and providing "guidance for the duly-balanced training of human beings" (education.) (Ibid.)

Although not stated in the prospectus, a definite intention of Bain and Robertson was to represent the full spectrum of philosophical opinion in Britain. It is not clear whether this was adopted as a survival strategy, as a means of deflecting anticipated criticism of their own bias, or simply because they felt confident that their view would carry the day against the views of their opponents. I will return to this issue in Parts III and IV.

30. Robertson, "Prefatory Words," p. 3.
32. Ibid., p. 4.
33. Bain, Autobiography (London: Longmans, Green & Co., 1904), pp. 246-49. Working against the effectiveness of this curriculum was the fact that in 1858 the University of London examinations were opened to all, regardless of college affiliation. This meant that the examination curriculum was completely divorced from any systematic course of study.

34. Robertson, "Philosophy in London," Mind 1 (1876):538-39. The second B.A. examination included papers in classics, Greek history, mechanical and natural philosophy and animal physiology as well as logic and moral science. The second B.Sc. examination included papers in mechanical and natural philosophy, chemistry, animal physiology, geology and paleontology as well as logic and moral philosophy. University of London Calendar, 1860.

In 1877 new B.Sc. regulations came into effect requiring students to write papers on three of the following nine subjects: (1) pure mathematics, (2) mixed mathematics, (3) experimental physics, (4) chemistry, (5) botany, (6) zoology, (7) animal physiology, (8) physical geography and geology, (9) logic and psychology. University of London Calendar, 1877. Logic and psychology were, in effect, made an optional topic on this examination.


36. The majority of these students earned the B.A. degree. One student (John Neville Keynes, later Lecturer in the Moral Sciences at Cambridge) earned both the B.A. (1871) and the B.Sc. (1874) degree.

37. University of London Calendar, 1860.

38. University of London Calendar, 1869. Alexander Bain and Edward Poste were examiners that year and James Sully earned a medal for his performance on the examination. This history of philosophy examination consisted entirely of questions on rhetoric. Bain had published his work English Composition and Rhetoric in 1866. The essay set for the logic and moral philosophy portion of the examination was: Why were the rules of induction not discovered so soon as the rules of deduction?" (Ibid.)

39. University of London Calendar, 1870. Alexander Bain and George Croom Robertson were examiners that year. The examination questions on the history of philosophy focused on Descartes. The essay set for the logic and moral philosophy portion of the examination was: "Necessary Truth; what has been so called and what in strictness should bear the name." (Ibid.)
40. University of London Calendar, 1873. George Croom Robertson and John Venn were examiners that year. The examination questions on the history of philosophy focused on Kant. The essay set for the logic and moral philosophy portion of the examination was: "Some define Logic from the subjective side, as a Science of Laws of Thought: others from the objective, as a Science of Evidence founded on the connexions of physical and mental phenomena. How is it that two such distinct definitions can result in any community of subject matter? To what extent should they fail to do so, if consistently adhered to?" (Ibid.) This question, along with a great deal of other evidence suggests that English thinkers were demarcating between logic and psychology considerably before Frege and Husserl's better known critiques of psychologism. This issue should be investigated further.

41. University of London Calendar, 1875. Thomas Spencer Baynes and John Venn were examiners that year. James Ward earned a medal for his performance on the examination; the above cited question no doubt provided him with the opportunity of expounding his own views in opposition to those held by Bain. The history of philosophy examination questions focused on Spinoza and, to a lesser degree, Descartes. The logic and moral philosophy essay topic was: "The bearing of the modern generalizations of Evolution and the Conservation of Energy upon the Scope, Methods and subject matter of the Sciences of Logic." (Ibid.)

42. University of London Calendar, 1877. Baynes and Venn were examiners that year. The history of philosophy examination questions focused on Berkeley and Hume. The logic and moral philosophy essay topic was: "[provide] A sketch of the position occupied in Logic by the Causal Connexion, and the principal problems and discussions to which its consideration has given rise." (Ibid.) After this year the logic and moral philosophy portion of the examination was renamed Psychology and Logic. In 1881, it was renamed Mental and Moral Science.

43. University of London Calendar, 1879. Baynes and William Stanley Jevons were examiners that year. The history of philosophy examination questions focused on Locke and Leibnitz. The psychology and logic essay topic was: "The Logical Methods of the Moral Sciences." (Ibid.)

44. University of London Calendar, 1880. Jevons and James Sully were examiners that year. The history of psychology examination focused on Kant. The psychology and logic essay topic was: "On the Quantitative treatment of Mental Phenomena." (Ibid.)

45. For example, questions concerning the relationship between psychology and physiology, as well as psychology and logic appeared at least twice during this period. Questions concerning the will, the nature of belief, the causal connection and the methodology of the moral sciences also represented concerns of the Utilitarian-Associationist tradition. Although the focus of this examination is clear, I can not argue that the examination structure represented an effective vehicle for disseminating their views. Not many students took this examination. From 1860 through 1869 only 30 students received the M.A. Branch III
degree; from 1870 through 1879, 56 students obtained the degree.

46. *University of London Calendar*, 1860. From 1881, original research was required for this degree.

47. An Indian student, Prassana Kumar Ray, earned the D.Sc. in 1876. He later became Professor of Logic and Philosophy at Presidency College, Calcutta. A three hour examination in logic and mental philosophy (later logic and psychology) was required of all candidates for the M.D. and Master of Surgery degrees. This situation lasted until the mid-1880's when the Medical School protested about the lack of relevance of this examination. An alternative examination in mental physiology "especially in its relations to mental disorders," was then established for medical students.


50. One of the reasons for the founding of the independent Victoria University by those at Owens College, Manchester was that "fewer and fewer of their students care to look to the London examinations." *Ibid.*, p. 541. The resulting loss of students created further problems for the University of London.

51. James Martineau was an influential mid-nineteenth century critic of empiricism who advocated personal idealism as an alternative to empiricism. As a boy Martineau studied at Dr. Lant Carpenter's school; in later years Martineau's theological views influenced Carpenter's son, William Carpenter. James Drummond, ed. *The Life and Letters of James Martineau*, 2 vols. (New York: Dodd, Mead, 1902), bk. 2, chaps. 5, 6. Martineau was the brother of Harriet Martineau, who translated Comte's *Positive Philosophy*. Although the two had been quite close in their youth, Harriet's uncompromising positivism led to an estrangement.

Robertson had been a student of Bain at Aberdeen. After spending a year's study on the continent (where he became acquainted with German physiology and the work of Hermann Lotze) he returned to Aberdeen to assist Bain in revisions to *Senses and Intellect* and *Emotions and Will*. Although he was a student of Bain's and a supporter of empiricism in philosophy, he was far less doctrinaire than Bain. A correspondence with James McCosh prior to, and during his visit to the continent led him to become familiar with a very different tradition of thought.


Grote was a member of this Council and voiced his objections to the appointment on religious grounds. The Martineau appointment was defeated by a 5-4 vote, with the chairman of the Council, Lord Belper casting the deciding vote. Hugh Hale Bellot, *University College*,...
A second vote was taken on Martineau in November and once again he was defeated. On December 8 Robertson was elected to the chair. Ibid., pp. 340-41.


54. Ibid. Apparently articles on the case appeared in the Athenaeum and the Spectator. A special general meeting of the proprietors of University College was called to discuss the case, but they confirmed the action of the Council. Belot, University College, p. 341.

55. Martineau was in his sixties at this time and had considerable teaching experience. Robertson was twenty-four and had never taught. William Carpenter, who at this time was Registrar of the University of London, attributed his son's success on the University of London M.A. Branch III examination to Martineau's teaching. Bain to Grote, 26 July 1866. All correspondence between Grote and Bain, and Grote and Robertson, is in the George Croom Robertson Papers, University College Library, University College, London. James Estlin Carpenter earned a medal for his performance on the examination in 1866.

56. "Statement to the Proprietors," p. 2. The statement reported the objection to this explanation that such considerations represent "a kind of 'philosophical intolerance' almost as bad as religious intolerance." The objectors continued:

"the duty of the Council is to choose a particular teacher of the subject, not because he belongs to one or other of the two great metaphysical schools, but because he is the ablest Candidate that can be got." (Ibid.)

Council members replied to this objection that

"If it were acknowledged on all hands that Mental Philosophy is a subject on which no truth or certainty had yet been arrived at, it would be the duty of the Council to appoint no teacher at all...... It continues to be a branch of education, because it is believed that truth and genuine knowledge are involved in it. The directors of a place of education may be mistaken in their estimate of philosophical truth; but surely they are not to be blamed for acting conscientiously on their convictions." (Ibid.)

57. Ibid., p. 3. The Council noted that this principle applied particularly to the case of mental philosophy because it was in this subject that theological opinions were most likely to have an effect on teaching. In justification of their consideration of this matter they wrote:

"We put the case generally; but there is a strong a priori probability that a layman will be a more unprejudiced, and therefore a better teacher of Mental Philosophy than a minister
of religion; and, if so, it is no part of the duty of the Council to ignore the distinction." (Ibid.)

A more specific concern was that Martineau would continue to lecture on theology and moral philosophy at Manchester New College (which was alongside of University College in London) and that University College would become associated with the theological views he propounded there.

Several individuals felt that the defeat of Martineau represented the same sort of religious intolerance that University College had been established to avoid. One such individual, Augustus DeMorgan, the famous mathematician, resigned his chair at University College in protest to the handling of this case. Bellott, University College, pp. 341-42. For Martineau's view of the case see The Life and Letters of James Martineau, James Drummond, ed., 2 vols. (New York: Dodd, Mead, 1902), 1:408-14.


59. See chapters 7 and 8 below.


61. Grote, however, was more interested in the theological objection. He replied to Bain that

"I shall look at Martineau's two articles mentioned by you—if I can. But the question in regard to him must be argued mainly on the ground of Theology versus nontheology." (Grote to Bain, 27 July 1866.)

62. Bain to Grote, 2 August 1866.

63. Grote to George Croom Robertson, 10 December 1866. Actually this letter was a reply to one sent by Robertson expressing his gratitude "for all the trouble you have taken on my behalf." Robertson to Grote, 8 December 1866.

64. Ibid.

65. Ibid.

66. Ibid. Not, apparently, for lack of trying. On 18 November 1866, Grote wrote to Bain that "J. S. Mill turned down offer to have name placed on Senate of U. L."
Martineau reports that he wrote to Mill for a letter of reference. He noted that Mill's reply was very positive and

"said what could hardly fail to be decisive, if produced in evidence; but he added that, as he could not miss the opportunity of planting, if possible, a disciple of his own school in a place of influence, he must throw his weight into the scale of Mr. Croom Robertson's candidature, of whose competency he was well satisfied. His attestation, therefore, privately so generous to me, must be withheld from 'use.'" (Life and Letters of Martineau, 1:409)


68. The correspondence between Mc Cosh and Robertson is illuminating in this respect. See also Robertson, "Philosophy and Psychology," Mind 8 (1883):1-21.

Robertson was also willing to distance himself from Bain's psychological views. One of his students at University College later wrote:

"as the pupil of Professor Bain, and as representing in essential points that school of which he is the most direct and eminent outcome, the lecturer made the manual of Mental Science at once the most constant and most closely criticised subject of his hearer's study. In the course of years his treatment diverged more and more from that followed in the manual; but he not only continued to recommend it as on the whole best 'covering the ground,' but found in the criticism of it the best way of throwing his own position into relief as well as of sharpening the critical insight of the class." (C.A. Foley Rhys-Davids, "Introductory Note" in George Croom Robertson, Elements of Psychology, edited from notes of lectures delivered at University College, 1870-1892 by C. A. Foley Rhys-Davids [New York: Charles Scribner's Sons, 1896])


70. The topics included moral philosophy, political economy, modern history, general jurisprudence and laws of England. Students taking this examination could only earn a degree if they completed the mathematical or classical tripos.

71. "Regulations for Moral Sciences Tripos," Minutes of the Board of Moral Science Studies, 9 May 1860, 25 May 1860. Min. V.10. (This and all other documents pertaining to the Moral Sciences Tripos are in the University Archives, University Library, University of Cambridge.) The Cambridge Students Handbook recommended beginning the course of
study with Hamilton's Lectures, a recommendation that never would have been made at London.

At Cambridge the triposes were honours examinations, but a somewhat higher level of performance was required than on the London honours examination. The majority of students at Cambridge took the ordinary, or poll, degree or no degree at all. From 1851-1906 33% of Cambridge students took the Poll degree; 25% took no degree at all.

72. J. R. Tanner ed., The Historical Register 1910 of the University of Cambridge (Cambridge: Cambridge University Press, 1917). during this period. From 1861-1865 there were approximately eight candidates per year; from 1866-1867 the figure jumped to seventeen.

73. From 1870-1874 law and history were subjects in a joint tripos. After 1874 two separate examinations, the Law Tripos and the History Tripos were held.


75. In 1870 the Board instituted the practice of asterisking the works felt to be most important. Descartes, Hamilton and Bain's works were asterisked on this list. Minutes of the Board of Moral Science Studies, 7 May 1870. Min. V.10. The asterisked books in Moral and Political Philosophy were: Aristotle Ethics; Butler, Three Sermons on Human Nature; Stewart, Philosophy of the Active and Moral Powers of Man (Books I and II); Bentham Principles of Morals and Legislation and Principles of the Civil Code. Asterisked logic books were Mansel, Prolegomena Logica; Whateley, Elements of Logic; and Mill, System of Logic.


"... I have a great desire in all social relations for definite understandings; not knowing what road is best for humanity to walk on, I want all roads that claim to be roads to be well made and hedged in. This impulse may no doubt mislead to pharisaism and mere schematism that devitalises the courses that kind nature keeps--perhaps it has misled me." (Ibid., p. 396.)

77. Ibid. Topics as well as books were listed under each subject. The mental philosophy topics were:

"(1) Analysis and classification of mental powers and mental phenomena and the determination of their mutual relations; consciousness, sensation, emotion, volition, perception, memory, imagination, conception, judgment, reasoning.

(2) Laws of mental development and association of mental
phenomena.

(3) Subject, object and their relation in cognition; the origin and extent of knowledge; the criterion of truth and certainty.

(4) The categories or fundamental forms of the object of knowledge, their origin and mutual relations; space, time, substance, quantity, quality, relation, cause and effect.

(5) The principal modes of Being and their relations; mind, matter, and their different modes or qualities.

(6) Physiological concomitants of mental phenomena; organs of sense and nervous system.


There was a vast difference between the range of topics included in the curriculum at Cambridge and those included at the University of London. It was not until 1884 that London's curriculum was broadened. As we will see this reform was instigated by Cambridgians.

78. Sidgwick, "Philosophy at Cambridge," Mind 1 (1876):235-46. This article was part of a series which included reports on the state of philosophy at Oxford and the University of London. Robertson, as editor of Mind, hoped that the critical examination of philosophical studies in England might encourage greater professionalism in the field.

79. Ibid., p. 243.

80. According to Sidgwick, these tendencies stemmed from Cambridge's emphasis upon mathematics and physics. He cited the interest in Bacon as well as the interest in "hypothetical extensions of physical explanations to psychical phenomena" as derived from this emphasis. Ibid., pp. 244-45. The latter interest he wrote, accounted for the influence of Hartley in Coleridge's time and Herbert Spencer's influence now. Ibid., p. 245. The "aversion to the claims of Hegel and Schelling who did not appreciate Newton" also stemmed from this emphasis. Sidgwick noted, with apparent regret, that post-Kantian developments in Germany were excluded from the historical study of metaphysics. Ibid.

81. Ibid. As we shall see, political economy became an increasingly larger part of the moral sciences tripos in the 1890's, largely due to the efforts of Marshall and his success at attracting students to the field. See Reba Soffer, Ethics and Society in Victorian England. The Revolution in the Social Sciences, 1870-1914 (Berkeley: University of California Press, 1978), chap. 4.
CHAPTER 3

ALEXANDER BAIN:

1. BACKGROUND AND PLACE IN PSYCHOLOGY

Intellectual Biography

Alexander Bain was born in Aberdeen on 11 June 1818, the second son of an impoverished handloom weaver. His early education took place at a Dame School, where he learned to read and spell with the aid of the Bible. Religion played an important role in Bain's upbringing, although he rebelled against the staunch Calvinism of his father. During one period in his life, Bain regularly attended two or three services each Sunday. Nevertheless, at an early age he appears to have drawn a clear distinction between the intellectual content of religion and its emotional functions.

Bain left school at the age of eleven in order to help support the family but continued his education informally with the aid of evening classes at the Aberdeen Mechanics' Institution. At the Institute he was able to study mathematics and astronomy and to engage in debates concerning phrenology, a topic then popular with many of the Institute's members.

Despite the fact that Bain lacked a grammar school education, he was encouraged to apply for college by an acquaintance, Rev. John Murray. Murray tutored him in preparation for the Bursary competition.
and introduced him to Dr. Cruickshank at Marischal College./3/ Bain entered Marischal College in 1836 at the age of 18, and during the next two years was exposed to several important influences. While he had read David Hume's *Treatise of Human Nature* prior to entering Marischal, his reading of David Hartley, Thomas Brown and Dugald Stewart stimulated an interest in mental philosophy. These readings led Bain to adopt the habit of observing of his own mental processes, a procedure he later recommended as the central method for psychology./4/

In the summer following the first year of study at Marischal, Bain read Francis Bacon's *Novum Organum*, and was particularly impressed with the first book. This, in conjunction with his earlier reading of John Herschel, appears to have set him thinking about the art of scientific discovery and the problems of scientific method./5/ Finally these studies, combined with a reading of several works by Robert Hall, began to bring about a change in his religious views. Bain was already tending toward a position of dissent from prevailing creeds when a reading of the American Unitarian, William Ellery Channing, helped him to "dissolve the exclusive evangelicalism of my previous education, and to inspire an ennobling Theism, without regard to special embodiments."/6/ But, at the same time, Bain expressed concern about the effect of such an alteration upon his "religious warmth" stating that, "as I became more of an intellectual being, I was evidently becoming less emotional in the only form that emotion had yet possessed me."/7/ To guard against this tendency Bain sought to keep up "a high religious tone" by manifesting in his conduct what he had learned about the nature of duty./8/
Three Strands of Interest

By the age of twenty, the main lines of Bain's later intellectual development could be discerned—an interest in the scrutiny of mental processes; an interest in the origins and nature of scientific knowledge; and dissent from prevailing religious creeds—combined with a concern with the positive moral and emotional effects of religious conviction.

Intellect and creative genius

All three of these interests were developed further in his course work and reading over the next three years. In his last year at Marischal he attended Professor Glennie's class on Moral Philosophy. At this point Bain had already done considerable work on his own concerning the psychology of the intellect. The previous year he had prepared three lectures for the Mechanics' Institution entitled "Philosophical Genius, involving also the Theory of Discovery." Bain's autobiography indicates that the account given of genius rested primarily on the law of similarity that was to play such an important role in his later accounts of the intellect. Glennie's course, for which Bain later served as teaching assistant, consisted largely of an exposition of the Scottish school including Reid, Beattie and Campbell. According to Bain, the format served to deaden any interest students might have in moral philosophy. Six hours per week were spent in copying down a summary of the course, dictated by Glennie's assistant. The remaining nine were devoted to lectures by Glennie, which were read from a
Bain did not bother taking notes from these lectures and, for a time, found an alternate way of occupying himself during these sessions. Well practiced in the habit of analyzing his own mental successions, he decided to conduct such an analysis on the compositions of Robert Hall. Bain chose to occupy himself during the tedious hours of dictation with writing out "an analysis of the connection between each distinguishable thought or expression and the succeeding." The strain of this endeavor combined with the necessity of concealment, put Bain in a state of overexcitement and he was forced to retire to the country for a few days to recover. Nevertheless, he took up this exercise again outside of class sessions, this time examining Shakespeare. As Bain considered Shakespeare the "ne plus ultra of intellectual originality," this investigation, no doubt, furthered his understanding of the mental processes underlying creative genius. Shakespeare's work apparently confirmed Bain's view of the role of similarity in establishing certain trains of thought. The importance of this principle of association was amply illustrated in a early article of Bain's, "On Toys."

The article, which appeared in the Westminster Review in 1842, was chiefly an analysis of the operations of the mind involved in the use of toys. Such an analysis, Bain stated, is a necessary preliminary to the practical goal of arriving at better designed toys for people of all ages. Bain began by noting that there was a widespread passion for handling, or toying, and that unfortunately only children are granted systematic gratification of this passion. The source of the passion for
toying was sought in the principles governing the human mind. Two such principles were identified by Bain: (1) The principle of adhesion—that contiguous ideas will adhere; and (2) The principle of attraction—that ideas tend to call up other ideas that are similar. The first of these is, of course, the principle of contiguity that Mill had regarded as the sole principle of association. The second is the principle of resemblance that Mill had analyzed as a special case of contiguity. Bain reversed Mill's emphasis, stating that the attractive power of the mind is "the nobler of the two [principles] and its strength marks the greatness and originality of a mind."/14/

Bain also asserted that the processes underlying these two principles differ in their emotional effects. While the adhesive process carries no emotion with it, the attractive process yields, in itself, a flash of pleasure, a sparkle of delight. While the operation of the adhesive process is fatiguing, the operation of the attractive process is energizing because of the delight it consistently yields./15/

Bain employed this account of the human mind to examine the function of toys, and the principles that should guide their design and selection. Toys, he wrote, serve first of all to fill the mind with new images./16/ They also serve to elicit similar past images with the aid of the principle of similarity. In this latter role they are a twofold source of pleasure, eliciting the delight that accompanies the operation of similarity as well as reviving the pleasure associated with the past images./17/ Bain recommended that toys be selected to illustrate processes and manipulations likely to be important in later life so that
a large number of "useful images" might be stored up. For example, jointed toys are recommended as suggestive of purposive striving./18/ For older children, toys should provide an opportunity to imitate ideals which have stirred them, including such ideals as "great learning," "great genius," "industry surmounting impossibilities."/19/ Bain clearly felt that the pleasures of toying should be employed in the service of intellectual and moral growth of a particular kind.

Bain's article is of interest as it indicates several aspects of his later thought. In the first place, he indicated the value to the mind of a large store of useful images. This point was elaborated more fully in other articles, as we will see. Second, he placed emphasis on the need to cultivate the attractive processes alongside of the adhesive processes which are usually the focus of educators. Bain asserted that it is "play, sport, trifling, [and] mere passing of time" that provides exercise for the attractive power, "the other great faculty by which reasoning, imagination and invention are to be sustained."/20/ And, he added,

if the day ever came when the parent will see in the conversion of a forbidden, and formerly unnoticed article, into a toy as desirable an operation as the teacher sees in the comprehension of a truth, we shall then say that the science of education has progressed./21/

Another important aspect of Bain's thought was implied by this statement. Bain believed that by examining the workings of the human mind we can arrive at suggestions for improving human life./22/ Our knowledge of the human mind should be employed to give us power—the power to control the acts and feelings revealed by analysis. This view
of knowledge as power, placed Bain squarely in the tradition of utilitarian social thought./23/

**Theory of discovery**

During his course of studies at Marischal and during the subsequent year, Bain continued his scientific studies. In Professor Knight's botany course he was introduced to natural history and therefore a new domain of "high scientific thought."/24/ He attended Professor Clark's chemistry course and Allen Thompson's anatomy class./25/ Private studies included, among other things, reading Faraday's collected papers, work on a physical investigation of the nature and conditions of heat and examining the works of Justus Liebig./26/ These studies served to broaden Bain's range of scientific knowledge as well as pointing the way toward a theory of discovery. Bain's breadth of scientific competence deserves to be noted. He authored a number of papers on scientific subjects as well as writing textbooks on Astronomy, Electricity and Meteorology for Chambers' Educational Series./27/ When Professor Knight died suddenly in 1844, Bain was chosen to take over his classes./28/ Although Bain failed to obtain the permanent appointment to Knight's chair, he did briefly hold a post as Professor of Mathematics and Natural Philosophy in the Andersonian University of Glasgow./29/ In 1846 Bain was a candidate for the chair of Natural Philosophy at St. Andrews but was unsuccessful in his bid./30/ Prior to 1850, a career in natural philosophy appears to have been a possibility for Bain. However, with the completion of the Chambers' volumes, Bain's scientific zeal became focused solely on psychology.
After 1850, the academic appointments he sought were in Logic or in Moral Philosophy, not in Natural Philosophy./31/

One outgrowth of this early scientific work was the formulation of a theory of discovery, a theory that he claimed to have developed inductively in the course of examining the work of scientists such as Faraday. Bain's theory, like that of Bacon, stressed the need for a thorough classification of facts. Unlike most scientists of his day he downplayed the role of mathematics and experiment in scientific inquiry./32/ Bain's views on scientific method can be seen clearly in two early articles, "The Constitution of Matter," and his review of John Stuart Mill's Logic./33/

In the first of these articles, published in 1831, Bain investigated the structure of matter with an eye toward elucidating the proper method to be employed in such investigations or "how facts ought to be dealt with in order to rear general principles."/34/ The four rules he cited for the guidance of the mind are: (1) Express each fact in as definite a language as possible; (2) Express each fact under as many forms as possible; (3) Give separate expression and attention to every part into which a fact can be divided; (4) Extract from every fact all the conclusions that are necessarily bound up with it./35/

The first three of these rules were grounded in observations of the limitations and normal functioning of the human mind. Clear phraseology and concrete parallels were deemed necessary to aid the mind in fixing a clear conception of the fact (Rule 1). Next, we must "fit our view of things to our limited faculties." We must break complex facts into their
smallest components, because our minds display their greatest intellectual power under such conditions (Rule 3)/36/

Copious illustration of facts serves to force us to look at all aspects of a phenomenon, as well as aiding us in arriving at a more exact or suggestive view of the phenomenon. In Bain's view the employment of illustrative imagery plays the same role in scientific discovery as it does in rhetoric. He stated: "The same use that varied illustration has in expounding truths, it has in acquiring true-conceptions of facts."/37/

The final rule indicates Bain's concern with efficiency and economy in scientific endeavor. He stated,

considering the great expense of time and of materials attending the evolution of new experimental facts, one would think that those that are got would be most thoroughly read, and, if we may so express it, be swept of everything they can possibly teach./38/

Bain recognized that the "natural tendency of the imperfectly cultivated intellect" is at variance with the recommended process in the investigation of facts. For this reason, he insisted upon the need for specific training in the "accurate method" and recommended that universities establish instruction of this sort./39/ The rationalism of the utilitarians--the belief that progress will come from employment of the proper tools--appears clearly in this early paper of Bain's./40/

Bain's inductive view of scientific method was developed prior to the publication of Mill's _Logic_; indeed, prior to any correspondence with Mill. Their common interest in induction as a method of scientific investigation may stem from their common interest in the works of John
Bain did not become personally acquainted with Mill until John Robertson urged him to write to Mill in 1841. The two exchanged several letters during that autumn and winter. Bain first met Mill the following spring and the two quickly became friends and collaborators. During the summer and autumn of 1842, Bain assisted Mill in the final revision of the Logic manuscript. 

Bain's work on the Logic manuscript placed him in an ideal position for preparing an early review of the work—a position fully exploited by Bain. Mill felt that the review, which appeared in the Westminster Review in May 1843, was over-complimentary. Even Bain noted that "it was referred to by different critics as a eulogy rather than a review." Whether eulogy or review, the article was primarily expository, highlighting the main points of Mill's discussion with a special focus on the account of induction. Bain commenced the review in an inspirational fashion:

To arrive at truth is a pressing business of every man's life. Each one of us has infinite interests at stake, which must render us anxious to obtain the truest information about everything that can affect them. To have true knowledge and firm faith with reference to all things important to us, is our most desirable acquisition. To judge between true and false, to decide on the evidence for assertions, is an avocation which no human being can get rid of, even for a short time, and which every earnest mind feels to have an indisputable precedence among the common engrossments of life. 

As we have already seen, Bain considered that an accurate method of investigation was an indispensable aid in the search for truth.

We can go to a certain length in everything by blind impulses, and keen intellects of good experience may go to a great length, but this has its limit, and we may proceed a great way beyond that limit by the help of a good well-conceived principle.

In addition, however, we need "accurate and general views of what
constitutes truth and evidence." And this, he said, was what Mill's work provides. Furthermore, it was the first attempt to construct a philosophy of truth "by a systematic generalization of the methods and processes of modern positive science," which of course was the very approach Bain had earlier adopted.

In addition to the intellectual service provided by this work, Bain praised the "moral efficacy" of the book. "As a philosophy of evidence," he said, "it will naturally tend to invigorate that Faith in Evidence, which is the most essential active accompaniment of man's reasoning faculties." "Without faith in proof," he continued, "reason is but a wise monarch with a nominal sceptre."

Mill's extensive discussion of the sufficiency of evidence, replete with positive and negative examples, he wrote, must serve to "loosen the roots of prejudices and increase the active power of truth." Here Bain's epistolary adulation of Mill manifested itself most strongly. Not only does the work serve to strengthen "Faith in Evidence," but the character of the author also exemplified "this great moral lesson." Bain eulogized,

Throughout all his writings there is manifest a purity and intensity of devotion to truth, a susceptibility to every breath of reason, that have a most refreshing and delightful effect upon the reader. He [Mill] is a preacher of the highest faith of the human mind.

In addition to displaying Bain's sycophantic bent, this passage suggests that Bain had transmuted some of his earlier religious zeal into intellectual and moral zeal and that he fastened this zeal onto the promise of inductive method. A closer look at how Bain's shift in religious belief influenced his later thought should clarify these
matters.

**Shift from religion to morality**

At quite an early age Bain's faith had been assailed by intellectual doubts, focusing in particular upon the doctrine of salvation. By 1838, Bain had adopted a theistic position under the influence of the works of the American Unitarian, William Ellery Channing. His faith, however, continued to be eroded intellectually. At Marischal, a course on Christian Evidences led him to doubt the authenticity of the Old Testament and in 1843 he read David Friedrich Strauss' *Das Leben Jesu*. Like Strauss, Bain denied any intellectual import to religion but savored its emotional effects. Bain repeatedly expressed concern about the emotional effects of his intellectual dissent from religious creeds and became determined to preserve that religious emotion through devotion to moral duty.

Bain was a member of the Aberdeen Theological Society until the winter of 1842 when he delivered two final addresses on "Faith" and on "Moral Greatness." Subsequently, a small society consisting of fellow classmates was formed for the reading of papers and discussions, providing a substitute for the Theological Society. Two years later Bain introduced the works of Comte to the members of this group. Bain said, "Such studies had, no doubt, the effect of marring the orthodoxy of all concerned, and had to be kept in a great measure secret." It appears that the effect upon Bain was to further encourage him to adopt a scientific orthodoxy to replace his religious one.
Comte's classification of the sciences was a wonderful advance upon anything known at the time; the three stages being very suggestive. The interpolation of the metaphysical stage between the theological and the positive, helped to express certain phases in all the sciences, although doubtless, the vital contrast in the progress of knowledge was the theological and the scientific in its most perfect form.\(^{59}\) [underlining mine]

One other aspect of this shift in religious views should be emphasized: Bain described this shift in terms of an antithesis between intellect and emotion. He wrote that "as I became more of an intellectual being I was evidently becoming less emotional."\(^{60}\) The schism between intellect and emotion and the transmutation of the latter into moralism was also evident in James Mill.\(^{61}\) I would suggest, without insisting upon the point, that this was one of the roots of the overemphasis upon the intellectual functions characteristic of associationist psychology. It is clear that Bain, like other associationists, found the analysis of emotions highly problematic.

In examining Bain's work, we will be able to discern quite directly the impact of his interest in creative genius and the method of discovery. The impact of his attitude toward religion is less easy to discern. Bain's intellectualism and moralism may stem from this source, or it may simply have been corroborated by it. Regardless of the impact upon his theoretical formulations, Bain's religious views had a great impact upon the course of his career. In numerous cases his religious views served as a bar to academic posts.\(^{62}\) It was not until 1860 that Bain, at the age of 42, obtained a regular academic post.
During the twenty years between his graduation from Marischal and his appointment to the new chair of Logic at Aberdeen University, Bain worked at a variety of tasks. From 1841 until 1844 he served as Professor Glennie's assistant in the Moral Philosophy class at Marischal College. As Glennie was frequently ill, Bain was responsible for the lectures as well as dictation, and took the opportunity to intersperse some of his own ideas into the prepared material. /63/

During part of this period he was engaged in the work in Natural Philosophy that has already been described. However, economic necessity, rather than vocational commitment, appears to have been the primary motivation for this work. By 1844, Bain had committed himself to the study of the human mind and was engaged in working up preliminary versions of his later psychological work. After completing the meteorology text for Chambers he began work on articles on Language, Logic, the Human Mind and Rhetoric which were to appear in Chambers' Information for the People. /64/

In 1847 he settled in London. Through Mill he had met Edwin Chadwick who offered him work with the Metropolitan Sanitary Commission. Bain's position involved preparing synopses of data collected by the commission, "which Chadwick wished to manipulate for his own purpose." Bain cooperated and "drew up a summary and report of the conclusions that he wanted." /65/ With the passage of the Public Health Act of 1848, Board of Health was formed and Bain was appointed assistant secretary. He found this position quite suitable because, like John Stuart Mill, he
was able to complete much of his literary work at the office. The outbreak of cholera between March and October of 1849 made it impossible to continue this convenient arrangement, as the office work increased substantially. The intensification of Chadwick's battle over the abominable condition London's water supply made the situation even worse. Bain left his post on the Board in March 1850.

Over the next several years, he wrote various pieces for the brothers Chambers, edited a volume on Paley's Moral Philosophy and resumed his work on psychology. From 1851 until 1854 he lectured at Bedford College for Women on physical and political geography and psychology. The Senses and the Intellect was published in 1855 and Bain turned to the completion of the final draft of The Emotions and the Will. This work was published in 1859, aided by the patronage of John Stuart Mill and George Grote.

The publication of these two works signalled a turn in Bain's fortunes. In 1857 he was appointed an examiner in Mental and Moral Science at the University of London, and in 1858 an examiner in moral science for the Indian Civil Service. The University of London appointment proved to be quite profitable for him. Bain proposed a revised scheme of subjects for the Logic and Moral Philosophy degrees which was adopted by the Senate in 1858. The adopted scheme ensured ample sales of his two psychology works as well as Mill's Logic for the next thirty or forty years, a fact that served to enhance both his and Mill's reputations.
In 1860 the two Aberdeen Universities merged and a new Chair of Logic was established under the patronage of the crown. James McCosh, professor of philosophy at Belfast, was his chief rival and had the full support of the church. However, the final decision rested with the Home Secretary, Sir George Cornwall Lewis, whose most intimate friend happened to be George Grote. Both Grote and Mill discussed matters with Lewis, and Bain was appointed to the chair in September 1860.

Bain's Place in Psychology

Contributions to Psychology

Although we will examine aspects of Bain's psychological works in more detail, a preliminary overview of his contributions to psychology will be useful. This overview will be followed by a discussion of contemporary assessments of Bain and by my own alternative assessment.

Methods of Analysis

Both of Bain's major works, Senses and Intellect, and Emotions and Will, were characterized by the natural history approach to mental states. This method, involving careful observation and systematic classification, predominated especially in the sections on the senses and the emotions. This approach to mental states was adopted as a necessary preliminary for further analysis of these aspects of mental life.
Bain's treatment of the intellect, on the other hand, was conducted along more analytic lines; that is, in terms of the laws of association. While the reductive method of Hartley and James Mill was employed, Bain expanded the realm of sensations which enter into such associations. The addition of muscular feelings to the coterie of sensations employed by Mill, enabled Bain to provide revised accounts of phenomena not adequately treated by the associationists.

Physiological Underpinnings:
The Muscle Sense and Spontaneity

Another methodological departure was seen in his account of the will. While Bentham was concerned with the consequences of conduct and James Mill focused on the antecedents of conduct, Bain provided an account of the origins of action. Furthermore, Bain chose to prop up this account with physiological underpinnings. The role of these physiological underpinnings deserves some attention. As has been already mentioned, the fundamental elements of the mind—sensations and feelings—were discussed in relation to physiological findings. In addition to describing the senses of smell, taste, touch, hearing and sight, Bain described a sixth sense—the muscular sense. This sense encompassed the feelings connected with the movements of the body and the action of muscles.

Bain argued that these muscular feelings must play a central role in any account of the mind, because movement preceded sensation and because action is a more intimate and unseparable property of our constitution than any of our sensations, and in fact enters as a component part in every one of the senses, giving them the character of compounds, while itself is a simple and elementary
While Bain distinguished these mental elements from sensations, they were given the same functional role as sensations in his account of the mind. This additional set of building blocks enabled Bain to provide an improved account of action, and a thoroughly mechanized account of the will. Furthermore, by attaching muscular components to all our ideas, Bain greatly simplified the task of explaining the control we have over our thought processes. The mechanical account of the will he had developed to explain voluntary action, could also suffice for the explanation of voluntary thought, since thinking is simply the "ideal form" of muscular activity.

The precise origins of Bain's doctrine of muscular sensibility are not entirely clear. James Mill and Thomas Brown had both described muscular sensibility and Bain was familiar with their work. Bain suggested that he drew the notion from Carpenter's Human Physiology which he used in developing an early draft of the Senses and Intellect in 1844, although he appears almost equally indebted to William Hamilton's formulations.

Certain other of the physiological notions he adopted, were developed from fortuitous encounters. A few days spent at Sharpsey's lectures yielded the idea of "the doctrine of spontaneity as a necessary supplement to the recognized circle of the nervous current from sense to movement." This notion provided the key to Bain's account of the origins of the will, enabling him to enliven the stipulated antecedents of the will—pleasure and pain. Despite such a lucky find, Bain
continued to have problems developing his account of the will. /84/

**Association and the intellect**

Another important aspect of Bain's work is his account of the intellect. Although Bain maintained that his account proceeded wholly along associationist lines, he made several significant departures from the associationism of James Mill. In the first place he postulated three fundamental attributes of the intellect—discrimination, agreement and retentiveness—as contrasted with the sole property postulated by James Mill—receptivity. /85/ In later editions of the *Senses and Intellect*, these fundamental attributes were linked to particular laws of association, presumably in order to provide a more secure foundation for these laws. /86/

Bain's account of the laws of association also differed from that given by Mill. Similarity, or the law of resemblance was not reduced to contiguity, but was given a central role to play in the account of the mind. /87/ Two additional laws were proposed although each rested on the fundamental principles of contiguity and similarity. The law of compound association was formulated to account for more complex mental phenomena, such as conflict between competing ideas. /88/ The law of constructive association represented Bain's attempt to account for creative genius. /89/ Bain's interest in inventive or creative genius played an important role in shaping his account of intellectual phenomena.
A further conceptual departure was the adoption of a tripartite view of the mind. Bain argued that Mill's analysis of the mind into intellectual and active powers produced an inadequate and confused treatment of feelings and will. Bain also argued that Mill had failed to draw clear distinctions between emotional and intellectual components of sensations and ideas./90/ These problems, Bain felt, could be remedied by adopting a tripartite view of mind; that is, by regarding mind as involving intellect, feeling and will. This conceptual shift represented an attempt to elaborate the associationist account of the feelings and will./91/

One of my theses is that Bain's work represented an attempt to extend, elaborate and refine the Utilitarian-Associationist accounts of several problematic phenomena. I will argue that Bain seized upon various physiological doctrines in order to facilitate this enterprise. The "physiologizing" of psychology, I maintain, was secondary to Bain's goal of salvaging associationist account of mind. I will support this argument in part, by showing that physiological "explanations" were appealed to repeatedly at the weakest points of the associationist doctrine./92/ In maintaining that physiology was adjunctive, not central for Bain, I am contravening the usual interpretation of Bain's contribution. Bain has been almost unanimously praised for having been the first of the mental philosophers to have recognized the necessity of a physiological foundation for psychology. I would argue that such interpretations of Bain represent Whiggish historical attitudes and a failure to look closely at Bain's own work. Before turning to my revised account of Bain we should look more closely at several accounts
The Received View of Bain

Contemporary accounts of Bain usually praise him for having anticipated some aspect of modern psychology. The aspect most often singled out is his attempt to ground psychology on physiology, rather than on the older mental philosophy. Such assertions ignore the fact that Bain's psychology was thoroughly grounded in a particular brand of mental philosophy: associationism as united with utilitarianism. Furthermore, these assertions are generally made by individuals who eschew the task of analyzing the relevance of Bain's physiology to his psychology and to the physiology of his time.

E. G. Boring's assessment of Bain is representative of the standard historical account. In his chronological history of psychology Boring wrote "Bain comes nearer to being a psychologist through and through than any person we have yet studied."/93/ What this meant for Boring was later clarified by his description of Bain's "physiological psychology" as an advance over earlier attempts because it was based upon the "result[s] of scientific discovery." Boring wrote that "in the nineteenth century . . . scientific physiology developed rapidly and physiological psychology within it . . . . It was pretty obvious whither psychology was tending."/94/ Bain's merit, it seems, was to pick up the scent on the trail. Boring wrote:

He[Bain] represented the culmination of associationism and the beginning of its absorption into physiological psychology . . . . His careful scholarly work is a worthy monument to mark the turning point of psychology from empirical associationism to physiological experimentalism./95/
Several points must be made concerning Boring's assessment of Bain. In the first place, the Whiggish bias is blatant. Bain along with Spencer, was singled out to represent British psychology at the end of the nineteenth century. The individuals who followed Bain—George Croom Robertson, James Sully, James Ward and George Stout—are treated summarily. Furthermore, the contributions that Boring singled out for praise are not necessarily the most original contributions of Bain. And his analyses of these contributions are riddled with errors that indicate a very cursory study of Bain on Boring's part. For instance, Boring asserted that, "It is ... probable that he did not know Johannes Müller's physiological psychology," despite the fact that Bain quoted a large number of passages from Müller in both Senses and Intellect and Emotions and Will./96/

Again Boring claimed: "An intellectualistic psychology, like associationism, had not tended to raise the problem of the will. For several reasons, however, Bain had to face the problem." He then cited the rise of scientific materialism and the doctrine of the conservation for energy as the source of Bain's interest in the will./97/ On the first point, as we have seen, Boring was simply wrong; all the thoroughgoing associationists provided an account of will. Furthermore, the alliance with utilitarianism made an account of the will central to associationist accounts of the mind. Bain, writing in this tradition, could not avoid treating the will.
Finally, Boring's view of Bain's work as the touchstone of a transition in psychology "from empirical associationism to physiological experimentalism" distorts the history of British psychology. Bain's work did not signal the beginning of an era of physiological experimentalism in Britain, a fact which even Boring noted. However, Boring accounted for this in terms of the personalities of subsequent psychologists and institutional factors, rather than in terms of problems inherent in Bain's own formulations. While the former factors may have played some role in retarding the introduction of experimentation into British psychology, I will argue that the pertinent factors were intellectual ones stemming from the tasks envisioned for psychology by the Utilitarian-Associationist thinkers.

L. S. Hearnshaw has also described Bain as a transitional figure between mental philosophy and scientific psychology, although Hearnshaw has a broader conception of scientific psychology than did Boring. Hearnshaw described Bain as having, "moved part of the way from the older intellectualism and associationism to the activist and hormic psychologies which supplanted it."/98/

Hearnshaw, unlike Boring, has at least mentioned aspects of the intellectual context within which Bain made his contribution. He has pointed out that at mid-century (1) the scope of psychology was clearly defined, (2) the requirements of scientific method were better understood and (3) the physiological foundations of psychology were beginning to be laid, and he claims that Bain took full advantage of these new developments./99/ While Hearnshaw's first point is debatable,
Bain did have a clearer understanding of scientific method than had many of his predecessors and recent physiological findings had indicated the potential importance of such scientific procedures for psychology.

Despite Hearnshaw's greater sophistication, his description of Bain's psychology as the "first systematic physiological psychology based upon a reasonably sound physiology," sounds remarkably similar to that given by Boring. /100/ Hearnshaw's analysis of Bain is considerably more detailed and much more accurate than that provided by Boring. He emphasizes the conceptual advance made by Bain, that is, "his insistence on the value of physiology," rather than any detailed contributions. However, Hearnshaw exaggerates somewhat when he claims: "it would not be a misrepresentation to say that for him all psychology was in principle physiological." /101/

Hearnshaw's account is considerably more subtle than that provided by Boring. As the above quotations indicate, he does not commend Bain for establishing physiological psychology, but only for having proposed the program. Other historians of psychology praise him on the same grounds. Gardner Murphy wrote,

In Bain we have for the first time physiological explanations sufficiently elaborate to be taken seriously. The psychologist was beginning to think of experimental physiology as fundamental to his science. /102/

Robert Young noted the precedent setting character of Bain's chapter on the nervous system saying

No matter how little relevance it had to the rest of the work or how little it actually explained the psychological processes under discussion, future writers almost invariably included a chapter on the structure of the nervous system. /103/
While there is nearly unanimous praise for Bain's incorporation of physiology into psychology these authors differ in their assessment of the nature of the contribution. Several possibilities exist. The contribution might be regarded as an empirical advance, radically extending our understanding of the human mind. None of these authors appears willing to make that strong a claim for Bain's contribution. Alternatively, the contribution might represent a conceptual advance, pointing the way toward a new approach to the mind. Boring, Hearnshaw and Murphy all seem to subscribe to this view, although they differ in the degree to which they regard this conceptual breakthrough as revelatory. Yet another interpretation of Bain's contribution is indicated in the passage quoted from Young. Bain may simply have established a convention followed evermore by psychology textbook writers. If this is the case, much of the hero-mongering associated with Bain is inappropriate. What needs to be done, and what has not been done by the majority of those who praise Bain for incorporating physiology into psychology, is to examine the relevance of his physiology for his psychology and to assess how well the physiology served to explain the psychological processes under discussion. In other words, we must examine whether Bain's real contribution was progressive, regressive, or neutral, in terms of the actual problems he posed for psychology.

I have found only two authors who have attempted such a task: J. A. Cardno and Roger Smith. Cardno examined Bain's general methodological approach as well as his treatment of doctrines concerning the (1) muscular sense, (2) cohesion of ideas in association and (3)
consciousness. Cardno concluded that while Bain had envisaged the possibility of a physiological psychology, he was not consistently physiological either with regard to data or with regard to methods. Cardno asserted that "on the level of accounting for actual behavior, of relating mental events, as reported, to each other and to physical events," Bain's work produces "an impression of greater physiological tendency than is justified on analysis."

With regard to Bain's specific doctrines, Cardno's evaluation was mixed. He concluded that the treatment of consciousness was non-physiological "since the physical element in his treatment, though quantitatively massive to a surprising extent, is subordinate." Although he claimed that Bain's treatment of the association of movements was physiological he denied that his account of the association of ideas was. The most consistently physiological portion of Bain's work, Cardno asserted, was his treatment of the muscular feelings.

Roger Smith also focused upon Bain's treatment of the muscular feelings in his work on nineteenth century psychophysics, although he also made some general comments about Bain. Smith wrote:

Bain profoundly changed the traditional associationist psychology. First, he integrated it with sensory-motor physiology, and second, he recognized the sense of activity as primary in cognition and correspondingly emphasized the dynamic nature of perception and behavior.

Smith's analysis is considerably less superficial than others. Bain is not simply commended for integrating physiology and psychology, but for integrating a dynamic physiology into a tradition that had been
passive. The doctrines that Smith identifies as central to this "dynamic physiology" are Bain's doctrine of spontaneity and the feelings-of-innervation account of muscular sensibility. Smith pays close attention to this latter account and claims that it led Bain to formulate a dynamic theory of perception. The doctrine asserts that one form of muscular sensibility—our feeling of effort or movement—is derived from an outgoing motor current whose origin is central. According to Bain, it is this physically generated feeling which underlies our consciousness of all activity. Because it enters into all perceptions by association, all our ideas, like all our impressions, have a muscular component.

Smith does note that the feelings-of-innervation theory was just one possible account of the source of these muscular feelings and that this account was eventually superseded. He also recognizes that extra-scientific considerations led Bain to select this particular account of the muscular feelings. Nevertheless, Smith argues that the account was consistent with the physiology of the 1850's and 1860's and therefore that Bain was employing sound physiology. What Smith has overlooked, or not emphasized, is that Bain employed this doctrine to provide an account of higher mental processes, and ultimately a motor theory of thought. This "dynamic" theory of thought provided the basis for Bain's non-mentalistic account of attention and his early account of the mechanism underlying sympathetic action. I maintain that this doctrine of thought was formulated, in part, to deal with problems that had arisen in the Utilitarian-Associationist tradition. Furthermore, while the feelings-of-innervation account might be regarded as "sound
physiology" during this period, a motor theory of thought could not be. It was not until the 1870's that physiological evidence existed that would warrant the application of the sensory-motor paradigm to higher mental processes.\footnote{118} Although I disagree with Smith's conclusions regarding Bain's employment of the feelings-of-innervation account of muscular sensibility, I find the type of analysis he provides extremely valuable.

In this work I will attempt to contribute more of this type of analysis by selecting a few psychological processes for examination. A fuller examination of the role of physiology in Bain's psychology is an important desideratum. My purpose in conducting such a partial examination is to raise questions concerning the value of a physiological psychology in late nineteenth century Britain. The outcome of this examination will not serve to topple Bain from his pedestal but will simply shift him to a lower one, so that we may view more clearly the merits of the individuals following him in British psychology.

As I have already mentioned, Boring gave short shrift to those who immediately followed Bain in Britain, presumably because they lost the scent of the trail to a scientific physiological psychology.\footnote{119} Hearnshaw has also faced the problem of why, if Bain was a transitional figure, the generation that succeeded him did not follow the path he identified. Hearnshaw employs the device of a \textit{deus ex machina} to account for the lacuna in scientific psychology following Bain. The new awareness of German philosophy, Hearnshaw asserts, had
the effect of ushering in a dark age for scientific psychology. /120/ Concerning the fate of Bain's psychology he said,

His true successors were Thorndike and the American learning theorists. Indeed Bain's psychology has not untruly been referred to as one of the main foundation stones of contemporary learning theories. /121/

And he added, somewhat wistfully, "Perhaps British psychology would have advanced more rapidly and more surely if it had more closely followed Bain." /122/

While Hearnshaw has not let his high opinion of Bain completely blind him to the contributions of subsequent thinkers, I would argue that a closer examination of Bain would also lead to alterations in his account of British psychology. A critical account of Bain as the culmination of the Utilitarian-Associationist tradition sheds considerable light on the reaction to empiricism and associationism at the end of the nineteenth century. Problems within this tradition, problems that were not solved (and in some cases were intensified) by Bain's adoption of physiology, were the source of the reaction against empiricism and associationism. The imported German philosophy merely provided the tools for articulating a critique of a tradition which was not even able to succeed with the tasks it had set for itself.

Other contemporary accounts praise different aspects of Bain's psychology but conform to the Whiggish tendency by focusing on those aspects most relevant for contemporary psychology. Bain's emphasis on the role of movement or action is mined for its bearings upon pragmatic philosophy and behaviorism. /123/ Bain's theory of belief has been discussed as important for pragmatism and for American
Among other things, Bain has been described as an early differential psychologist, an early social psychologist and as a forerunner of modern educational psychology. Some of this work is excellent and all of it sheds some light on an important figure. Most of it, however, suffers from a tendency to elevate Bain to a status that he was not accorded by his contemporaries.

In what follows, I will argue that Bain's contribution must be viewed within the context of the Utilitarian-Associationist tradition I have described in Part I. In adopting the assumptions of that tradition, albeit with necessary revisions, Bain laid himself open to the attack upon empiricism and associationism that was made on both philosophical and social grounds at the end of the nineteenth century. Furthermore, in appealing to physiology in support of his assumptions he laid himself open to additional attacks. I will begin the task of assessing the degree to which these attacks were justified. In choosing to examine Bain within the context of the Utilitarian-Associationist tradition and the critical perspective of the succeeding and overlapping generation I am, of course, introducing a new set of biases. I would defend myself, first of all, by arguing that my approach is historically sounder. Furthermore, as biases are inevitable, mine at least have the merit of being new biases. The one account of Bain that comes close the perspective I will develop is that provided by G. S. Brett in his invaluable History of Psychology. In Brett's view, Bain represented the last pure example of a tradition which "looked to sciences that were not "mental" for guidance in those that were." Locke and Hume had looked to Newton, Hartley to theories of sound, James Mill to chemistry
and finally Bain, "more fortunate in his choice," looked to the "natural philosophy of the body."/128/ Brett's opinion was that Bain failed in this attempt because he failed to take the organism as his unit of analysis. On the other hand, he said that Bain helped a whole generation of writers to think out the philosophy of the organism and see not only what they could do with it, but also what it could not do for them./129/

While I will not be tracing Bain's influence along the same lines as Brett, his comment is important as indicating that genuine contributions need not always be positive. I would suggest that we might learn much more by examining the shortcomings of Bain's psychology than by focusing superficially on his "seminal ideas."

The Utilitarian-Associationist Tradition and Bain

In what respects does Bain's work represent a continuance of the Utilitarian-Associationist tradition? To answer this question it will be necessary to examine his position vis-a-vis the central problems of the program. A brief summary of these problems and the constraints upon what could be regarded as an acceptable solution within the Utilitarian-Associationist tradition is in order.

The Utilitarian-Associationist program involved (1) a proscription against the postulation of innate mental ideas or powers and (2) the insistence that all knowledge is derived from sense experience. In addition, (3) action was to be accounted for on a hedonistic theory of motivation. Finally, those adopting these tenets argued that (4) a science of the human mind must be developed to provide the basis for epistemology, ethics and a program of social reform. I will examine
First, individuals within this tradition were adamantly opposed to the postulation of innate mental ideas or powers. Although this position was related to their empiricism and phenomenalism, it drew greater force from their religious, social and political views. This major negative precept stipulated that no innate ideas were a component of knowledge; that no ego or self directed action or thought; and that no innate moral sense guided our judgments of right and wrong. However, this tradition also accorded a high status to introspective evidence and we have direct evidence of the operation of some such powers. A central problem for the Utilitarian-Associationist tradition was accounting for such powers on an experiential basis.

Bain shared the firm opposition to the postulation of innate powers and chided John Stuart Mill for implying that we might need to assume some such powers. As we will see, he adamantly opposed the postulation of an ego or self. Instead he adopted certain physiological doctrines in order to provide a mechanical account of the purposive character of our thought and action. Bain made a new contribution to the Utilitarian-Associationist program by providing an experiential account of the development of conscience as an alternative to the doctrine of the moral sense.

The insistence that all knowledge is derived from sense experience is the converse of this constraint. Several problems are related to this positive thrust of the Utilitarian-Associationist program. Because all knowledge must be based upon sense experience they denied that there
were such things as necessary truths—truths whose validity could be known by reason alone. This tradition focused instead upon the feeling of conviction accompanying such "truths," and formulated accounts of the development of belief based upon experience.

The empiricism of these thinkers created its own problems related to the validity of knowledge. If knowledge based upon sense experience is to be valid, our ideas must represent things in the objective world and the order of our ideas must represent the order of things in these objective world. The existence of these epistemological problems sheds light on the Utilitarian-Associationist insistence that ideas are derived directly from impressions and that the laws of association ensure that the order of ideas follows the order of impressions./133/

As we will see, Bain made contributions relevant to both these problems. One of his central contributions was the formulation of a new account of belief, an account which, at least in his earliest formulation, rested upon his physiological doctrine of spontaneity./134/ His organic theory of memory (retentiveness) along with his doctrine of identical seats for impressions and ideas buttressed empiricist claims about the validity of knowledge./135/

In other respects Bain adhered to the tenet that all knowledge is derived from sense experience, albeit with some restrictions. Like his predecessors, Bain adopted a phenomenalist perspective with knowledge restricted to sensations including, "mental impressions, feelings or states of consciousness resulting from the action of external things on some part of the body."/136/ An important class of feelings that he
gave new emphasis to were the muscular feelings. According to Bain, most sensations have a muscular component. Our complex sensations of sight, for example, consist of sensations from light compounded with sensations derived from the movement of the eye muscles. Such muscular feelings, Bain claimed, must be postulated to account for emotional and volitional phenomena not treated adequately in terms of sensations derived from sense organs. Bain adopted phenomenalism with a new twist, emphasizing the role of active responses to sensations, as well as sensations themselves. This new twist also facilitated the formulation of an account of how our knowledge of the external world arises from consciousness of our own activity and his distinctive account of belief.

On the other hand, Bain cannot be regarded as a thoroughgoing experientialist in the same way as James Mill and John Stuart Mill. In an 1889 paper in Mind, Bain wrote:

>a too literal grounding on experience will not suffice to establish what is essential even to empiricism itself. Either experience must have a liberal rendering, or there must be taken along with it something that will seem to savour of the a priori or intuitive./

Bain held that there are instinctive components of behavior: we come into the world with some primitive endowments. This revision led him to downplay the plasticity of the human mind. However, Bain's account was consistent with empiricism for two reasons. First, he held a Lamarkian view on the inheritance of acquired characteristics. This enabled him to maintain that such primitive endowments had their origins in experience, although not necessarily in the experience of the particular individual. Second, any notions suggested by the operation of such
faculties must be verified with reference to experience. Bain wrote,

Intuition, to whatever length it may be suggestive is in no case valid without the confirmation of experience. The empiricist may not quarrel with intuitive or innate ideas, his quarrel is with innate certainties./141/

The third tenet of the Utilitarian-Associationist tradition rests upon their hedonistic account of motivation: the springs of all action are simply pleasure and pain. Human beings were depicted as acting according to self-interest. Various means of making self-interest correspond to the social good were proposed and these included legislative as well as educational reform. Bain maintained that pleasure and pain were the central, but not the sole sources of action. Other springs of action that were postulated included spontaneity, which he used to enliven the Utilitarian-Associationist account of volition, and, in special cases, ideas./142/ Bain retained the utilitarian belief that rational action was guided by the pleasure and pain-value of the outcome. His view of the goals of moral conduct was utilitarian to the core, as was his insistence that it is the fear of punishment that serves as the most powerful sanction of moral conduct./143/

The final tenet describes the programmatic thrust of the Utilitarian-Associationist tradition. A theory of the human mind was to be formulated based upon the model of the sciences. This theory should establish how all our knowledge is built up from sense elements in a precise fashion, i.e., according to the laws of association. This theory of the human mind was to provide the foundation for empiricist epistemology and utilitarian ethics as well as a program of social reform. Bentham and the Mills believed that social reform could be
rationalyzed with the aid of a scientific account of the human mind.

Methodologically, Bain's views meshed with this program. Early on he had argued that scientific analysis is reductive analysis, we must reduce the phenomenon to its smallest, most fundamental elements. With regard to the human mind these elements are sensations./144/ The laws of association are used to derive all complex mental phenomena from these basic elements. Bain retained a phenomenalist view of causation, consistent with his empiricism./145/

Bain's incorporation of certain physiological doctrines into the associationist framework is often cited as indicating a break with mental philosophy, but it could just as plausibly be interpreted as harkening back to the origins of thoroughgoing associationism. David Hartley had also buttressed his theory of mind with a theory of nerve functioning./146/ I will argue that Bain's assertion of the thoroughgoing concomitance of mind and body was a hypothesis proposed to account for aspects of mental functioning that were particularly problematic given the Utilitarian-Associationist tenets. Furthermore, while appealing to physiological evidence when appropriate, Bain asserted the primacy of the introspective method for psychology./147/

Bain wrote:

Although the science of mind comprehends many phenomena of an objective character, namely all the outward displays of human action, thought and feeling, it is nevertheless essentially based on the consciousness possessed by each of our own mental states ... An abundant recollection of subject states--of feelings and ideas considered as to their mental sequences--is necessary to the mental philosopher./148/

With regard to views concerning the proper method for psychology, Bain
fit squarely into the Utilitarian-Associationist tradition.

Bain accepted the view that the solution to philosophical and social problems rests upon a prior examination of the human mind. In some respects he went further than the early Utilitarian-Associationist thinkers. Bain argued that certain philosophical problems—the problem of free will, the nature of the moral sense, and the source of disinterested action—can only be adequately dealt with by a scientific psychology. These philosophical problems were translated into empirical problems—matters for psychological investigation—within Bain's system. Such a development was entirely consistent with the thrust of the Utilitarian-Associationist program.

Finally, Bain shared the utilitarian optimism concerning the application of scientific method to social problems, and the central role played by the sciences of the human mind in that endeavor. While psychology "is not a very advanced science . . . and is unable, therefore, to confer any great precision on its dependent branches, whether purely speculative or practical," it still should lend aid to practical endeavors since "the highest evidence and safeguard of truth is application." The "filial dependents" identified by Bain included education, aesthetics, eudaemonics, sociology and ethics. In these fields, he said, "The facts are nearly all around our feet; the question is how to classify, define, generalize, express them." In another work he listed education, politics, ethics and law, adding to these grammar and rhetoric (the employment of speech with propriety and effect) as practical sciences
allied with psychology and logic. And, following the patterns of his predecessors, Bain set out to fill in textual gaps, supplying works in which associationist principles were applied to grammar, rhetoric and educational principles.

To summarize, Bain's work represented a continuance of the Utilitarian-Associationist tradition in two broad respects. First of all it represented an attempt to deal more satisfactorily with some of the problematic aspects of the associationist account of mind. Secondly it represented an attempt to further the social program of the school by developing some of the practical fields related to the science of mind. Bain's views on character and on the science of education which will be discussed in Chapter 5, are particularly relevant here. Although Bain made revisions to some of the central tenets of the program, the continuity is far greater than any discontinuity.
NOTES TO CHAPTER 3

1. The biographical portions of this chapter are based primarily upon Bain's own account in Autobiography, (London: Longmans, Green, and Co., 1904). As yet, there is no other critical source to use to confirm or qualify Bain's recollection of events and his account of his life. On Bain's early religious views see Ibid., pp. 9-12, 33-42.

2. Ibid., pp. 26-28. Andrew and George Combe were near the apex of their influence in Edinburgh at this time and the enthusiasm for phrenology had spread to Aberdeen. Bain retained an interest in phrenology while remaining quite critical of the theory. Bain's flirtation with spiritualistic theories extended also to mesmerism. An unfortunate experience in which he placed a friend in a trance but was unable to bring him out, served to quench his interest in the phenomenon. Ibid., pp 140-41.

3. Ibid., pp. 29-32.

4. Ibid., pp. 30-49. Although introspection was a subjective method, Bain regarded it as "the alpha and omega of psychological inquiry." Bain, "Respective Spheres and Mutual Helps of Introspection and Psychophysical Experiment in Psychology," Mind 2 n.s. (1893): 42.


6. Ibid., p. 60.

7. Ibid.


9. Bain, Autobiography, pp. 49, 60, 65. Bentham and Bain, along with others during the nineteenth century (e.g., Galton) shared a preoccupation with genius that perplexes me. I am not sure whether it represents a projection of their own ambitions or whether there is some more general reason for their interest. Perhaps they felt that their century lacked the genius necessary for scientific and social progress.

10. Ibid., pp. 71-73.

11. Ibid., pp. 75-76.
12. Ibid., pp. 76-77.

13. In the Autobiography, Bain claims that the real merit of the article lies in the "enunciation of the two great intellectual laws [contiguity and similarity]." Bain, Autobiography, p. 114. He describes the paper as involving "a somewhat incongruous union of lightness in the end, with gravity in the means," and comments that "the applications were so far legitimate, but overdone; the facts to be explained . . . requiring sources of emotional interest beyond what could be properly referred to this intellectual principle." Ibid.

14. Bain, "Toys," p. 56. Bain seems to have arrived at the formulation of these central principles prior to becoming acquainted with the work of James Mill. Bain wrote an article during a period from mid-October until the end of November 1841, a time during which he was quite busy with preparations for his new position as Glennie's assistant. John Stuart Mill sent him a copy of Analysis sometime in November; apparently too late to exert any substantial influence on the piece. Bain, Autobiography, pp. 112-13. Nevertheless, Bain and James Mill learned their psychology from many of the same sources: i.e., David Hartley, Thomas Reid and Dugald Stewart. Bain also read Thomas Brown; Mill apparently was not familiar with Brown's work prior to writing the Analysis.


16. Ibid., p. 55.

17. Ibid., p. 54.

18. Ibid., p. 62.

19. Ibid., p. 57.

20. Ibid., p. 58.

21. Ibid.

22. Bain regarded the "toying principle" as the means by which stagnation of mind and the resulting intellectual impairment might be overcome. Ibid., p. 64.

23. Ibid., p. 65. Bain did not, however, arrive at this view from an examination of the works of Bentham. Both Bain and Bentham were strongly influenced by the work of Frances Bacon, who first propagated the view of knowledge as power.

24. Bain, Autobiography, p. 66. What Bain called the "Natural History Method" was later employed in his major psychological works.

25. Ibid., pp. 94-95, 100-1.
26. Ibid., pp. 92-93, 135-36, 142.

27. Ibid., pp. 188, 194-95.


29. Ibid., pp. 172-74, 177, 182.

30. Ibid., pp. 191-94.

31. Ibid., pp. 230-31, 260-68.

32. Ibid., pp. 79-80. As a member of a small mathematical society, Bain carried out a thorough investigation of Newton's calculations in the *Principia*, as he felt that "there was somewhere a petitio principii." The other members of the group did not find such an investigation necessary, being satisfied with "a short algebraic estimate." Bain wrote, "From that hour to this, I have been a sceptic as to the application of Mathematics to Natural Philosophy except in so far vindicated by results." Ibid., p. 80.


35. Ibid. Bain's four rules should be compared with the description of Bentham's method provided by John Stuart Mill:

"Bentham's method may be shortly described as the method of detail, of treating wholes by separating them into their parts, abstractions by resolving them into things,--classes and generalities by distinguishing them into the individuals of which they are made up; and breaking every question into pieces before attempting to solve it." (F. R. Leavis, ed., Mill on Bentham and Coleridge (London: Chatto and Windus, 1967[1950]), p. 48.

36. Bain, "Constitution of Matter," p. 44. Bain elaborated upon this point in referring to another essay, written during the same period, which stressed that,

"broadly speaking, the human mind can attend to only one thing at a time; in which respect a contrast is made between humanity and divinity. The practical carrying out of the supposed limitation is to analyze all complexes into their smallest parts, and to concentrate the mind upon each seriatum." Bain, *Autobiography*, p. 106.

37. Bain, "Constitution of Matter," p. 44. Bain coupled this recommendation with a belief that scientific advances could be made by individuals who identify important general principles and then "push
these generalities far ahead into subjects remote from their original source." Bain, Autobiography, p. 54. In such cases illustration serves to aid in grasping the general principle, as well as exemplifying its relevance in new contexts.


39. Ibid.

40. Ibid. Bain concluded the article with the admonition: "Until the human intellect has once got into the train of a right procedure, its powers must in great measure run to waste in this as well as in every other line of exertion." Ibid. I have said little about the view of matter developed in this article since I regard it primarily as a methodological piece. However, it is worth mentioning that Bain does not focus upon the constituent elements of matter but upon the forces binding these elements.


42. Ibid., pp. 137, 141-42. Bain's work largely consisted of providing scientific examples for the inductive portion of the work; a task highly consonant with his view of scientific method.

43. Ibid., pp. 147-148.


45. Ibid., p. 221.

46. Ibid.

47. Ibid.

48. Ibid., p. 243.

49. Ibid.

50. Ibid.


52. Ibid., p. 59.

53. Ibid., pp. 64, 150.

54. Ibid., pp. 60-61.

56. Ibid., pp. 115, 156-58.

57. Ibid., p. 157. Despite the need for secrecy "the society allowed itself to be mentioned by Mill to Comte as one of the centres of Positivism." Ibid.


60. Ibid., p. 60.


63. Ibid., pp. 117-23.

64. Ibid., pp. 195, 203.

65. Ibid., p. 196.

66. Ibid., p. 10.

67. During this period 14,000 people perished from the plague in London alone, and the Board of Health had only two inspectors to control its spread throughout England, Scotland, and Wales. For an account of the Board's work during this period—work which apparently intensified the plague—see S. F. Finer, The Life and Times of Sir Edwin Chadwick (London: Methuen, 1952; reprint ed., New York: Barnes and Noble, 1970), bk. 8, chap. 3.

68. Ibid., pp. 390-96. For Bain's account of the impact of these events on his position see Autobiography, pp. 203, 209-10.

69. Ibid., pp. 239, 234-35.

70. Ibid., p. 251. Senses and Intellect had been published by Mill's publisher, Parker. Parker was dissatisfied with the slow sales of that work and recommended delaying the publication of Emotions and Will. Mill and Grote assured Parker that they would be responsible for any losses incurred from the publication of the second work and the book came out in March 1859. Ibid., pp. 242, 251.
71. Ibid., pp. 246-47, 250. Bain's institutional ties to the University of London were very important, as we have seen in the introduction to Part II.

72. Ibid., pp. 247-48, 280. Bain was one of two examiners at this time, the other being Thomas Spencer Baynes.

73. Ibid., pp. 263-67.

74. Ibid.

75. Bain wrote:

"It is clear that if a Natural History of the human feelings is at all possible, we must endeavour to attain an orderly style of procedure, such as naturalists in other departments have had recourse to. If the fundamental divisions of mind [feeling, volition, intellect] have any validity in them, they ought to serve as the basis of a proper descriptive method." (The Senses and Intellect, 3d rev. ed. [New York: D. Appleton and Company, 1868], p. 74. Unless otherwise noted all references will be to the third edition of this work.)

The proposed plan was to thoroughly examine mental states in each of the following respects:

I. Physical Side
   A. Bodily Origin
   B. Bodily Diffusion, expression or embodiment

II. Mental Side
   A. Characters as Feeling
      1. Quality
      2. Degree
      3. Special Characteristics
    B. Volitional Characters
      1. Mode of influencing the Will
    C. Intellectual Characters
      1. Susceptibility to Discrimination and to Agreement
      2. Degree of Retainability


76. Bain, like John Stuart Mill, did not regard pleasure and pain as adequate to account for all human motivation. A physiologically based "spontaneity" was posited as a supplemental source of motivation.
Bain also argued that, under certain conditions, ideas alone could prompt action. His treatment of ideomotor action also rested on a "physiological" doctrine: the doctrine of identical seats for impressions and ideas.


78. Bain, Senses and Intellect, p. 59.

79. These muscular feelings are of three types. The first provides information concerning the organic condition of muscles and includes feelings of pain and fatigue. The second type are the feelings of exercise which accompany motor activity and include our sense of power and feeling of effort. The final type indicates tension in the muscles and provides a discriminative sensibility that guides much action. It is the second class of feelings that I will primarily focus on because Bain's physiological account of these feelings provided and alternative the the intuitionist's postulation of a mental power they claimed was the basis for freedom of the will.

80. Bain wrote, "thinking is restrained speaking or acting." ibid., p. 340. The motor theory of thought proposed by Bain also rested upon his doctrine of identical seats for impressions and ideas.


82. Bain read Hamilton's Reid repeatedly during the period he was writing Senses and Intellect and this work probably influenced his formulations. I think a study of the influence of this work upon Bain's work is an important desideratum for Bain scholarship. Bain, Autobiography, p. 234. For his comments on Hamilton's doctrines see Senses and Intellect, pp. 99-100.


84. Bain wrote:

"By the end of 1852, I must have made considerable progress with the first half of the volume, but had to draft and redraft the portions relating to the mechanism of the Will, which had hardly reached its final shape for the first edition of the Senses." (ibid., p. 234.)

Bain's problems continued during the composition of Emotions and Will. He wrote:

"It was sometime ... before I could incur the hazard of
putting pen to paper, knowing that what was done must, for the present, be final. The nature of Will, in particular, had gone through many transformations, and must now take a final shape." (Ibid., p. 242.)

85. Discrimination and agreement were special forms of receptivity; retentivity was a distinctly new property whose postulation implied a wholly organic account of memory. Bain, Senses and Intellect, pp. 321-24.

86. Robert Young contends that the actual effect was to transform these attributes into powers suspiciously similar to the faculties of the phrenologists. Young, Mind, Brain and Adaptation, pp. 129-30. While I think Young's point here is well taken, I don't think he makes a strong case for his more general claim that phrenology was the central influence on the development of Bain's psychology. Ibid., p. 250. See also Chapter 5, n. 134 below.


88. Ibid., p. 544.

89. Ibid., p. 570.

90. Ibid., pp. 6-7; Mill, Analysis, 2:181-82 (n. 35).

91. See Bain's discussion of alternative classifications in Senses and Intellect, pp. 6-8.

92. Brett pointed out that physiology played the same role for Bain as sound had for Hartley and chemistry had for James Mill--it provided analogies useful for grasping complex mental phenomena. Brett did not note that Bain was "more fortunate in his choice" than the others. Brett, A History of Psychology, 3 vol. (London: George Allen & Unwin, 1912), 3:204.

Specific problems in the Utilitarian-Associationist tradition included providing (1) a mechanistic account of volitional control of thought and action, (2) an account of the experiential sources of conviction or belief, (3) an account of the growth of knowledge that would vouchsafe the validity of knowledge derived from sense experience. Bain's account of muscular sensibility and his doctrine of identical seats for impressions and ideas aided (1). His doctrine of spontaneity played a crucial role in his account of belief. His organic theory of memory and the doctrine of "identical seats" helped with (3). Physiology was also involved to some degree in his ideomotor account of sympathy, since Bain's account of ideomotor action rests upon the "identical seats" hypothesis. Bain's account of the development of conscience, while not physiological, also represented a response to a problem within the Utilitarian-Associationist tradition: the problem of providing an experiential account of the moral sense.

94. Ibid., pp. 237-38.

95. Ibid., p. 236.

96. Ibid., p. 238.

97. Ibid., p. 239.


99. Ibid., p. 2.

100. Ibid., p. 11.

101. Ibid., p. 12.


104. Young also wrote:

"Almost to the present day, students of psychology have been encouraged to know something about the nervous system and have felt vaguely ignorant if they did not... It was not until the second quarter of the present century that some justification arose for a knowledge of physiology so that the students felt specifically ignorant if he knew nothing of its findings." (Ibid., p. 120.)

Given this analysis, I do not understand why Young chooses to praise Bain for his "innovation."


106. Ibid., p. 117.

107. Ibid., p. 118.

108. Ibid., p. 117.

109. Ibid., p. 116. I will dispute this interpretation by by arguing that Bain treated thought and movement as guided by the same "physiological" processes.

111. Roger Smith, "The Background of Physiological Psychology in Natural Philosophy," History of Science 11 (1973):95. See also Smith, "Physiological Psychology and the Philosophy of Nature in Mid-Nineteenth Century Britain, 1835-1875" (Ph.D. Dissertation, Cambridge University, 1970). Smith argues that Bain contributed the theory that individual knowledge depended upon motor activity. Smith also traces the implications of this view for Bain's account of sense perception. Ibid., pp. 163-66. Apart from his discussion of Bain, Smith's work traces some interesting relations between psychological theory and the history of science. He argues that the unique and fundamental status given to the first-hand experience of force in psychological theories led to a dynamic view of causality opposed to the Humean account. Smith wrote:

"nineteenth century thinkers projected subjective categories into the physical world in an attempt to render the world intelligible in terms of human value judgements. This search for intelligibility was a fundamental aspect of the philosophy of nature which functioned as an abstract level of contemporary scientific activity and conditioned aspects of ostensibly straightforward scientific issues." (Ibid., p. 193)

112. I will have more to say about these doctrines in Chapter 4 below.

113. Bain selected the feelings-of-innervation theory over the alternative sensory-feedback view because the former provided physiological support for the "most vital distinction within the sphere of mind," that is, the antithesis between passive and active modes of consciousness. Bain, Senses and Intellect, p. 77.

114. Smith, "Physiological Psychology," p. 166. The alternative sensory-feedback view was established by Charles Sherrington's work in 1893-94, although this work was not widely known until The Integrative Action of the Nervous System was published in 1906, three years after Bain's death. Hearnshaw, British Psychology, p. 78. Scientific opposition to the feelings-of-innervation account grew after David Ferrier's critiques appeared in 1874 and 1876. H. C. Bastian was the main opponent of this theory throughout the 1880's. Bain did not pay serious attention to this criticism until the 1890's.

115. Ibid., pp. 187-92, passim. Smith argues, quite correctly, that Bain was not the first scientist to be guided by a priori considerations in his choice of theory. I feel, however, that it is important to identify the source of these particular a priori considerations and to trace their impact upon other aspects of Bain's work.

116. Ibid., p. 166. Smith argues that even when the theory became controversial, during the seventies and eighties, scientists could and did claim that the clinical and experimental evidence was ambiguous.
117. Smith's work focuses upon the epistemological implications of Bain's account, while I am interested in how it influenced his formulation of accounts of higher mental process. Smith's neglect of this aspect of Bain's thought probably stems from Robert Young's claim that Bain did not employ physiology in his account of the higher mental processes.

118. It was not until Fritsch, Hitzig and Ferrier demonstrated the existence of motor centers in the brain that the physiological ground was paved for the application of the sensory-motor paradigm to the higher mental processes. On this point see Young, Mind, Brain and Adaptation, chaps. 6, 7, 8.


121. Ibid., p. 14.

122. Ibid.


125. J. A. Cardno, "Bain and Individual Differences," Aberdeen University Review (Autumn 1963):124-32; idem., "Bain as a Social Psychologist," Australian Journal of Psychology 8 (June 1956):66-76; D. G. Williams, "Alexander Bain as an Educational Psychologist," Aberdeen University Review (Autumn 1974):380-89. Cardno's article on Bain's social psychology corroborates my belief in the centrality of the problems of sympathy and conscience within Bain's psychology. However, while I argue that these problems were central for Bain because of his relationship to the Utilitarian-Associationist tradition, Cardno implies that he was launching social psychology. Cardno does point to some interesting relations between Bain's account of belief and the study of attitudes which at one time, was the central problem of social psychology. Cardno, "Bain as Social Psychologist," p. 74.


126. It was the discovery that Bain's immediate successors regarded him as engaging in old-fashioned psychology that first led me to question the standard account of Bain. I chose to take their criticisms of Bain seriously and in this way discovered that Bain had not adequately dealt with several of the problems that had arisen in the Utilitarian-Associationist tradition. This analysis also sheds new light on the role of physiology in Bain's psychology. Subsequent thinkers argued that his physiologizing was premature because physiology was not a well-developed science and because this approach forestalled the understanding of important mental processes.


128. Ibid.

129. Ibid.

130. These tenets are not mutually exclusive and probably not exhaustive. They do serve to characterize the central doctrines of the Utilitarian-Associationist program as it bears on psychology. In that sense, they provide a basis for evaluating my claim that the story of British psychology during the nineteenth century is largely the story of the vicissitudes of the Utilitarian-Associationist tradition.

131. Mill, in a rather tentative fashion, deviated from this precept. While he recognized that "nothing but" sense elements could not suffice as an account of mind, he was not willing to be precise about the "something more." He only went so far as to postulate "inexplicables" underlying our awareness of self and the assent we give our beliefs. Bain rejected these inexplicables and appealed instead to underlying physiological factors. Bain, Emotions and Will, 3d rev. ed. (New York: D. Appleton & Company, 1875 [1859]), pp. 151-52. (Unless otherwise noted all references will be to the third edition of this work.) See also Emotions and Will, 1st ed., pp. 580-85. On Bain's view of Mill's ideas see Emotions and Will, pp. 492, 532-35 and John Stuart Mill: A Criticism with Personal Recollections (London: Longmans, Green and Company, 1882), p. 121. In the latter work Bain stated that Mill's conclusion concerning an inexplicable component in belief "makes him appear to be a transcendentalist." Ibid.

132. For Bain's account of conscience, see Chapter 4, section entitled "The Ethical Emotions," below.

133. The centrality of this problem provides a clue as to why James Mill was only willing to recognize contiguity as a principle of association: contiguity preserves the order given in experience. I call this view the copy theory of knowledge. It was explicitly rejected by James Ward who stressed the creative aspects of coming to know the world.
134. On Bain's account of belief, see Chapter 5, below.

135. On these doctrines see Chapter 4, sections entitled 'Mind and Nerve Force' and 'Retentiveness and Contiguity' below. James Ward's criticism of these doctrines was presented in Ward, "Assimilation and Association (II)," Mind 3 n.s. (1894):507-31.


138. Ibid., chap. 1.


142. Mill, Analysis, 2:231 (n. 44).


144. This includes muscular sensations.

145. Bain adopted John Stuart Mill's phenomenalist definition of cause as the aggregate of antecedent conditions necessary for an effect, but he later maintained that the doctrine needed to be extended with the aid of the principle of conservation of force. Bain, Practical Essays (New York: D. Appleton & Company, 1884; reprint ed. Freeport, New York: Books for Libraries Press, 1972), pp. 140-42. This principle provided a new test for distinguishing between causation and mere conjunction. Since all change involves transmutations of force, those antecedents which lose energy must be regarded as more intimately involved in the causal relationship than others. Ibid., p. 141. The adoption of this additional criterion did not involve a shift away from a phenomenalist conception of causality. Both Mill and Bain were critical of those who maintained that our notion of causality is based upon our consciousness of volition. For the correspondence between Mill and Bain on this point and alterations to Mill's Logic, see Mill, Collected Works, vol. 8, app. D.

146. See Chapter 1, section entitled 'James Mill's Psychology,' above.

147. See n. 4 above.

148. Bain, Senses and Intellect, pp. 442-43. In this section of the work Bain proposed a theory of scientific temperament based upon natural aptitudes. A natural adhesiveness for sensible appearances and
properties was said to be essential for the concrete subjects of natural history (e.g., chemistry, physiology, anatomy). The more abstract and mathematical sciences require a mind able to resist the ordinary promptings of the senses and emotions, concentrating all its force upon abstract symbols. Finally, mental science requires a mind with an aptitude for discriminating, identifying and remembering feelings and the successions of ideas. Bain also noted that the subjective mind may focus upon its organic states:

"Indeed, by fixing the gaze on our own sensitive parts, we may produce a new subject sensibility, owing to the associations that connect them so strongly with our feelings." (Ibid., pp. 444-45).

A historian with an affinity for psycho-genetic accounts of intellectual development might relate Bain's formulation of a physiological psychology to his general health problems (and heightened organic sensibility). Such an analysis will not be pursued here.

149. Bain, "Definition and Demarcation of the Subject-Sciences," Mind 13 (1888), p. 535. He wrote:

"I assume without hesitation that Psychology should claim absolutely the handling of the Will, the nature of Conscience, whether it be viewed as simple or as complex, and the reality and sources of Disinterested Action." (Ibid.)


151. Ibid., p. 146.

152. Ibid., pp. 147-58.

153. Ibid., p. 167.


155. See bibliography, prepared by P. J. Anderson, appended to Bain's Autobiography, pp. 425-35. Bain published An English Grammar (1st ed. 1863, 2d ed. 1866) that was expanded and published in two volumes as A first English Grammar (1872, 2d ed. 1882) and A higher English Grammar (1872, 2d ed. 1879). English composition and rhetoric was published in 1866, then enlarged and published in two volumes in 1887 and 1888. Bain published Logic in two parts in 1870 and Education as a Science in 1879.
Bain's overall approach to psychology was described in Chapter 3. Here and in the next chapter I will be examining particular doctrines developed in the various editions of his two major works, *Senses and Intellect* and *Emotions and Will*. I am primarily interested in examining the employment of physiology in Bain's account of the senses, the intellect, the emotions and the will, although my survey will not be comprehensive even within these restrictive bounds. In addition, I will be looking closely at Bain's treatment of such problems as memory, the laws of association, and will and attention. In examining these problems I will be interested in the degree to which Bain's accounts provide an improved account of problems within the Utilitarian-Associationist tradition. I will also examine Bain's treatment of a set of issues related to morality—his accounts of the phenomena of effort, deliberation and resolution; his account of moral conduct, and his treatment of the problem of liberty and necessity. Finally, I will examine the epistemological problem of the nature of belief. There I will be concerned with the shifts in perspective that Bain introduced into the Utilitarian-Associationist tradition. Following Bain's chosen method of exposition, we will begin with the senses and the intellect.
Bain adopted a tripartite view of the mind, arguing that feeling, volition and intellect constitute the ultimate attributes of the mind. In *Senses and Intellect* he treated, first of all, the lower forms of feeling and volition and second, the intellectual properties of mind. In *Emotions and Will*, on the other hand, he treated the "higher stages of feeling" and the "active impulses of our nature."/1/

In *Senses and Intellect*, Bain summarized his general view of the attributes of mind. Feeling was described as including pleasure and pain as well as other emotions, passion, affection and sentiments./2/ Volition or Will covered all activity that is prompted by feelings./3/ The intellect was given the powers of sensing a difference (discrimination), sensing an agreement (similarity) and retaining and recovering images (retentiveness)./4/ Thought and feeling were to be distinguished as the former involves discrimination, comparison and retentiveness. Feeling lacks these properties; moreover pleasure and pain predominate in feeling states./5/

Bain regarded the law of relativity, which asserted that change of impression is essential to consciousness, as the fundamental law governing the mind. This law implies that experience acts upon us in the manner of a series of electric shocks; consciousness arises from being jolted by experience (external and internal)./6/
Brain as the Organ of Mind

Bain identified the brain as the chief organ of mind. Various types of evidence were presented for this view including the observed effects upon mental functioning of blows to the head and "the indisputable connexion between the size of the brain and mental energy displayed by the individual man or animal."/7/ The brain derives its power from the nerve force that is transmitted by nerve fibres. Electrical currents are maintained in the nerves and muscles and these currents undergo changes (i.e., issue in action necessary for consciousness) during sensation and muscular contraction./8/ Since nerve force plays such a central role in the functioning of the brain, the brain cannot be regarded as the sole organ of mind:

The organ of mind is not the brain by itself; it is the brain, nerves, muscles, organs of sense and viscera. When the brain is in action, there is some transmission of nerve power, and the organ that receives, or that originated, the power, is an essential part of the circle of mechanism./9/

Mind and Nerve Force

Bain described the functions of nerve force drawing upon the analogy provided by the action of electrical current. Like electrical current, nerve force enables intercommunication and transmission of power among various parts of the body. Even resting nerves and muscles contain a charge; transmitted nerve force "neutralizes and reverses genuine electrical currents proved to exist in the nerves and muscles in their condition of rest."/10/
There are differences between nerve force and electrical current, differences due to the nature of their conducting mediums. Nerve fibres may be stimulated by slighter influences than wire, but their conducting power is far less durable because it is "attended with nervous waste, and the substance has to be constantly removed from the blood." Furthermore the propagation of nerve force through nerve fibres is less rapid than electrical current through a wire.\footnote{11}

Nerve force is generated, Bain said "from the action of the nutriment supplied to the body."\footnote{12} Following his conversion to the principle of conservation of force, Bain argued that nerve force must be counted as one among several forces, "including mechanical momentum, heat, electricity, magnetism and chemical decomposition." The operation of our minds and our bodies is not due to a peculiar vital force, but rather to "a collocation of the forces of inorganic matter in such a way as to keep up a living structure."\footnote{13} Because nerve force is parallel to other physical forces the investigation of the human mind is analogous to investigations undertaken by other sciences. Bain wrote:

> When the mind is in the exercise of its functions, the physical accompaniment is the passing and re-passing of innumerable streams of nervous influence. Whether under a sensation of something actual, or under an emotion or an idea, or a train of ideas, the general operation is still the same. It seems as if we might say, no currents no mind. The transmission of influence along the nerve fibres from place to place, seems the very essence of cerebral action.\footnote{14}

There is some evidence that suggests that Bain regarded this view of the nervous substrate of mind as having limited value in accounting for the higher functions of mind. Nevertheless, Bain drew heavily upon this account in his description of retentiveness, one of the fundamental
properties of the intellect. As this property was held to underlie all of our higher intellectual functions and has implications for Bain's account of voluntary control of thought (attention), I will examine his treatment closely.

First of all, Bain drew upon this account to attack "the notion that the brain is a sensorium, or inner chamber, where impressions are accumulated, like pictures put away in a store."/15/ To replace this notion, Bain proposed a view of the brain as highly retentive, with impressions made upon it being embodied in the structure of the brain. These impressions "may be reproduced on after occasions and then what we find is a series of currents and counter currents, much the same as what existed when the impression was first made."/16/

What is important to note in this account is that Bain insisted that the processes involved in the restoration of impressions (ie. the revival of ideas) are identical to the processes that took place when the impression was first made. Bain stated "The renewed feeling occupies the very same parts and in the very same manner, as the original feeling, and no other parts, nor in any other assignable manner."/17/

Motor Theory of Thought

The postulated identity between the "seat of impressions" and the "seat of ideas" enabled Bain to do a number of things. First of all, it became possible to account for memory as the mechanical outcome of retentiveness in the brain, aided by the operation of association.
Secondly, this view of memory, coupled with his assertion that all ideas have a muscular component, led to a motor theory of mental functioning. Since the revival of ideas followed the very same nervous tracks as the original impression it followed that,

the ideal circle is a restoring of those currents that would prompt the sweep of the eye round a real circle; the difference lies in the last stage, or in stopping short of the actual movement performed by the organ./18/

and "thinking is restrained speaking or acting."/19/ Indeed, Bain went farther, writing: "The imagination of visible objects is a process of seeing, the musicians imagination is hearing, the phantasies of the cook and the gourmand tickle the palate."/20/

As we will see, Bain's motor theory of thought enabled him to develop a mechanical account of attention, or voluntary control over thought processes. This motor theory of thought enabled Bain to account for a large number of "anomalies" in our mental functioning, such as ideomotor activity.

Ideomotor Action

Although the will, which propels us toward pleasure and away from pain, is our chief source of active impulses, "the tendency of an idea to become the reality is a distinct source of active impulses in the mind."/21/ While in normal functioning this tendency is held in check by a "suppressive effort" there are ample phenomena that attest to this tendency. In somnambulism and mesmeric trances the restraining power seems to be absent and ideas are acted out in full. Furthermore, ideas may be so powerful as to overwhelm any restraining influence. Such a
mode of operation can be seen in the action of fixed ideas and in ideas associated with strong emotions such as fear. Even such relatively common phenomena as powerful ambition and high aspirations have some of the character of fixed ideas. Ideomotor action accounts for both normal and abnormal modes of functioning in Bain's theory./22/

Sympathy

Finally, this theory of thought was used by Bain to provide an account of sympathy, or disinterested conduct. Accounting for such conduct had always been problematic on the utilitarian pleasure-pain account of motivation and Bain was fundamentally in agreement with that account of motivation. He wrote:

The ordinary action of our will is to gain our own pleasures, and remove our own pains. That is all that can, strictly speaking, interest us. Each organization is more or less formed to work for conserving itself, and it would seem, at first sight, an irrelevance to go beyond this./23/

Nevertheless, he pointed out that the functioning of the intellect that we witness in ideomotor action can sometimes overpower the normal operations of the will. When we see a person who is hungry and cold, Bain reasoned, we take on the idea of those pains and the power of that idea induces us to relieve the pain that occasioned it. Sympathy and disinterested action arise because,

the intellect, which can form ideas of the mental condition of other sensitive beings, tends to make those ideas actualities; or induces the conduct that they would suggest if the pains or pleasures were personal to ourselves./24/

Here Bain was employing physiology and psychology in an attempt to solve a longstanding problem for the Utilitarian-Associationist tradition: how to account for disinterested or altruistic behavior on a
hedonistic theory of motivation. Bain appealed to ideomotor action, an exception to the pleasure-pain account of motivation, as the basis for sympathetic action. But his account seems overly intellectual. If we simply incorporate an idea of others' feelings why should we react to relieve their pain. Such ideas have in the past led to actions directed toward ourselves, e.g., the idea of being cold leads us to put additional clothing on ourselves. It is not clear, on this account, why these "automatic actions" should be directed to relieve the discomfort of others. Bain's account seems to presuppose a form of gregariousness that it is purporting to explain.

Bain later admitted the weakness of his account. In the fourth edition of Senses and intellect (1894) he wrote:

The weak point in the [previous] explanation, however, is that a mere intellectual idea would be insufficient, in most circumstances as a moving power against our own personal interests strongly entertained. Accordingly, it is a safer and more likely assumption that, in the operation of Sympathy, there is a habit of sociability, engendered by long hereditary usage, of acting gregariously with our fellows. /25/

Here Bain appeals to an instinctive factor in order to salvage the account of a phenomenon central to moral theory and difficult to explain on Utilitarian-Associationist principles. Prima facie his account appears to violate the principles of that program. However his Lamarckianism enabled him to maintain that inherited gregariousness arose during the course of experience, although not necessarily the experience of the particular individual.
To carry through this account of consciousness with its many fruitful applications, it was necessary for Bain to establish the plausibility of the view that all our ideas contain a muscular component. This, I claim, is one of the reasons for the formulation of his doctrine of the muscle sense. Before turning to this, and his related notion of spontaneity, I must mention an additional facet of the doctrine of identical seats for impressions and ideas. This doctrine, Bain asserted, has practical consequences for the construction of a science of mental life since,

the identity between actual and revived feelings shortens our labour by enabling us to transfer much of our knowledge of one to the other. The properties that we find to hold of sensation in the actual we may after a certain allowance ascribe to the ideal. . . The senses are in this way a key to the intellect. [underlining mine]/26/

The methodological and epistemological advantages of this doctrine will become obvious in Bain's account of attention.

Movement and Muscular Sensibility

Sensation versus Muscular Feeling: The Muscular Sense

In Senses and Intellect Bain described the five senses (smell, taste, touch, hearing, and sight) with ample discussion of the anatomy and physiology underlying each. He classified these senses into two groups. The "sensations of organic life"—smell and taste—play their predominate role in the functions of feeling, while the "intellectual senses"—touch, hearing and sight—contribute "the permanent forms and imagery employed in our intellectual processes."/27/
Set apart from these senses and given greater emphasis was a sixth sense, the muscular sense. According to Bain, muscular feelings can be discriminated from sensations of the other senses because they involve a consciousness of active energy. Bain located the source of this difference in the nerve force accompanying each set of feelings, the outgoing nerves being associated with feelings of activity while the ingoing are associated with passivity./28/

Bain identified three classes of active muscular feelings: (1) feelings connected with the organic condition of muscles; (2) feelings involved in muscular exertion; and (3) feelings that indicate the various modes of tension of the moving organs./29/ It is in examining Bain's account of these feelings, particularly the second class of feelings, that one can discern the importance of the muscle sense for his account of mind.

One distinctive characteristic of the feelings involved in muscular exertion is summed up by such phrases as "the sense of power," "the feeling of energy put forth," "the experience of force or resistance." Bain asserted,

This is an ultimate phase of the human consciousness and the most general and fundamental of all our conscious states. By this experience we body forth to ourselves a notion of resistance, or power, together with the great fact denominated an external world./30/

Thus Bain provided a physiological basis and, therefore, an alternative account of the fundamental datum of consciousness usually cited as the source of our idea of causal power, of the knowledge of the reality of the external world and of our belief in free
will./31/ Bain's postulation of a muscle sense represents, in part, an attempt to undermine intuitionist accounts of mind. However, this doctrine does not represent a radically new departure in the associationist tradition. James Mill had claimed that muscular sensibility was the basis of our ideas of resistance, extension, motion and space./32/ Bain did give greater weight to this source of feelings in his account of such volitional phenomena as our feelings of effort, of resolution, and deliberation. And he adopted a physiological theory about the source of these feelings: the feelings-of-innervation theory.

While the feelings involved in muscular exertion are said to underly our perception of externality, the third set of feelings--the discriminative sensibility of muscular tension--underlies our perception of force, time, space and velocity. This set of feelings provides a consciousness of degree of exertion and resistance that underlies our measure of force./33/ Prolonged contraction of muscles under dead weight yields a measure of time; the same contractions accompanied by movement yields a measure of space./34/ Finally, as such movements vary in their speed we acquire an ability to estimate velocity./35/ While all these notions appear in a very rudimentary form at this level, it is clear that Bain locates the origin of these perceptions in the muscular sensibility.

Another important role played by the muscular sensibility must be mentioned; that is, its role in guiding the development and execution of skilled voluntary movement./36/ Bain asserted that "the guidance by the feeling is necessary in the course of learning any mechanical effort"
and he said, "in most mechanical successions, the feeling of the effect produced at each stage is a link in the transition to the next."/37/ In many cases the "feeling of the effect" will be either a visual, a tactile, or an auditory sensation, but in others "the muscular feelings themselves, which always count for something" serve to supplement or substitute for such sensations./38/

A great deal more could be said about Bain's use of the muscle sense. While I will return to this topic in Chapter 5, here I must mention that Bain's conceptualization of this sense--as involving a central awareness of outgoing motor energy--was not supported by subsequent physiological research. The reconceptualization of muscular sensibility during the 1870's and 1880's involved viewing it as a function of afferent or sensory pathways (i.e., feedback from sensory organs in the muscles)./39/ This alternative account, of course, significantly weakened Bain's claim to have discovered a physiological basis for our primitive consciousness of power, and therefore weakened his case against the intuitionists.

Movement and Volition: "Spontaneous Activity"

Bain's interest in the importance of movement in human life had bearing on another aspect of his account of the mind: volition. As we have already mentioned, Bain stressed the importance of movement because movement was prior to all sensation, and enters as a component part into every sensation./40/ It is the first point--that movement takes place prior to all sensation--that provided the basis for his doctrine of spontaneous activity.
Movement or action, Bain wrote, arises from a variety of stimuli both physical and mental. Among the physical stimuli he included mechanical irritation, chemical and electrical stimulation and sudden changes in temperature. Mental stimuli propelling movement include the operation of the will, as well as emotions and other involuntary states of the mind./41/ Another source of stimulation to the muscles is the spontaneous force under examination—a force emanating from the central nervous system prior to, and independent of, sensations of the senses./42/

Bain postulated that the nervous system displays spontaneous activity and presented various "proofs" of this activity. The "proofs" cited include the tonicity of muscles, the permanent closure of the sphincter muscles, and the activity of the involuntary muscles (e.g., vaso-motor action, rhythm of the heart, and peristaltic motion in the alimentary canal)/43/ To demonstrate that such a force may play a role in outward movements he cited additional evidence. In waking from sleep, he said, movement precedes sensation and therefore,

we are at liberty to suppose that the nourished condition of the nerves and nerve centres, consequent on the night's repose, is the cause of that burst of spontaneous exertion at the moment of awakening./44/

Since many of the movements of early infancy do not appear to be attributable to sensory or emotional stimuli, Bain concluded that "we can ascribe them to nothing but the mere abundance and exuberance of self-acting muscular and cerebral energy which rises and falls with the vigour and nourishment of the general system."/45/ The character of muscular and mental activity during excitement and the fact that
sensibility and activity are not usually in correspondence within individuals, are cited as additional confirmation of the existence of such a spontaneous force.  /46/

Finally, Bain pointed out "that without spontaneity, the growth of the Will is inexplicable." /47/ While this last point cannot be regarded as a proof, or even as constituting empirical evidence for the existence of such a power, it is clearly the fundamental reason for Bain's postulation of such a power. There is considerable irony in the fact that Bain's key evidence for spontaneity took the form of a transcendental proof rather than inductive evidence.

Although I will be discussing Bain's account of volition later, here I will indicate the role played by spontaneous activity in his account of the origins of volition. In the first place this fund of spontaneous activity has a purely physical origin. The food we eat is converted into a store of nervous force which is most abundant when the individual is well-rested and in good health. /48/ Illness and poor nutrition will deplete this store, as will ordinary movement and action (both mental and physical). The mode of action of this spontaneous energy was described by Bain as follows:

[The] nervous system may be compared to an organ with bellows constantly charged and ready to be set off in any direction according to the particular keys touched ... The stimulus of our sensations and feelings, instead of supplying the inward power, merely determines the manner and place of discharge. /49/

Initially the discharge of this store of nervous force takes place in a random manner, independent of sensation and feeling. /50/ These random movements produce consequences: the feelings of pleasure and
According to Bain's law of self conservation, pleasure (and the removal of pain) leads to an increase in the vital force delivered to the organs and the muscles; pain leads to an abatement of that force. The result is that movements leading to pleasurable consequences will be continued; those leading to painful consequences will be halted. With repetition, particular movements will become associated with pleasure and others with pain, so that the ideas of pleasure and pain will continue to serve as prompts to the will.

The processes involved in Bain's account of the development of volition are analogous to the process of natural selection. Random movements are emitted by the organism; selection takes place in terms of the consequences of these actions. Purposeful actions—those yielding pleasure—are selected for, while actions yielding pain drop out. In this fashion the individual develops most of the behaviors that aid in self-preservation.

Bain clearly employed the doctrine of spontaneity to "enliven" the Utilitarian-Associationist account of the will. But what about the merits of the doctrine itself? I believe that Bain's employment of the term "spontaneity" for the process he described obscured the issues to his advantage. Such activity is only spontaneous in being independent of the stimulation of sensation or emotion. The inward power that is the source of this activity arises from external causes—the food ingested by the individual as well as his general state of health. Bain maintained that, in principle, we could "render an account of all the nutriment consumed in any animal or human being" and "calculate the
entire amount of energy involved in the changes that make up this consumption." What we see here is a purely mechanical account of the generation of the inward power that is the source of spontaneous activity./54/ Furthermore all the actions which stem from the overflow of this nervous store have a mechanical character, i.e., their character is determined by the quantity of surplus energy. Bain did not postulated spontaneity at the core of his account of the development of movement, but rather an "engine" that operates according to mechanical principles./55/

In Bain's account the antecedents of spontaneity are entirely physical, no mental state precedes spontaneous activity./56/ However those who speak of the role of activity in mental life usually have in mind some form of mental activity. Bain's account affords no aid to those who might wish to argue for the freedom of the will based upon spontaneous activity./57/ By the same token, Bain's doctrine could not be appealed to in support of a notion of mental activity. Any consciousness of mental activity that we have is merely a byproduct of physical activity whose origin is wholly mechanical./58/

Finally, I should point out that spontaneity played a far more limited role as a determinant of action than Bain led his readers to believe. Initially it propels the outburst of random movements which serve as raw material for the development of voluntary movement. Quite rapidly, however, the manifestation of this "spontaneous activity" becomes bound by certain well-established channels of outlet. Once movements take on a particular form; once habit patterns are laid down
in the organism, the conditions that led to spontaneous activity will, under normal conditions, be manifested only in the modulation of activity.\(59\) In other words, action rapidly loses the character of spontaneity that Bain claimed for it. As we will see later, Bain's account of voluntary action had a teleological character only in appearance, just as his "spontaneity" is spontaneous only in name.\(60\)

Bain's Associationist Account of Intellect

As I have already mentioned, Bain's account of the intellectual functions is predominately an associationist account. Receptive and retentive powers of the mind are postulated; all other intellectual functions (complex memory, judgement, reasoning, abstraction, imagination, etc.) are accounted for in terms of association of ideas, movements and feelings. Bain proposed the following four laws of association:

1. **Law of Contiguity:**

"Actions, Sensations and States of Feeling, occurring together or in close succession, tend to grow together, or cohere, in such a way that, when anyone of them is afterwards presented to the mind, the others are apt to be brought up in idea."\(61\)

2. **Law of Similarity:**

"Present Actions, Sensations, Thoughts, or Emotions tend to revive their like among previous impressions or States."\(62\)

3. **Law of Compound Association:**

"Past actions, sensations, thoughts, or emotions, are recalled more easily, when associated either through contiguity or through similarity with more than one present object or impression."\(63\)
(4) Law of Constructive Association:

"By means of Association, the mind has the power to form new combinations, or aggregates, different from any that have been presented to it in the course of experience."/64/

As one might suspect from examining these laws, there are really only two fundamental principles of association postulated: contiguity and resemblance. Compound and constructive association are more complex cases of the operation of these two principles. Nevertheless, each of these laws is postulated to account for particular intellectual functions. Contiguity provided an account of memory, habit and various learning processes./65/ Similarity accounted for recollection, classification, comparison, abstraction and other processes involved in reasoning./66/ The law of compound association accounted for the complicating effects of emotion and volition in our thought processes. It was also employed to explain the directional (purposeful) character of our thought processes./67/ Finally, the law of constructive association, which rested on similarity, was employed to describe the operations of imagination and creative thought./68/

Retentiveness and Contiguity

I have already discussed aspects of Bain's account of memory in examining the doctrine of the identity of the seat of impressions and ideas. Underlying this doctrine is the notion that retentiveness is a fundamental property of the intellect. This "primitive plasticity" manifests itself in two functions: (1) the persistence of the mental impression after the stimulus has been withdrawn; and (2) the power of reviving past sensations and feelings in the form of ideas./69/ The
latter ability is primarily a function of the law of contiguity or, in Bain's words, "mental adhesiveness."

The methodological advantages of the doctrine of identical seats for impressions and ideas have already been mentioned. Bain, as we have pointed out, asserted that conditions favoring sensation would also favor ideation. In this context, circumstances favoring cohesion among sensations, feelings or movements should also favor cohesion among ideas. As repetition, concentration and the adhesiveness of the individual constitution favor cohesion among "actualities" they should play an equally important role in cohesions among the "ideal forms."/70/ According to Bain, this is generally the case, although there are some exceptions. For example, many individuals have strong powers of intellectual retentiveness without corresponding powers of sense (as assessed by "the proper test" of a sense—delicate discrimination). Conversely, many lower animals have first-rate sensory powers but lack corresponding powers of memory./71/

Bain observed other salient characteristics of memory. First, he noted that retentiveness is at its peak during the early years and that this "force or plasticity" slowly diminishes over the course of a lifetime./72/ He also noted that "there is a temporary adhesiveness as distinguished from what is enduring or permanent" and that the system of cramming for examinations "is a scheme for making temporary acquisitions" by an "exaltation of cerebral power" stemming from excitement./73/ Such practice, he said, is wasteful for it depletes the brain's energy store. The brain must then remain idle for a period
until its power is restored and during that period of idleness, "a portion of the excited impressions will gradually perish away."/74/ Bain, as implied in this account of cramming, held that mental acquisitions tended to decay over time and that occasional revival (practice) was necessary to prevent such decay from taking place./75/ Bain's organic account of memory had several practical implications that he developed in his educational theory.

We should examine Bain's account of memory closely, as this psychological phenomenon was difficult to explain on associationist grounds. James Mill had maintained that memory involved ideas linked by trains of antecedent and consequent ideas. The obvious problem with this account is that we do not experience such orderly sequences in the act of recollection; many of the connecting links are missing./76/ John Stuart Mill had revised this account in two respects. First of all, he asserted that the fact of memory implies a subject: an inexplicable existent apart from, but aware of, the train of ideas and also aware that these ideas represent one's own experience. Second, he recognized the need for an account of the "missing links" in trains of recollected ideas. He proposed several alternative accounts, including one in which the continuity was provided by nervous currents underlying the ideas./77/ John Stuart appears to have felt that memory could not be accounted for simply in terms of mental successions; it required the underpinning of an ideal form ("subject" or "ego") or of a physical form ("nervous currents").
Bain was adamant in his opposition to ideal forms of buttressing for any mental phenomena, including memory. Bain asserted "I see no reason why a member of a series cannot be aware of the series" in an attempt to demolish Mill's argument for the necessity of the postulation of a subject./78/ As we have seen, Bain chose to provide organic supports for his account of memory. And, as we have seen, this approach seems to have led him to notice new characteristics of memory. Whether this approach led him to neglect other important aspects of the phenomenon is a question we must postpone for the time being./79/

The law of contiguity was also employed by Bain to account for the development of perception of objects and for various forms of learning including the learning of language as well as mechanical and artistic skills./80/ The principle also played a role in Bain's account of development of voluntary action./81/

**Similarity and Creativity**

The law of similarity was given great emphasis by Bain for two main reasons. First, against James Mill, he argued that similarity is more fundamental than contiguity; for without similarity, ideas associated by contiguity could never be revived./82/ Secondly, he maintained that this principle is important in a wide range of scientific and literary activities. Bain pointed out that this principle played a role in inductive science. He wrote:

Some discoveries turn upon this exclusively; and no extensive series of discoveries can proceed without it. In truth, the very essence of generalization being the bringing together of remote things through the attraction of sameness, this attractive energy is the right hand of a scientific inquirer./83/
Bain traced how similarity is involved in scientific reasoning by providing accounts of abstraction, induction, deduction, and analogy.\textsuperscript{84} His account of the role of similarity in analogy is interesting as it illuminates his approach to several psychological issues. First of all, he said, analogical reasoning is a less perfect form of deductive reasoning.\textsuperscript{85} In deduction, the principle of similarity operates by transferring all that had been ascertained in one case to any identical new case. Analogical reasoning involves the employment of the same principle in cases that are not identical. Bain wrote:

A mind well stored with numerous conceptions, the fruit of various studies, and having at the same time a good reach of the identifying faculty, can strike out analogies when identities fail; and by their means a certain amount of insight is sometimes obtainable.\textsuperscript{86}

Bain pointed out that his own comparison between nerve force and electrical current illustrates this kind of reasoning. Other cases could be cited, such as the analogy drawn between the operation of the senses and the operation of the intellect. But Bain also warned that, "a good reasoner remarks how far the analogy holds, and confines his inferences within those limits."\textsuperscript{87} In certain cases the analogy may be "too faint to be of any value, and ... misleading if deductions are made from it."\textsuperscript{88}

The principle of similarity underlies illustrative comparisons and plays an important role in instruction and in rhetoric, serving to aid intellectual comprehension or for "ornament, effect, or emotion."\textsuperscript{89} According to Bain, Bacon's writings represent the finest manifestation of the former type; Shakespeare's writings the finest of
the latter type. Bain also pointed out the necessity of employing such illustrative comparisons to convey scientific concepts and abstractions used to account for physical phenomena, social phenomena and psychological phenomena. Concerning the later he wrote,

Human actions, feelings and thoughts, are often so concealed in their workings, that they cannot be represented without the assistance of material objects used as comparisons; hence the great abundance of the resemblances struck between matter and mind. /90/

Compound Association

The law of compound association involved no new principles but provided Bain with a way of accounting for several complex intellectual functions. Because the combined action of psychic elements is more effectual than one of these elements alone, recollection or invention may be facilitated by such compounds. /91/ Of particular interest is how Bain employed this law to account for the influence of emotion and volition upon intellectual functions. The law also enabled him to provide a somewhat more satisfactory account of how the "idea of an end" may guide thought processes, providing them with a directional character.

According to Bain, emotions can acquire influence over intellectual processes in a number of ways. Since emotions can become associated with ideas, the recurrence of the emotion may facilitate recall. /92/ Likewise, the presence of emotion may block recall of ideas associated with contrary emotions. /93/ For example, an irascible individual will readily recall injustices incurred, but be less likely to recollect gestures of good will. As a consequence "minds very
susceptible to emotions" will have trains of thought tainted by their characteristic feelings with a resulting deficiency in rationality. Bain warned that "our feelings pervert our convictions by smiting us with intellectual blindness." Bain set up an opposition between intellect and emotions which made emotions the corruptors of reason. He wrote:

An intellectual and cultivated nature strives to maintain the ascendancy of the intellectual associations over the suggestions of emotions. The dominion of reason is another expression for the same fact.

Volition can also have effects upon recollection and imagination, but its effects are wholly indirect as there is no power of adding to the associating bond either of contiguity or similarity by a voluntary effort. The reproductions of the intellect are withdrawn from the control of volition.

Volition interferes with intellectual processes in two possible ways: (1) by exciting the nervous system, and thereby exalting the intensity of all the nervous processes and (2) by governing intellectual attention. Bain's account of attention paralleled his account of voluntary movement, because of his doctrine of identical seats for impressions and ideas. He claimed that "the same volition that rules the bodily eye, can rule the mental, because that mental eye is still not other than the bodily one."

I will have more to say about this account of attention. Here the point is that volition can "interfere" with recollection by seizing onto a particular idea and intensifying it. This increased intensity raises the likelihood of recollecting ideas associated with the idea. In a similar fashion the direction followed by a train of ideas may be
determined by a superadded idea. Such a "guiding idea" shapes the train of thought by making certain recollections more likely than others. Here Bain's analysis represents an extension of James Mill's account of the function of the "idea of the end." In that account, recollection was guided by the idea of an end: associated ideas continued to be called up until the desired end was attained. Bain gave this process a much wider scope. He indicated that, in addition to accounting for deliberate thought, this process underlies habitual attitudes of mind, and cases where a "guiding idea" might arise accidently and have only temporary effects./99/

The principle of compound association implies that there may be multiple aids to the recovery of ideas. Ideas may be associated with qualities or properties that appear with it, but also with such things as locales, times and persons. Bain also pointed out that "the connexion of things with uses is a source of multiple bonds."/100/ The distinct ends or functions served by various objects provide powerful bonds of association and these functions may help make up for defective associations and enable us "to get at the missing object through a new door."/101/ Bain's view of the conditions facilitating recollection was considerably more complex than Mill's.

Constructive Association

Bain's final principle—constructive association—was used to describe the operations of imagination, creativity, constructiveness and originality. We have already seen that Bain had a long-standing interest in creative genius and that he felt that similarity played an
important role in the thought processes of individuals possessing genius.

In discussing this law, Bain made a distinction between constructive thought processes which are predominately intellectual, and imaginative processes which are regulated by emotion./102/ It is clear that Bain placed greater value on the former processes than on the latter. Nevertheless, certain conditions are common to both. In the first place, there must be "a previous command of the elements entering into the combination."/103/ This is one source of Bain's insistence that we must fill the mind with useful images. In the second place, "a sense of the effect to be produced" is needed. The desired effect may be practical (to fit some use); scientific ("to seize the realities of nature with precision"); or aesthetic ("to gratify the feelings of taste"). Finally, there must be "a voluntary process of trial and error continued until the desired effect is actually produced."/104/ The "sense of effort" guides this trial-and-error process of thought.

Bain's analysis of what we would today call "the creative process" represented a new contribution to the associationist corpus. Other extensions of the associationist doctrine were made in Emotions and Will, the work to which we will now turn.

Emotions

In Emotions and Will, Bain focused on the non-intellectual aspects of mind. The volume opened with a quotation from Dugald Stewart's, Philosophy of the Active Powers, expressing the distinction between the
active and the intellectual powers:

Our active propensities, therefore, are the motives which induce us to exert our intellectual powers; and our intellectual powers are the instruments by which we attain the ends recommended to us by our active properties. /105/

Bain, in keeping with the Utilitarian-Associationist tradition, argued that feelings of pleasure and pain impel the organism to action. /106/ In this work Bain proposed to provide a natural history of "secondary, derived, or complicated feelings, termed the EMOTIONS." /107/ Such an account would involve, he said, a discussion of the bodily origin and manifestation of feelings as well as a discussion of their character as feelings and their character in relation to volition and intellect. /108/ Bain's account built upon his earlier treatment of elementary feelings and sensations; the characteristics of emotions were contrasted with the previously identified characteristics of sensations.

The origin of feeling was related to the law of relativity, as it applied to feelings:

Change is necessary to feeling; we are unconscious of unremitted impressions; the degree of feeling is proportioned to the change; abruptness or suddenness of transition is one mode of enhancing the effect. /109/

An additional law, the law of diffusion, described the bodily manifestation of feeling:

According as an impression is accompanied with feeling, the aroused currents diffuse themselves freely over the brain, leading to a general agitation of the moving organs, as well as affecting the viscera. /110/
This characteristic mode of action serves to differentiate emotional from intellectual states of mind. I will comment further on these differences below.

The Nature of Emotions

The complex feelings we identify as emotions display different qualities from the simpler feelings discussed in *Senses and Intellect*. Bain described emotions as secondary, derived or complicated feelings. It is through association that separate feelings are united into compound emotions; association also operates to connect emotion to objects other than those originally exciting the feelings.

Although sensation and emotion both involve diffusion of nervous currents, "Emotion has, proximately, a central origin; while Sensation has a superficial or peripheral origin."/111/ But because the physical origin of emotion is likely to be obscure, our investigation of emotion must focus upon outward manifestations.

Despite this caveat, Bain employed "physiology" to differentiate between emotion and sensation. He noted that emotions arouse more currents and diffuse these currents more widely over the brain than does sensation. As such, emotions "rise more slowly, attain to a greater volume, and subside more gradually than Sensations."/112/ Since emotion has a central origin, we can exert greater control over their manifestations than we can over the manifestations of sensation. Emotions, therefore, "are more dependent than sensations are, upon the general condition of the mind at the time, on the dispositions and
prevailing bent of the mental powers."/113/

There are several other differences between the mental character of emotions and sensations. Emotions draw heavily upon revived feelings; sensations represent "full and proper actuality." Emotions are voluminous and diffuse, sensations are acute. As a consequence, emotions "are less exhausting and more sustainable than sensations."/114/ However, their voluminous character renders them less open to strict quantitative estimate than any other mental elements whatever; a circumstance unfavourable to their exact or scientific treatment and to the practical appreciation of their value in human life./115/

Bain's concern seems misplaced as he had earlier claimed to be sceptical about the value of applying mathematics to scientific matters./116/ The disclaimer appears to serve the more general purpose of highlighting the difficulties of investigating human emotion. As we have seen, Bain pointed out that the physical origin of emotions were obscure. He seems to have a great deal of difficulty in getting a handle on the emotions either subjectively or objectively./117/ As John Stuart Mill pointed out, "the attempts of the Association psychologists to resolve the emotions by association, have been on the whole the least successful part of their endeavours."/118/ In any event, Bain's predominant concern in this section of the work is simply to provide a thorough classification of the emotions. Yet even this task was fraught with difficulties as we shall shortly see.
Volitional and Intellectual Aspects of Emotions

While feelings and emotions have their own distinctive mental manifestations qua feelings, they also play a role in the volitional and intellectual functions of the mind. Feelings, specifically pleasures and pains, serve as the antecedent for every act of volition. In addition, emotions may rule our conduct "through the stand they take as persisting ideas."/119/ Bain wrote:

by marking the line of action dictated by an emotion, we have a further means of characterizing it... The freely-chosen conduct of any living creature is a final, though not infallible, criterion of its pleasures and pains./120/

The intellectual aspect of feeling becomes important when we consider the retention and revival of feelings. Bain noted, first of all, that pure emotion is simply not revivable. To be recoverable, emotion must be connected to a revivable sensation and he noted that visual and auditory sensations are superior in this role. Secondly, the same conditions that govern retentiveness of ideas--repetition, concentration and natural adhesiveness--apply to feelings, although they operate differently in this sphere. Greater repetition is necessary as "the associations with feeling are the slowest of all, although exceedingly various in particular cases." Concentration of mind may be aided by intensity of feeling and by the "comparative disengagement of the mental forces." Finally, as there are individual differences in adhesiveness there may be individual differences in the rein given to emotion in general or to specific emotions./121/

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All these factors will influence the retention of various emotions. Other special circumstances may influence their recoverability. As "a state of pleasure demands a considerable physical support in the brain and other organs," the revival of emotions is physically more taxing than the revival of ideas and "the physical state of the individual must be adequate to its support."/122/ The presence of opposing emotions in the mind is likely to block revival of an emotion. Greater time is needed for the recovery of emotions than for the recovery of ideas. Finally, the intellectual associations, which provide the sole means of recovering feelings, must be present with "an energy far greater than is required for the purposes of the understanding."/123/ The mental processing of emotions is far less efficient than intellectual processing.

Despite all these problems, a number of mental facts "exhibit at once the volitional and the intellectual properties of feelings."/124/ Forethought, or volition "engaged for ideal ends," involves the revival of past pleasures and pains in the service of future action. Since in this case volition will be largely determined by the vividness of our recollection, it is obvious that "the theory of the Will presupposes a full knowledge of the circumstances that govern emotional retentiveness."/125/

In other cases the character of the recollected emotion plays a role in the control of our action. "Self-control," "prudential restraint," and "moral strength" all involve conflicts between motives in which a tempting present pleasure vies with what might be beneficial
in the long run./126/ These forms of restraint depend upon the vivid revival of the evil to be incurred. The revived emotion will, however, always fall short of the reality. The consciousness of a discrepancy between a revived pleasure and its reality, serves as the basis for desire, which ultimately underlies action./127/

Attentional processes also involve the operation of both volitional and intellectual properties of feelings. Bain wrote that "a pleasurable feeling detains the gaze upon the object, which is thereby imprinted on the memory . . . Painful objects are avoided by us in the same manner."/128/ He noted, however, that pleasure and pain are not always necessary for stamping in such intellectual impressions. "A shock of neutral surprise" or "the power of mere [intellectual] excitement" may be sufficient to "seize the attention and imprint . . . [the incident] on the memory."/129/

It should be clear that, in addition to their "feeling character," feelings play a role as important constituents of volitional and intellectual processes. After describing the varied manifestations of feelings and emotions, Bain turned to the task of providing an exhaustive classification of the emotions. Producing such a classification appeared to be no easy matter; the system underwent revisions in subsequent editions of *Emotions and Will.*
The Classification of Emotions

In the first edition of *Emotions and Will* (1859), Bain identified eleven classes of emotions: (1) Feelings of liberty or restraint in expression of emotion, (2) Wonder, (3) Terror, (4) Tender-Affections (not including sympathy), (5) Emotions of Self, (6) Emotions of Power, (7) Irascible Emotions (including anger), (8) Emotions of Action, (9) Intellectual Emotions, (10) Emotions of Beauty and (11) Moral Sense./130/ The first four classes were regarded as fundamental emotions—the constituents of all the remaining emotions—with roots in the nervous system.

The classification Bain presented in the third edition (1875) differed significantly. Love and anger were identified as the simple emotions from which all others are derived. Fear was also identified as a simple emotion although Bain stated that it is probably not independent of sensation in its origin./131/ Liberty and restraint as well as wonder were dethroned as fundamental emotions. These emotions were now regarded as mental shocks, sometimes accompanied by pleasure or pain, produced in accordance with the law of relativity.

The derived emotions identified in this edition included: [Fear] (1) Property, (2) Power, (3) Pride, (4) Vanity, (5) Plot-Interest, (6) Knowledge, (7) Beauty, (8) Moral Sentiment./132/ Bain provided accounts of all these forms of emotion and also discussed emotions of relativity (novelty, wonder and liberty), ideal emotion and sympathy./133/
Two of these derived emotions deserve closer attention: Knowledge (the emotions of the intellect) and Moral Sentiment (the ethical emotions). Bain's account of emotions of the intellect provided the key to his account of belief, an account that was to be influential in the development of American pragmatism. And Bain's account of the ethical emotions provides further evidence of his adherence to the precepts of the Utilitarian-Associationist tradition. In following these precepts he advanced this tradition's alternative account of the moral sense by providing an account of the development of conscience in childhood. Let us look first at his discussion of the emotions of the intellect.

Emotions of the intellect

As I have already mentioned, Bain argued that the operation of contiguity had no emotional concomitants while the operation of similarity did. He wrote: "identifications of likeness- in remote objects, and under deep disguises, strike the mind with an effect of surprise, brilliancy, exhilaration, or charm."/131*/ Conversely, "Inconsistency, want of Unity, positive Discord, are forms of pain that influence us to a considerable degree."/135/

Bain stressed that the feelings which accompany the operation of similarity arise automatically. The "flash of identification" results directly from the revival of a previous impression as a component of a new impression. The similarity resides solely within the ideas; it is not under the control of the perceiver./136/ Moreover, in some cases the similarity will not be perceived because "the spark does not pass between the new currents and the old dormant ones." It is this "passing
"spark" that produces the pleasurable emotion of similarity and awakens attention to the objects producing it./137/

The physiological basis of the view that inconsistency leads to pain is far less clear, although its philosophical importance is obvious. Bain wrote that the pains arising from "inconsistency, want of Unity, positive Discord ... derive importance from inspiring the virtues of Truth, Integrity and Justice" and that they are "in fact, a constituent element of the Moral Sense."/138/ As we will see, Bain's account of belief relied heavily upon this particular emotion of the intellect. Experience that is inconsistent with our beliefs produces painful shocks, leading us to alter our beliefs or to repeat the "test" again. I will return to Bain's account of belief in Chapter 5.

The Ethical Emotions

Bain preceded his account of the moral sense with a discussion of what constitutes "Morality, Duty, Obligation or Right." Here Bain adopted the outcome of the utilitarian analysis, the conclusion that, "the imposition of punishment ... is the distinctive property of acts held to be morally wrong."/139/ While Bentham had identified two powers that "impose the obligatory sanction"—law and society—Bain added a third—conscience. Bain's primary aim in his account of the ethical emotions was to elucidate this latter "self-constituted form of moral government." In true utilitarian fashion he preceded his account with a critique of the alternative authority of right and wrong: the moral sense.
Criticism of the Moral Sense

Bain simply denied that we have an intuitive awareness of universal moral judgments. Against this view he contended that morality grows out of one's social situation and that it is relative to that situation. Certain rules must be imposed to achieve public security, others are grounded upon "men's sentiments, likings, aversions, and antipathies." All moral codes, he wrote, can be traced to these sources: utility and sentiment, plus tradition, "which is the continuing influence of some former Utility or Sentiment".

As we can see, the doctrine Bain espoused as underlying the theory of morals is a modified utilitarianism. While Bain followed the utilitarians in rejecting the innate origin as well as the universal and immutable character of the moral sense, he followed John Stuart Mill in claiming that something like the moral sense or conscience is necessary to account for moral conduct. Bain carried this line of reasoning further in a manner compatible with the precepts of the Utilitarian-Associationist tradition and provided an account of the origins of conscience in the experiences of childhood.

The Growth of Conscience.

Bain asserted that conscience is an inner authority like the moral sense, but one that "is moulded upon external authority as its type." The operation of conscience parallels the operation of external authority. Bain wrote:

Conscience is an imitation within ourselves of the government without us; and that, even when differing in what it prescribes from the current morality, the mode of its action is still
parallel to the archetype./143/

According to Bain, conscience develops out of childhood experiences of punishment (real or imagined). In the course of teaching children obedience or to "act according to the will of some other person," threats of punishment are employed. An association is quickly formed between disobedience and anticipated pain (magnified by fear); in these associations lie the germs of conscience or the "sentiment of obligation."/144/

Additional elements enter in later to modify the determinants of conscience. If the authority in control is loved or respected the acquired aversion will be fortified by dread associated with the possibility of producing pain in that individual./145/ Furthermore, reason may fortify and/or modify the workings of conscience if "the young mind is able to take notice of the use and meaning of the prohibitions imposed upon it, and to approve of the end intended by them."/146/

The operation of reason accounts for the formation of the independent conscience, "that variety of the moral sentiment that is not influenced either by fear of, or by reverence to, any superior power whatsoever."/147/ Here Bain was introducing a distinction between the "sentiment of obligation" and the "sentiment of duty." He wrote that the notion, sentiment, or form of duty is derived from what society imposes, although the particular matter is quite different. Social obedience develops in the mind originally the feeling and habit of obligation, and this remains when the individual articles are changed. In such self-imposed obligations the person does not fear public censure, but he has so assimilated in his mind the laws of his own coinage to the imperative requirements of society, that he reckons them of equal force as duty, and feels the same sting in falling./148/
Finally, Bain undertook an explanation of cases in which individuals carry out their obligations without any positive or negative prompts to action. It was such cases, analogous to cases such as miserliness, where the usual motives are non-operative, that invite explanations in terms of "primordial sentiments" or innate sources of motivation.\textsuperscript{149} According to Bain, such accounts misrepresent the true situation. Here he adopted the account given earlier by the Mills of the "functional-autonomy" of motives, while placing it in a pseudo-physiological context:

It is the tendency of association to erect new centres of force, detached from the particulars that originally gave them meaning; which new creations will sometimes assemble round themselves a more powerful body of sentiment than could be inspired by anyone of the constituent realities.\textsuperscript{150}

The Problem of Altruism

As we have seen, the hedonistic account of motivation presented problems when the utilitarians attempted to account for disinterested conduct. Bain attempted to remove the problem of disinterested or altruistic conduct from the purview of moral theory by distinguishing between duty—which constitutes morality—and merit—which involves action above and beyond duty:

Merit attaches itself only to something that is not our duty, that something being a valuable service rendered to other human beings... These are the objects of esteem, honour, reward but not of moral approbation. Positive good deeds and self-sacrifice are the preserving salt of human life; but they transcend the region of morality proper, and occupy a sphere of their own.\textsuperscript{151}

Bain seemed to have realized that the issue could not be dismissed so easily, particularly in a psychological work, and added a discussion of
disinterested action. Here he claimed, against John Stuart Mill, that the pleasure and pain connected with social feelings could not account for all cases of altruistic conduct. We must recognize another class of actions, he wrote, actions done to others, irrespective of either pleasure or pains; this alone is the pure or typical form of disinterested conduct, and without a certain share of this, society would not be held together./152/ As we have seen, Bain attempted to account for this class of actions with an ideomotor account of sympathy. He later recognized the weakness of such an account and postulated a social instinct to account for disinterested action. Postulating such an instinct, even if consistent with empiricism, is tantamount to rejecting the utilitarian view that individuals act solely according to self-interest./153/

Emotions versus Intellect:
The Disparagement of Emotion

Associationism has often been criticized as an overly intellectual account of the mind. A perusal of the works of those in the Utilitarian-Associationist tradition reveals that they did not simply neglect the emotions; they actively disparaged emotions because of their corrupting influence on thought. Of the individuals I am discussing, only John Stuart Mill actively sought the "cultivation of feelings," since he regarded them as the natural (and necessary) corrective to reason./154/ As we will see, Bain's views on the relative role of emotions and intellect in the human mind are entirely consistent with the traditional view./155/
There were many facets to Bain's view of the opposition of emotions and intellect, ranging from his description of the mode of nervous action of each through a typology of character based upon the dominance of either intellect, emotion or action in the individual. I will touch on several of these facets in what follows.

**Nerve Force in Emotion and Intelect**

In Bain's account of the mind both change of sensation and diffusion of nerve currents were necessary conditions for consciousness of any kind: intellectual, emotional or volitional. Emotional consciousness differs from intellectual consciousness in involving a wider centrifugal diffusion of nerve currents so as to involve muscles and other organs. Bain wrote: "with feeling there always is a freely diffused current of nervous activity, tending to produce movements, gesture, expression." Such movements, gestures, and expressions, he maintained, are a constituent part of the emotional consciousness because they are produced by the diffuse current that underlies the feeling. There are cases, he noted, where the feeling may be present when the movements and gestures are absent. Such cases, he explained, are due to the weakness of the diffused stimulus or to a voluntary suppression of the effects as when we stifle a laugh or hold back tears. In the functioning of the intellect the nerve force is far less diffuse, since it is discharged only to revive particular trains of ideas. Actually, it is only in special cases of ideation (i.e., the operation of fixed ideas in ideomotor action) that the revival of an idea is accompanied by the actual movements that are
The greater diffusion of nerve force in emotions implies that feeling will dominate and rapidly fatigue the mind. Because of this character, indulgence in emotions will preclude the effective functioning of intellect.

The Properties of Emotion and Intellect

In Bain's account, feeling and intellect have distinctive properties. Feeling is characterized by its quality (pleasure, pain, indifference) and its degree (intensity or quantity). The intellectual properties, on the other hand, include its susceptibility to discrimination and agreement and its degree of retainability (ideal persistence, and recoverability).

Since emotions are compounds of feelings, they are feelings that have been worked on by the intellect (i.e., by association). Feelings, however, enter differently into associations than do impressions. Although feelings are more diffuse and thereby associate themselves with a wide range of objects, it was Bain's view that any particular association involving feelings will take longer to form than one involving impressions. Furthermore, as emotions are full and intense, there will be a great difference between the ideal and the real forms of feelings. The difference accounts for the origin of desire. While our recollection of an emotion cannot at all reproduce the original experience, a closer approximation might be attained by acting out the external manifestations in order to revive the emotional state.
The Functions of Emotion and Intellect

In Bain's account of the mind, emotion and intellect had different spheres of activity, although emotion, volition and intellect all interact. Emotion played an important role in volition, providing the direction for the will. Both emotion and volition played a role in mental attention, which is simply the intellectual form of the operation of the will. Emotion also prompted the constructive activity of the imagination./166/ In all these cases, emotion played a facilitative role. Bain suggested that our emotional responses (taste) plus our "natural adhesiveness" (talent) will determine the direction our life will take. He noted that taste and talent do not coincide but added that when they do,

when the thing that fascinates the attention most, also coheres in the intellect best independently of this fascination, we have then the most effective combination that can exist for producing a great genius./167/

The Corrupting Role of Emotion

Nevertheless, the operation of emotion is not always so benign. Because of its diffusive character, an intense emotion will dominate the mind and circumscribe the operations of recall. Bain warned that

when an emotion possess the mind in anything like fury, nothing that discords with it can find a place, while the feeblest link of connexion is sufficient to recall circumstances in harmony with the dominant state./168/

While emotions may facilitate the recollection of certain ideas they block the recall of others. In this manner emotionally derived habits of thinking--e.g., the day-dreams of ambition--may be formed. Under the influence of such emotions, attention is drawn to objects and incidents
that serve to gratify it:

The associating link is soon forged in the hot fire of passion; and, after months and years of indulgence of a favorite emotion, a rich growth of the corresponding objects and ideas is formed and ready to flow out, at any moment when the feeling is roused. /169/

imaginative processes are also under the control of emotion. Bain, however, distinguished between imagination whose sole end is continuance of the inspiring emotion, and scientific or practical constructiveness, which is undertaken for some other end—truth or usefulness. /170/ Poetic flights of imagination do not inform us as to the realities of the world but merely gratify various aesthetic emotions—"the emotions of harmony, beauty, sublimity, picturesqueness, pathos, humour." /171/ The scientist, on the other hand, seeks an accurate and precise accounting of reality and employs "severe forms of an accurate terminology" in order to "seize the realities of nature with precision." /172/ Bain wrote:

It cannot be supposed that the utmost plenitude of poetic genius shall ever be able to represent the world faithfully, by discarding all these [scientific] devices in favour of flowering ornament and melodious metre. We ought not to look to an artist to guide us to truth, it is enough for him that he do not mis-guide us. /173/

Bain, like Bentham, was not a great fan of poetry. John Stuart Mill had urged him to read Wordsworth, but Bain was unable to develop an interest in the poet's work. /174/ Bain's criticism of poetry reiterates Bentham's view. Because poetry employs imprecise forms of language, and because it appeals to emotion rather than reason, it is likely to misguide us in our attempts to understand reality. /175/
Bain's concern about emotion as a potential corruptor or perverter of the truth can be seen clearly in his discussion of the influence of feelings on belief. As we have already mentioned, emotional states of mind may induce certain trains of thought while blocking others. Bain pointed out that

in a state of strong excitement, no thoughts are allowed to present themselves except such as concur in the present moods; the links of association are paralyzed as regards everything that conflicts with the ascendant influence, and it is through this stoppage of the intellectual trains that we come into the predicament of renouncing, or, as it is called, disbelieving for the moment, what we have formally felt and acted on. Our feelings prevent our convictions by smiting us with intellectual blindness.  

Insofar as emotions hold sway over thought they are antagonistic to the scientific spirit. Bain continued,

It is the nature of scientific truth to express with punctilious accuracy the order and sequences of the world, so that its statements shall hold good at all times and to all observers. The mind that is engaged in collecting the facts of nature for this purpose ought, so far as they are concerned, to be utterly devoid of emotional bias.

Emotional bias operates by leading us in certain paths of thought and preventing us from following others. But emotional energies also have a more general effect, being destructive of the discriminative capacities underlying intellect:

As the emotional fervour grows warmer, discrimination grows feeble and feeble; the mind is then a prey to confusion of thought, and all its consequences. Propriety and rationality of conduct subsist upon delicate distinctions; anyone in a fury of excitement is disqualified from such delicacy . . . The inability to discriminate and to identify the delicate features of things, whether from natural defect, or from the blinding of emotional excitement, has wide-reaching consequences for evil . . . . The confounding of things that differ, and the refusal to identify things that agree, being a bar to the correct knowledge of the world, deposit in the mind error for truth, seeming for reality; and the belief takes a corresponding turn.
Here the effects of emotion are depicted as outright immoral. Furthermore, Bain regarded this emotional form of consciousness as more fundamental than the rational mode of proceeding. He stated that "the scientific spirit is not natural to the human intellect," but something which must be cultivated./179/ A central part of the cultivation of rationality is educating individuals to repress emotional influences. Bain describes both direct and indirect methods for controlling emotions. Because the emotional state is dependent upon the diffusion of nerve currents, emotion can be suspended inwardly by being arrested outwardly; the currents of the brain, and the agitation of the centres, die away if the external vent is resisted at every point./180/

By controlling our movements and gestures—"for example, by putting on "a calm exterior while a fire is raging within"—we can rein in our emotions./181/ Bain admitted that this procedure may not always work. In some cases "an emotion may be too strong to be resisted, and we only waste our strength in the endeavor."/182/ In cases of strong excitement a release valve may be needed. Bain suggested that we "give way for a little while to the torrent, as the safest way of making it subside."/183/ Nevertheless, the systematic restraint of both weak and strong emotions should be attempted in order to develop habitual control of the emotions.

A less direct way of controlling the emotions is through our control over ideas (attention). As emotions become attached to objects, we may be able to control emotions by diverting the attention from the exciting cause, and, still more effectively, by forcing the thoughts into the opposite channel—as when we silence a querulous fit by coercing the mind into the act of considering the favorable side of our
situation./184/

From these discussions and from descriptions of friends and acquaintances in his Autobiography a pattern emerges. Bain appears to have felt that the rational and moral man was one who had his feelings under full control; that is, one whose mind was free from the perverting influence of strong feeling. A particular cluster of attitudes, shared by many in similar circumstances--James Mill and Leslie Stephen to mention two--seems to underlie this social attitude.

Such distrust of feeling and emotion appears related to an adopted atheism or agnosticism; that is, a rejection of the religion in which they had been raised and its associated emotionalism. Along with this went a heightened rationality and an intellectual chauvinism: a contempt for those who were prey to emotion./185/ I am highlighting this cluster of attitudes in Bain because I think they shackled his account of the functioning of the human mind. This becomes obvious when we look at his "personality theory"--his account of intellectual, volitional, and emotional temperaments.

Bain presented an energy model of the mind. When excess energy flows to the nervous system, it can be manifested in one of three forms--action, emotion, or intellect. The unequal manifestation of energy provides the basis for individual differences./186/ Bain wrote, "there is a real difference in the constitution of human beings, founded on the unequal predominance of the three great leading functions of the mind--Emotion, Volition, Intellect."/187/ Furthermore, there are tests to aid us in assessing the temperament of an individual. Bain suggested
that,

whether a person is Emotional, or Volitional in temperament, may be shown with great nicety, by the numerical or statistical test, applied to the whole manner of life. The one temperament is essentially inactive, given to emotional displays, as measured by mere continuance and repetition, and by the collateral test of sociability; the other is soon exhausted of demonstrative power, while eager and enduring in voluntary pursuit./188/

Such tests will not suffice for the assessment of the higher form of character: the intellectual temperament. Bain did describe different types of scientific minds including the objective (tending to mathematics and natural history) and the subjective (tending to mental philosophy). Again we see Bain's energy model underlying this distinction. He said,

Given a certain plastic energy of the mind, that energy will be directed either upon the object world, or upon the subject, or upon both in varying proportions. If there be an almost exclusive bent towards the outward, there will be the minimum of attention paid to the inner world of the subjective consciousness. If the outer world attracts us in only moderate degree, there will be large surplus of force available for the other./189/

This theory of temperament underlies his work on character. In the next chapter I will say more about his view of character, following a discussion of his account of volition.
NOTES FOR CHAPTER 4


2. Ibid., pp. 2-3.

3. Ibid., pp. 2, 4-5.

4. Ibid., p. 5.

5. Ibid., pp. 5-6.

6. Ibid., pp. 8-9.

7. Ibid., p. 11. Other observations cited include the fact that mental agitation or exertion brings on "aching or oppression in the head" (p. 10); the increase of alkaline phosphates in urine after mental exertion or excitement (p. 11), and research on nerve cords and nerve centers (p. 12).

8. Ibid., pp. 48-53.

9. Ibid., p. 52.

10. Ibid., p. 50.

11. Ibid., pp. 50-51.

12. Ibid., p. 51.

13. Ibid. Bain adopted the doctrine of correlation of forces presented by Sir William Grove on *The Correlation of Physical Forces* (1846).


15. Ibid., p. 52. See also ibid., pp. 337-38.

16. Ibid., pp. 52-53.

17. Ibid., p. 338. The centrality of the doctrine of "identical seats" for Bain's thought has been missed by contemporary commentators on Bain (e.g., Robert Young and Roger Smith) but was noted by James Ward. See his "Assimilation and Association (II)," *Mind* 3 n.s. (1894):510. In addition to other problems, this doctrine clashes with Bain's view of impressions and ideas as distinctively different.


20. Ibid., p. 346. There are some inconsistencies between Bain's motor theory of thought and the physiology underlying it. He pointed out that removal of the hemispheres abolishes "Memory, and all the powers characteristic of intellect or thought" and "volition, in the shape of purpose and forethought." Ibid., p. 45. Bain wrote, "the hemispheres . . . are doubtless the seat both of intelligence and nearly all the innumerable shades and varieties of sensation and emotion." Ibid., p. 46. On the other hand, he concurred with the view that the hemispheres were inexcitable, as mechanical stimulation produced neither sensation or motion. Ibid., p. 45. The corpora striata, located below the hemispheres, was regarded as highest seat of motor fibres until the work of Frisch and Hitzig in 1870 demonstrated the motor excitability of the cortex. Furthermore their findings, confirmed by Bain's former student Ferrier, were not incorporated into the Senses and Intellect until the fourth edition (1894).

The problem that concerns us here is whether, in light of contemporaneous physiology, Bain was justified in positing processes which represent movements in the hemispheres. That is, could one legitimately claim physiological support for a motor theory of thought prior to the discoveries of Frisch and Hitzig, or must we regard Bain's theory as going beyond the physiological evidence. If the latter is true, my argument that philosophical considerations played the major role in the formulation of Bain's theory receives further support.

21. Ibid., p. 341.

22. Ibid., pp. 342-45. Ideomotor action of this sort had been described earlier by James Mill who said, "By the attention fixed on the act, the ideas of the feelings, which precede the act, are so strongly called up by association that the act follows of course." Mill, Analysis of the Phenomena of the Human Mind 2d ed., 2 vols. (London: Longmans, Green, Reader and Dyer, 1869), 2:340.

23. Ibid., p. 344. As we have seen, spontaneity and ideomotor action were the only exceptions to this hedonistic principle.

24. Ibid.


26. Bain, Senses and Intellect, p. 346. This quotation indicates that Bain regarded physiology as relevant for his account of intellectual processes. This contravenes the account given by Robert
Young. He claimed that Bain

"neither could, nor wanted to, specify any details for the physiological basis of intellect. Only one thing was certain: it was not sensory-motor." Young, Mind, Brain and Adaptation in the Nineteenth Century: Cerebral Localization and its Biological Context from Gall to Ferrier (Oxford: Clarendon Press, 1970), p. 114.

I contend that this reading of Bain is as inaccurate as it has been influential. Young bases his claim partly on a letter written to Mill in 1851 where Bain stated, "I neither can, nor at present desire to, carry Anatomical explanation into the Intellect" (quoted in ibid., pp. 102-3.) Bain did claim that his account of intellect "proceeds entirely on the Laws of Association," but this claim served to differentiate his approach from the faculty approach. Bain, Senses and Intellect, p. iv. We have seen that Bain's doctrine of "identical seats" for impressions and ideas played an important role in the development of his motor theory of thought and we will see that Bain developed an organic theory of memory. In several concrete ways Bain employed the physiology of the senses as "a key to the intellect."

Young is correct in noting that Bain found no physiological evidence for a sensory-motor view of the intellect. This simply underscores the question of whether Bain's motor theory of thought had a physiological or a philosophical basis. (see n. 20 above on problems with Bain's physiology in this regard.)

27. Bain, Senses and Intellect, pp. 103-4.

"28. Ibid., pp. 76-77. Bain speaks of the "great antithesis of movement and sensation" as "the most vital distinction within the sphere of mind." Ibid., p. 77.

29. Ibid., pp. 74-75.

30. Ibid., p. 82. See also Mill, Analysis, 2:146-151 (n. 31), where muscular sensibility is described [by Bain] as the most accurate and reliable sense, because it is "the most uniform, the least variable" of all our sensibilities. Ibid., p. 147.

31. See Bain's note on Hamilton's distinction between the feeling of volitional effort and the muscular sense in Senses and Intellect, pp. 99-100.

32. Mill, Analysis, 2:142-163. George Grote wrote: "It is one of the many merits of Mr. James Mill's Analysis that he has paid more attention to movements and muscular sensibility, as elements of our consciousness, than philosophers had done before him." Ibid., p. 138.

33. Bain, Senses and Intellect, p. 91.
34. Ibid., pp. 94-95.

35. Ibid., p. 97.


38. Ibid., pp. 331-32.

39. Bain's view, shared by the German Wilhelm Wundt, was criticized by Bastian who coined the term *Kinesesthesia* for the (afferent) sensibility providing information about the position of and tension in our muscles. William James reiterated these criticisms in "The Feeling of Effort," Anniversary Memoirs of the Boston Society of Natural History, 1880.

40. Bain, *Senses and Intellect*, p. 59. The assumption that muscular feelings become attached to every sensation is extremely questionable. It is not clear what movements could be involved in obtaining sensations of smell, hearing and certain visual sensations (e.g., color).

41. Ibid., pp. 63-64.

42. Ibid. Bain's account of the nature of this stimulus—whether physical, organic or mental—is unclear. He cited Sharpey's edition of Quain's *Anatomy* which described stimuli such as those exciting convulsions as causes "which, although they may probably turn out to be physical, are as yet of doubtful nature, and these, until better known, may perhaps, without impropriety, be called organic stimuli." Ibid. Yet immediately following this quotation, Bain classified the spontaneous force with mental stimuli. On the whole his account of this force indicates that he regarded it as a physical or organic stimulus, not a mental one. See ibid., pp. 66, 73.

43. Ibid., pp. 64-65.

44. Ibid., p. 66.

45. Ibid., pp. 67-68.

46. Ibid., pp. 69-70.

47. Ibid., p. 70. See also ibid., p. 330. In *Emotions and Will*, pp. 314-15, he argues that only spontaneity can provide the "isolated prompting" of the muscles necessary for the commencement of movement. Here he was arguing against those who maintained that volition has its source in movement commenced under emotional excitement. James Ward later advocated this view.
48. Ibid., p. 73; Bain, *Emotions and Will*, p. 304. Although Bain placed much stress on this physical origin of spontaneity, at least one passage indicates other possible origins. He refers to spontaneity bred "not of repose and nourishment, but of an exciting cause, as the infection of a multitude or of some other powerful example." Ibid., p. 399. I would suggest that his desire to rectify the shortcomings of the Utilitarian-Associationist account of motivation frequently led him to overstretch the original concept of spontaneity.


50. Ibid., pp. 298-99. Bain wrote:

"Being dependent on the condition of the various nerve centres, the discharge is regulated by physical circumstances, and not by the ends, purposes or uses of the animal." (Ibid.)

Furthermore, since the discharge of spontaneous energy depletes the nerve centres and exhausts the force,

"mere spontaneity . . . stops short of what our volition does for us in the way of self-preservation; a power that dies out when action is most needed, cannot be the appropriate support of our existence." (Ibid.)

It is important to note that Bain did not regard the resulting movements as entirely random. He considered it highly probable that certain "primitive combined movements" were part of our "original endowment." Ibid., pp. 262-70.

51. Ibid., pp. 301-2. Bain noted that there were some exceptions to this law. Stimulation, either sensory or narcotic, may be pleasurable at the same time as it depletes the vital force. Ibid., pp. 293-95. Bain advised that such stimulants as alcohol, tobacco, tea, opium, hashish and betel-nut should be used moderately since,

"if we apply stimulants, up to a certain point, we do not dissipate force beyond what will be repaired; if we fall short of that point, we miss the pleasure that our frame is able to sustain; if we exceed the point, we run into a declension or degeneracy." (Ibid., pp. 294-95.)

52. Ibid., pp. 302-6. Bain asserts that instincts are "only phases or results of this fundamental property of mind," i.e., that instincts are acquired. Ibid., p. 305.

53. Bain described spontaneous movements as those "with regard to which, either no peripheral stimulus can be assigned, or the stimulus is insignificant compared with the energy of the response." Ibid., p. 258. This broad definition allowed him to invoke spontaneity as an explanation of an extremely wide range of behavior.
54. Ibid., pp. 51-52. Bain, writing about how this spontaneous tendency operates throughout life, asserted:

"There is nothing in all this that . . . takes human actions out of the sweep of law . . . The physical, or nutritive, stimulus is a fact of our constitution, counting at each moment for a certain amount, according to the bodily condition; and if anyone knew exactly the condition of a man or animal in this respect, a correct allowance might be made in the computation of present motives." (Bain, Emotions and Will, pp. 490-91).


"In spite of his teleological language, it is clear that Bain, influenced by the recently formulated Energy Conservation Principles . . . wants to find a 'mode of dealing with mind in correlation with the other forces' . . . . And his mode of so doing involves an energy model of motivation. That is, Bain conceives of the human being as an energy system and seeks to explain changes in activity as due to the quantity or distribution of energy in the system." (Ibid.)

56. Bain, Senses and Intellect, pp. 66, 73. But see n. 48 above for an apparent exception to his own account.

57. This is the objection voiced by James Martineau in "Cerebral Psychology: Bain," National Review 10 (April 1860):500-22. He wrote: "Though Mr. Bain grants us a spontaneity, he plants it where we have nothing to do with it, anymore than if our limbs were spasmodically stirred by galvanic touch." Ibid., p. 507. Bain commented on the objection in Senses and Intellect, p. 73.

58. A. P. Greenway in "The Incorporation of Action into Associationism: The Psychology of Alexander Bain," Journal of the History of the Behavioral Sciences 9 (1973):42-52 repeatedly makes this error. He speaks of Bain's "idea of mental spontaneity" (p. 45) of "spontaneous impulses of the mind" (p. 47) and of "his concept of the intellect as active and autonomous" (p. 48). However, Greenway can claim illustrious predecessors for this erroneous line of interpretation; J. S. Mill, for example, praised Bain for correcting the passivity of the earlier associationists by recognizing mental activity and spontaneity. Mill, "Bain's Psychology," Edinburgh Review 224 (October 1859), pp. 301-2.

The error seems to have arisen from assuming that which Bain explicitly denied—a functioning agent, self or ego, which originates these spontaneous activities. Martineau, "Cerebral Psychology," p. 502-4, 519; Mischel, "Hartley, Mill, Bain," pp. 143-44. Although Greenway noted Bain's failure to introduce an attentive subject, this does not prevent him from attributing a theory of mental activity to him. Greenway, "Action into Associationism: Bain," pp. 51-52.
59. Bain, *Senses and Intellect*, pp. 328-30. Exceptional circumstances include convulsions, spasms and states of unnatural excitement. *Ibid.*, p. 73. Bain attributed a still wider role to this power. For example, he claimed that childbirth is stimulated solely by the spontaneous discharge of the muscle fibres of the uterus which have grown to maturity during pregnancy. Bain, *Emotions and Will*, p. 304. The doctrine is also employed in the service of his temperament theory of character: "what may be called the volitional constitution is identical with a copious central emanation of active power." *Ibid.*, p. 313.


72. *Ibid*. Bain argued that teachers should take advantage of this early plasticity by focusing upon memorizing activities in the early years. *Bain, Education as a Science* (New York: D. Appleton and Company, 1896 [1879]), chap. 6. For Ward's criticisms of this view see Chapter 10 of this work, section entitled "Psychology and Education" below.


75. *Ibid.*, p. 455. The decay of mental acquisitions with time--expressed in the law of obliviscence--was the basis of James Ward's reconstructive view of memory. As we will see in Chapter 10, Ward argued that the practice necessary to prevent such decay should not simply reiterate the original order of the elements but should reorganize them according to deeper principles. Such a view had
epistemological implications that would have alarmed Bain and others in the Utilitarian-Associationist tradition.

76. On James Mill's account of memory see Chapter 1, section entitled "James Mill's Psychology" and Chapter 2, "John Stuart Mill's Psychology" above.

77. See Chapter 2, section entitled "John Stuart Mill's Psychology" above.


Bain attempted to fortify the notion of a phenomenal self by appealing to movement. He wrote:

"spectatorship of what is going on about us, does not express the whole current of our remembered existence; there is wanting the series of our own doings and transactions. When what we have done is added to what we have seen and felt, the history of self is complete." (Bain, Senses and Intellect, p. 450).

79. James Ward argued that it did. Among other things, he pointed out that Bain's sole criterion of retention was recall. Ward argued that there are other ways of demonstrating retention, including the methods we today call recognition and savings. Ward, "Assimilation and Association (II)," Mind 3 n.s.(1894):507-32.

80. Bain, Senses and Intellect, chap. 1, passim.

81. Ibid., pp. 409-12; Emotions and Will, p. 315.

82. Ibid., p. 458.

83. Ibid., p. 507. Here Bain implies that analogical reasoning has an essential role to play in scientific discovery. Such a view seems to conflict with his empiricism and positivism and, in other places, he does warn about the dangers of such "metaphysical" thinking. I have no explanation for this apparent conflict.

84. Ibid., pp. 511-24.

85. Ibid., p. 522.

86. Ibid., p. 523.

87. Ibid., p. 522.

88. Ibid., p. 523. The particular analogy he was criticizing was "the much more remote comparison between the growth of humanity as a whole, and the progress of an individual animal, or plant"; that is, the
doctrune that ontogeny recapitulates phylogeny. Ibid.


90. Bain, *Senses and Intellect*, p. 530. This suggests that in examining Bain's writings one might need to distinguish among illustrative, rhetorical and deductive uses of his material illustrations.

91. Ibid., p. 554.

92. Ibid., p. 556.

93. Ibid., p. 557.


95. Bain, *Senses and Intellect*, p. 557. Bain maintained that there was a reciprocity between intellectual and emotional energies, whereby one lives at the expense of the other. Bain, *Emotions and Will*, p. 521. He also made it clear that emotions wasted more of the limited store of energy than did intellectual processes. Despite his claim that the physical origins of emotion are obscure (Ibid., p. 70), Bain resorted to "physiology" to make his points about the draining effects of emotional indulgence. See section entitled "Nerve Force in Emotion and Intellect" below.


97. Ibid.

98. Ibid., p. 559.

99. Ibid., pp. 560-62. The "epicycles" are being employed here to save more of the appearances. See Chapter 1, n. 133 above.

100. Ibid., p. 548.

101. Ibid., p. 550. This focus upon *uses* is conceptually related to his emphasis upon movement and is an important component of the tradition of pragmatism that stemmed, in part, from Bain. See Max Fisch, "Alexander Bain and the Genealogy of Pragmatism," *Journal of the History of Ideas* 15 (1954):413-44.

102. Ibid., p. 599.

103. Ibid., p. 572.

104. Ibid., pp. 572, 591-609.
105. Bain, *Emotions and Will*, p. 2. This quotation is from *Philosophy of the Active Powers*, p. 2. The instrumental view of intellect clearly predates Bain.

106. As I have already noted, there were two exceptions to this principle: spontaneity and ideomotor action.

107 Ibid., p. 3.

108. Here he is employing the categories of analysis he generated in line with his "natural history method." See Chapter 3, n. 75 above.

109. Ibid., p. 78.

110. Ibid., p. 4.

111. Ibid., p. 70.

112. Ibid.

113. Ibid.

114. Ibid., p. 71.

115. Ibid.

116. Bain, *Autobiography* (London: Longmans, Green and Company, 1904), p. 80. Nevertheless, in *Emotions and Will*, Bain referred to the ability "to estimate quantity with precision" as "the feature constituting an exact science". This presented problems for a psychology of the emotions as the feelings do not admit of a quantitative treatment. However, Bain's objections to the use of mathematics in science appear to have been focused upon their use in lengthy derivations of laws from basic principles.

117. If, as I am arguing, Bain's appeals to physiology provide a measure of the difficulty of accounting for the phenomenon on Utilitarian-Associationist tenets, the emotions presented a serious problem for that tradition. Bain appealed to other objective correlates of emotion after reading Darwin's *Expression of the Emotions in Man and Animal* (1872). See *Emotions and Will*, 3d ed., pp. 38-63, 128-30, 173-76.


120. Ibid.
121. Ibid., pp. 15-17.
122. Ibid., pp. 15, 17.
123. Ibid., p. 17.
124. Ibid.
125. Ibid.
126. Ibid., p. 18.
127. Ibid.
128. Ibid., p. 19.
129. Ibid.
131. Bain, Emotions and Will, pp. 71-74. Bain equivocated concerning whether fear was as fundamental as love and anger. Ibid., p. 73.
132. Ibid., pp. 75-76.
133. This edition of the work included a chapter on evolutionary theory as applied to the mind. Ibid., pp. 47-68.
134. Ibid., p. 215.
135. Ibid.
136. Bain, Senses and Intellect, pp. 460-61. In this way Bain hoped to avoid the problem of positing a power in the mind to detect resemblance. The detection of similarity is simply a physical process. This strategem provides further evidence for my claim that Bain employed physiology to replace the faculties of the intuitionists.
137. Ibid., p. 460. The emotional consequences of this physical process are described in Emotions and Will, pp. 215-16. Bain claimed that this pleasurable surprise is one of the bases of the emotional satisfaction derived from intellectual labors. Ibid., pp. 216-17.
138. Ibid., p. 215.
139. Ibid., p. 265.
140. Ibid., p. 273.
141. Ibid., p. 280.
142. J. B. Schneewind, *Sidgwick's Ethics and Victorian Moral Philosophy* (Oxford: Clarendon Press, 1977), p. 177. Bain, however, disagreed with Mill's account of disinterested action, maintaining that such acts do not serve to achieve pleasure or avoid pain. Bain, *Emotions and Will*, pp. 294–96. While he held that such acts are not governed by the principle of utility, he also asserted that they transcend the region of morality. He wrote that while "positive good deeds are the preserving salt of human life... they transcend the region of morality proper, and occupy a sphere of their own." Ibid., p. 292. But Bain did not rest content with this "solution" to the problem. As we have seen, he provided a psychological account of the origins of sympathy that underlies disinterested action.

143. Ibid., p. 285.

144. Ibid. Like Bentham, Bain stressed the value of obedience.

145. Ibid., p. 286.

146. Ibid.

147. Ibid., p. 288.


149. Ibid., p. 290. Both James Mill and John Stuart Mill had employed the case of miserliness to exemplify their versions of the doctrine of functional autonomy.

150. Ibid.

151. Ibid., p. 292.

152. Ibid., pp. 296–97. Henry Sidgwick later noted that Bain was the only thoroughly honest utilitarian philosopher as he held that self-sacrifice constituted a "glorious paradox." A. Sidgwick and E. M. Sidgwick, *Henry Sidgwick: A Memoir* (London: Macmillan, 1906), p. 77. Nevertheless, Bain attempted to provide a psychological explanation for this "glorious paradox."

153. This revision was made in the fourth and final edition of *Senses and Intellect* (1894). Although I have no evidence of direct influence, his postulation of an instinct of gregariousness was consistent with new social and political philosophies stressing cooperation rather than competition.


155. Bain spoke of the "general reciprocity of the Emotional and the Intellectual energies, whereby the one lives at the expense of the other." Bain, *Emotions and Will*, p. 521.


163. Bain, *Emotions and Will*, p. 97. However at other points, chiefly when he is warning of the dangers of emotional indulgence, Bain spoke of the rapidity with which such links are formed. For example, he wrote that "the associating link is soon forged in the hot fire of passion." Bain, *Senses and Intellect*, p. 604.

164. Bain, *Emotions and Will* p. 97. Indeed our recollection of emotional states is always mediated by their association with intellectual states (sights, sounds, smells, etc.), as revivability is directly related to "delicacy of Discrimination" and feelings are not highly discriminable. *Ibid.*, pp. 90-91.


168. Bain, *Senses and Intellect*, p. 556. Bain described the "physiology" of such intense states of mind in the following manner:

"The nervous pressure is accumulated in some one region of the brain, in connection with one class of thoughts, any ideas belonging to that class will arise with facility, others of an incompatible kind are kept back." (Bain, *Emotions and Will*, p. 381.)

and he added,

"In such a state, the mind is no longer in its calm centre; the judgments and convictions are liable to perversion or bias. A sound decision supposes that the considerations on all sides come forward in their proper strength, which is possible only when the nervous currents are of equal intensity everywhere, giving birth to the condition denominated coolness, composure, the perfect balance of the mental and nervous system." (Ibid.)

170. Ibid., pp. 599, 605-7.

171. Ibid., p. 605.

172. Ibid., p. 609.

173. Bain, *Senses and Intellect*, p. 609. In an essay on metaphysics, Bain noted "a growing alliance and kinship between religion and poetry or art." He remarks that theology has two sides: a dogmatic or doctrinal side that is "precise, severe, logical" and a "sentimental, ideal, imaginative side that resists definition . . . and seeks only to satisfy spiritual needs and emotions." The task of the poet is "keeping up the emotional side, under all transformations of doctrinal belief." Bain, *Practical Essays* (New York: D. Appleton, 1884; reprint ed. Freeport, New York: Books for Libraries Press, 1972), p. 163.


177. Ibid., p. 22.

178. Ibid., p. 521.

179. Ibid., p. 22.

180. Ibid., p. 361. Bain asserted that because diffused nerve-currents are indispensable to the consciousness, "it is a law of our constitution that the inward wave tends to die away by being refused the outward vent; and with this the feeling itself disappears from the mind." Ibid. On this account, our ability to sustain thought appears inexplicable as it necessarily involves the arrest of "outward expression."

181. Ibid., p. 359.

182. Ibid., pp. 361-62.

183. Ibid., p. 361.

184. Ibid., p. 377.

185. The mentality I am describing has been ascribed to Scottish Presbyterians by Elie Halévy and to individuals from Evangelical backgrounds by Noel Annan and Christopher Harvie.
Halévy identified James Mill and Thomas Carlyle as prototypical cases of Scotsmen who lost their faith but continued to live out the instinctive asceticism characteristic of good Calvinists. He described the pattern of their lives:

"every poor Scotsman who desired to win through to success . . . is . . . sent to the university to prepare for ordination. But as he follows the lectures of Dugald Stewart, Thomas Brown, Playfair and Leslie, the student feels his orthodoxy undermined, abandons all thought of the ministry, and in search of an arena more worthy of his ambition goes up to London, where he will become a political pamphleteer or journalist, a government official, a statesman. He reaches the capital assured of his intellectual and moral superiority to the English around him. He does not distinguish between these two diverse species of excellence, and is apt therefore to believe that if he appears better endowed intellectually than others it is simply that his industry has enabled him to extract more profit from intellectual endowments common to all men alike. And this determination, as he is well aware, is the gift of his Calvinist education." (Halévy, History of the English People in the Nineteenth Century, 6 vols. 2d rev. ed. (London: E. Benn, 1949-1962), 1:467.)

and he added,

"In this way the Scottish Presbyterians, hard on others, hard on themselves, unweari'd thinkers, contributed to nineteenth-century England an element of intellectual virility which would have been wanting had the country been abandoned entirely to the emotionalism of the Wesleys and the Wilberforces." (Ibid.)

Analogous descriptions were given by Noel Annan and Christopher Harvie of those connected with the various Evangelical sects. Harvie asserts:

"Evangelicalism . . . took a personal toll. It seems directly to have imposed that element of rigor, of reserved, self-conscious detachment, that pervaded their lives." (Harvie, Lights of Liberalism: University Liberals and the Challenge of Democracy, 1860-86 [London: Allen Lane, 1976], p. 24)

Harvie also describes these individuals as "utterly distanced from ordinary human sensibility" and suggests that

"this was a direct response of the individual's mind being loaded with the responsibility for its own salvation, which the secularization of the Evangelical impulse only increased, as the rational individual became the denominator of utilitarian politics. Individualization served the academics well in producing that strong, sharp intellect--what Leslie Stephen called the "masculine mind"--which could plough its way through, in Stephen's case, ethics, politics, economics and literary
criticism. However, it also separated them from the political mores of ordinary people." (Ibid., p. 25.)

Harvie's analysis raises several provocative issues. It was the doctrine of salvation which sorely vexed Bain in early years and prevented him from becoming a member of the church. Furthermore, John Stuart Mill, who escaped these religious doubts, was evaluated by Stephen as "one who was in character as much feminine as masculine" and as having "some of the amiable weaknesses which we at present... regard as especially feminine." (Leslie Stephen, The English Utilitarians, 3 vols. (London: Duckworth, 1900), pp. 71-74.)

186. Bain, Emotions and Will, p. 95.
187. Ibid., p. 35.
188. Ibid., p. 36.
189. Bain, Senses and Intellect, p. 443.
CHAPTER 5

ALEXANDER BAIN:

III. PSYCHOLOGY: VOLITION AND APPLIED PSYCHOLOGY

Will

Volition: its Origins and Development

Bain's account of the origin and development of volition represents an extension of the associationist tradition. That Bain found this facet of the human mind problematic is clear; his treatment of the will underwent multiple revisions prior to publication and in successive editions of both works./1/

Origins: Spontaneity

In Emotions and Will Bain elaborated upon the account of the will sketched in Senses and Intellect. As we have already seen, Bain located the first stirrings of volition in an inherent spontaneity of the muscular system. This spontaneity arises when the organism is properly fed and rested; it constitutes "a central fire that needs no stirring from without."/2/ The force with which this energy is discharged will be conditioned by (1) the natural vigor of the constitution, (2) the state of excitement of the nervous system and (3) the action of mental stimulants such as pleasure, pungency, and mild levels of pain./3/
While these spontaneous discharges are random at the outset they do occur along tracks determined by our muscular organization. In Bain's words,

the central brain can discharge its power in solitary streams for the stirring up of single movements and ... while a great number of outlets may appear to be open, one is preferred to the exclusion of the rest.\(^4\)

He also pointed out that organs differ in the degree to which they can be isolated, thereby differing in the degree to which they can be brought under voluntary control.\(^5\)

**Origins: self-conservation and association**

This primitive spontaneity is regarded by Bain as the first component of will. The second component is the natural link between feeling and movement expressed in the law of self-conservation: pleasure leads to increased vitality, resulting in the continuance of movements; pain leads to diminished vitality, resulting in the abatement of movements.\(^6\) The third, and final, component is the "cementing process which gives them a definite and purposed direction"—i.e., contiguity.\(^7\) Bain wrote that

a few repetitions of the fortuitous concurrence of pleasure and a certain movement, will lead to the forging of an acquired connection, under the Law of Retentiveness or Contiguity, so that, at an after time, the pleasure or its idea shall evoke the proper movement at once.\(^8\)

Contiguity is the force that seizes upon and stamps in successful chance encounters. In speaking of the acquisition of voluntary control of speech, Bain wrote that "we cannot force on the exact utterance, by never so much importunity; we can only clutch the occasion of its spontaneous rise, and drive home the associating nail."\(^9\)
Bain insisted that voluntary control over movements of all types is acquired wholly through trial and error. Individuals who maintain that such control involves an original component of conscious control (i.e., control by the ego) appeal to the consciousness of effort we sense when we deliberately try out tentative movements and consciously vary them to achieve a particular end. Bain maintained that such conscious control is wholly acquired, not original, although he conceded that it might have instinctive origins in the form of feeble tendencies. In any event, he denied that the consciousness of effort was primordial and denied that it could operate independent of the law of self conservation.

Another apparent anomaly, on Bain's account, stems from the versatility and ease with which, in our mature life, we are able to employ our voluntary power. Against this objection to his account, Bain asserted:

We have good reason to suppose that the forming of one volitional link renders it easier to fall into a second, although in a quite different region. The increasing facility may grow out of various circumstances, ... but I apprehend that the mere experience in associating movements with feelings gives a growing distinctness to the act and that the earliest are in every point of view the most difficult.

The alternative view of volition as a primordial ability is also supported by our phenomenal experience. The power underlying our conscious control and direction of movement has a unity, a seamless quality that belies Bain's patchwork account of its growth. Despite this appearance, Bain insisted that

the will is a machinery of detail ... The fancied unity of the voluntary power, suggested by the appearance assumed by it in mature life, when we seem able to set going any action on the slightest wish, is the culmination of a vast range of detailed
associations whose history has been lost sight of, or forgotten./12/

This "machinery" of the will encompasses "guiding antecedents" as well as "determining motives." The guiding antecedent is an internal representation of the movement to be enacted; an idea formed by associations between the sight of the action, the muscular sensibility accompanying the action and "the central impulse that gives the direction and degree proper for the performance of the act."/13/ Bain wrote,

The mind is largely filled with associations of this nature, connecting every conceivable motion or position of all the organs with the precise impulse for realizing them, provided only that the proper instigator of the will is present./14/

To set the will in motion, a determining motive—some pleasure or pain, actual or ideal—is also required. Bain claimed that,

without some antecedent of pleasurable or painful feeling—actual or ideal, primary, or derivative—the will cannot be stimulated. Through all the disguises that wrap up what we call motives, something of one or other of these two grand conditions can be detected./15/

Although there were certain exceptions to this principle including "never-dying spontaneity, habits and fixed ideas" these exceptions were explicable on other grounds. Nor, as a general rule was there any gap or "immediate machinery" between the determining motive and the action./16/ There is no chink in the mechanism into which the ego, or free-agency, can fit itself. The stamped-in associations proceed automatically unless interfered with. Nevertheless, Bain pointed out that such interference occurs rather frequently. It takes the form of conflict between "native and firmly-rooted prompting[s]"—as when a sudden pain checks a movement that had been prompted by pleasure—or the
form of conflict between competing motives./17/ Such conflicts will be discussed below in their bearing upon moral conduct.

Volitional Control of Emotion and Thought

Bain described the operation of the mature will, paying special attention to the control we have over our emotions and over thoughts. Since Bain restricted the power of the will to control over voluntary muscles, any control we can exert over the emotions or thoughts must be achieved through that medium./18/ As we have seen, Bain asserted that we can control our emotional states by restraining their manifestations.

By such means

the will, operating through its own proper instruments, the voluntary muscles, reaches the deep recesses of emotion, and, by stilling the diffusive wave, can silence the conscious state maintained by it./19/

The facility with which an individual controls emotional outbursts, Bain alleged, provides a good index of the volitional power of his character.

Attention

Attention, or the voluntary control we have over our thoughts, does not, at first sight, seem explicable on Bain's account of the will. If the influence of the will is restricted to voluntary muscles, how can it influence trains of ideas? Bain circumvented this problem with his motor theory of thought: all ideas have a muscular component which can be operated upon by the will./20/ The voluntary control of our thoughts involves the very same processes as the voluntary control of perception./21/ Bain commented:

dthis is not by any means an early or an easily attained aptitude, but when the time arrives for possessing well-formed
ideas of things—things seen, heard, touched, &c.,—there is scope for the process of voluntary selection; a spontaneous power in the right direction manifests itself, and is held fast by the urgency of some present feeling./22/

The feelings that determine the movements of attention are derived from two sources. In the first instance, our attention is drawn to those effects which are most pleasurable or most intense, and drawn away from those which are painful./23/ The ideal forms of these feelings, of course, operate in the same fashion. A second type of determinant is provided by the operation of similarity—we identify an element of the present with a similar element from the past. For example,

we think of the round form of a shilling, when the shilling recalls the collective past impression of round things . . . This is a purely intellectual determination; yet it is often the cause of our attending to one quality rather than to another for the time being./24/

The operation of similarity is involved in this fashion "when a voluntary preference induces attention"; our attention is fixed by trains of ideas (or partial ideas) called forth by similarity./25/

The control we have over "the stream of images and recollections arising in the mind"—the "power of arrest and selection"—is extremely important in all the affairs of life. For any practical purpose a moderate degree of such control is required; more highly developed powers may even compensate for emotional or intellectual deficiencies./26/ Although complexly interwoven with our intellectual character, attention is entirely a volitional phenomena; and like all volitional phenomena is acquired, not primordial: "The promptitude that we display in setting aside or ignoring, what is seen not to answer our present wants is volition pure perennial and
unmodified."/27/ Furthermore, its operation is determined in the same fashion as the operation of the will in the sphere of movement:

No formal resolution of the mind, adopted after consideration, or debate, no special intervention of the "ego," or the personality, is essential to this putting forth of the energy of retaining on the one hand, or of repudiating on the other, what is felt to be clearly suitable, or clearly unsuitable, to the feelings or aims of the moment./28/

Volition and Conflicts of Motives

The control that attention gives us over trains of our ideas may aid us in control of our emotions. We may, for example, be able to quell a threatened outburst of laughter with the aid of such control for "by carrying the mind away to some quarter of seriousness, the central emotion is allayed and the currents dried up at the fountain head."/29/ Nevertheless, the voluntary command we have over our thoughts is not all-powerful. Very strong associations, for example, may counteract volitional efforts./30/ More frequently the interfering effects of strong emotions will act to thwart the voluntary command of thoughts./31/ Bain depicted the mind as an arena of conflict with victory always going to the strongest force. He declared:

The inner life of every one is a sort of battle ground, or scene of incessant warfare; and the issues of these recurring contests are momentous both to the person's self and to other beings. The estimate that we form of any creature as an agent, depends upon the motives that predominate in the actions of that creature./32/

Furthermore, the chief aim of education is to develop the strength of certain motives relative to others and the chief task of moral duty is to maintain (or correct) this proper balance of motives./33/ Bain remarked that because morality, education and the evaluation of character rest upon considerations concerning the proper ranking of
motives, special attention must be paid to means of handling conflicts of the will. To this end, he turned to an examination of deliberation, resolution and effort and how these relate to his account of moral conduct.

Deliberation

Although Bain was willing to admit the existence of mental processes denoted by the terms deliberation, resolution and effort, each of these was reinterpreted in mechanistic terms. For example, deliberation was depicted as a voluntary act taking place when there are conflicts among motives. Of course, on Bain's account such an act requires its own motive. Bain posited a motive of deliberation which he described as based upon "the prompting of probable evil, from giving way to hasty decision." This motive serves to arrest action, allowing time for an estimation of the pro's and con's of various courses of action. When nothing new can be added to the "ideal conflict,"

the case is then closed, and the restraining power suggested by the anticipation of evil ceases to operate, leaving the will to follow out the side of the case that has mustered the strongest sum total of motives.

According to Bain, our ability to deliberate removes us from the promptings of "isolated or individual impulses;" thereby providing us with the potential for conduct of a higher moral cast, wherein we take greater account of "our interests or happiness on the whole."
Resolution

Bain next turned to an analysis of resolution, an act that, like deliberation, certainly appears to involve an intervening power influencing the sequence of motive and action. As in the earlier case, Bain denied that any such intervening power exists; the apparent hiatus was fully filled with intermediate machinery.

Bain first described the phenomenon of resolution. He pointed out that in some cases the deliberative process will determine a course of active that is to take place in the future. In such cases action does not immediately follow the strongest motive—there is a delay. Resolution, Bain asserted, is the name given to this unexecuted determination. But, he pointed out, this phenomenon requires no mysterious, transcendental explanations. What fills the gap is simply another preliminary volition,

the act of looking out for, watching or waiting the moment, known as proper to commence the main operations . . . . Resolution, therefore, means the preliminary volition for ascertaining when to enter upon a series of actions necessarily deferred./39/

Sense of Effort

Finally, Bain turned to an analysis of effort. This construct was important in nineteenth century thought, because many individuals had claimed that our consciousness of effort was the source of our notions of power and causation; or, in other words, that mental activity is the prototype for our concept of physical activity./40/ In addition, consciousness of effort was cited as incontroversible evidence for
free-will./41/ Bain had to provide an alternative explanation for our sense of effort in order to defend the Utilitarian-Associationist tradition against the claims of intuitionistically-oriented psychologies.

Bain's account stated simply that what we call "effort" is nothing more than the muscular consciousness accompanying voluntary activity. He employed the feelings-of-innervation account of muscular sensibility to explain the course of our sense of effort. According to this account every motor discharge is accompanied by a central awareness of energy expended—our sense of effort. This sense of effort is heightened by painful opposition to activity. The fully developed sense of effort involves "conflict between a motive urging us to act, and a muscular or other pain that would keep us from acting."/42/ Effort, however, involves nothing over and above the conflict of motives:

The greatness of the effort, the persistence in it, the renewal of it, with accumulated energy, are (to appearance at least) governed by the strength of the motive, and the chances of finally overcoming the resistance. Our strivings after anything are the measure of the value we put upon it... if we do not put forth in accordance with the value of a thing, it is because we do not adequately feel it; and the motive needs to be strengthened by a course of reflection if we do feel the motive, and do not act accordingly, there is something defective in our constitution, which may or may not be remediable, but the remedy, whatever it is, can be assigned and reasoned about like any other phenomenon of cause and effect./43/

In this account of effort, Bain was reiterating the traditional "determinist" argument against free will; that is, stating that there can be no action for which there is not a sufficient motive. In all of these accounts Bain took a position which supported the experientialist view of the mind against the intuitionist.
The Nature of Cognition: Teleology or Mechanism?

Thus far I have maintained that Bain formulated an entirely mechanistic account of thought and conduct. However an apparently anomalous depiction of the mental processes appeared in the third edition of *Emotions and Will* (1875). There Bain asserted:

The cognitive process is essentially a process of selection, and takes place as the mind is moved to special, or monopolized, consciousness of certain portions of its various experience.

This passage suggests that Bain held a much more active view of the thought processes than I have been maintaining. Let us examine his writing on his point more closely.

Bain commenced this section by remarking on the controversy among philosophical schools concerning the act of knowing, "one affirming that all knowledge is derived through sensation, the other that the mind contributes a constituent part." Bain took sides with the first school with the proviso that "all we derive from the feelings of movement," be included as sensation. But, he added, sensation in and of itself does not yield knowledge. In the first place, "we must be discriminatively conscious of different mental states, before we can either perceive or know." A discriminating consciousness is a necessary condition of knowledge.

Secondly, "knowledge is far from being coextensive with sensation, or with distinguishable consciousness." The range of sensation is far wider than that of knowledge; "it is only a very small selection of these [differing sensibilities] that any one person converts into
knowledge, or couples into credible affirmations. "Herein lies the need for "a specializing, or selective, consciousness."/50/ Bain also observed that,

different minds have different motives for selecting from the countless multitude of impressions that we are all alike open to. It is, therefore, part of the problem of knowledge, to ascertain what are the motives to the specialized consciousness, or the forces governing attention, as something over and above disinterested and equal sensation./51/

At this point, Bain indicated the real nature of the processes underlying this apparent teleology. Bain wrote that "these specializing forces are nothing new in the exposition of the mind. They are mostly reducible to a greater degree of those general influences already detailed," i.e., the intensity of objectively determined and subjectively determined "shocks."/52/ There is, however, one final characteristic of the intellect that plays a role in specializing knowledge: the fact that our knowledge is relative./53/ Bain's law of relativity asserted that change in sensation is necessary for us to be conscious of that sensation. This law implies that change is a necessary condition of full consciousness. Because of this, a particular idea will have its nature altered by the similar and contrasted ideas lying alongside of it. Knowledge always arises within the context of several ideas: a "foil" or "complement" is wanted to raise sensation and perception to knowledge./54/ Language is a tool which aids in this process: "hence to be born under a copious language, or to live in the circles of learned converse, is to be rendered mentally alive to a larger class of our impressions."/55/
While Bain flirted with a teleological view of the mind it is clear that his intentions should not be taken seriously. The conditions governing "selection," (which is merely cultivated discriminative power) are all circumstances in our environment. As James Ward later asserted, it is impossible to speak of selective functions of the mind, while denying that there is a subject selecting.

Moral Habits and Volition

Bain's account of the moral habits is of interest for several reasons. In Bain's view the formation of moral habits by association provides a means of gaining ascendancy over imprudential volitions./56/ This provides Bain's clearest statement of how psychology might be employed in the service of morality. Furthermore, Bain articulates his social values in his account of desirable moral habits./57/ Finally, the historical value of the chapter should be noted, as William James relied heavily upon it in the preparation of his own account of the moral habits./58/

The task of forming moral habits is most urgent in cases where there are actual or potential conflicts between opposing motives. In undertaking such a task, Bain advised that

it is necessary, above all things, in such a situation, never, if possible, to lose a battle. Every gain on the wrong side undoes the effect of many conquests on the right. The essential precaution, therefore, is, so as to regulate the two opposing powers that the one may have a series of uninterrupted successes, until repetition has fortified it to such a degree as to enable it to cope with the opposition, under any circumstances./59/
The two main conditions for the formation of such habits are "an adequate initiative" and "an unbroken persistence." One must initiate such changes with vigor, backing up the initiative with either external compulsion, social coercion or the force of one's own volition based upon a clear recollection of pleasures and pains attached to various courses of action.\(^{60}\) Since the formation of new habits is so slow, backsliding is very injurious to the process; the persistence of years is generally required to alter our constitution in some fashion.\(^{61}\)

The particular habits cited by Bain to illustrate this general process of growth also reveal his social values. Habits of temperance such as rising early, obedience (as opposed to self-will) and control of excessive emotions are stressed. Bain declared that the systematic calming down of physical excitement cannot be over-inculcated in education, nor too strongly aimed at by each one's own volition. The human powers attain their maximum of efficiency only when a confirmed superiority is gained over flurry, excitement, needless fears, and extravagant ebullitions, but, as this is a triumph over one of the very greatest of human weaknesses, the whole force of favouring circumstances must chime in with the acquisition.\(^{62}\)

Also aiding in the attainment of maximal efficiency for the human powers are habits involving the control of attention, restraint of emotions associated with action and cultivation of emotions of the intellect.\(^{63}\) One must acquire a resistance to the "solicitations of sense" since if there not be the presence of some more powerful agency, either of volition, or of habit, the mind and the activity are constantly tossed about by it in a multitude of directions.\(^{64}\)
Furthermore, we must acquire the power of resisting the stream of ideas brought forth by association. In the first place it is desirable to have the ability of concentrating "upon one subject as against wanderings, digressions, and chance solicitations, a thing difficult to compell in early life and in untutored minds."/65/ Secondly, the power of dismissing a subject from the mind is quite desirable as "to be absorbed with a matter of business, after it has ceased to be of any practical import, or to keep the thoughts going upon it, is a weakness to be overcome if possible."/66/

The emotions of action—pleasure associated with pursuit (sport) and plot interest (story)—often require restraint "as engendering a species of dissipation inconsistent with the sober engagements of life."/67/ On the other hand, the emotions of the intellect should be cherished:

A congenial atmosphere of society, access to books and means of culture, freedom from cares, and the absence of strong competing tastes, would enable one to cultivate to advantage the original germs of curiosity and of the love of truth and consistency implanted by nature./68/

Bain also noted that we can cultivate habits of controlling spontaneity; of suppressing or drawing out movements prompted by spontaneity or of altering the manner of expression of such movements./69/

Finally, Bain mentioned a number of social habits that could (and should) be cultivated: the habit of authority (in opposition to our tendency to sympathize with our fellow-beings), habits of promptitude, activity and alertness and habits of grace and polite
Such accoutrements as these befit a man of industry in whatever sphere.

The picture that emerges in Bain's account of desirable moral habits is that of an individual with temperate personal habits and the ability to control one's emotions as well as to command one's thoughts. Such an individual is industrious and productive, resisting the dissipation of energies by diverting them into worthwhile channels. The individual should be obedient and willing to submit to authority, but should also be able to assert his own ascendency should circumstances demand it.

With respect to formation of such habits, Bain's earlier comments apply here. The case of habit formation depends upon the "plastic power" and plasticity is, in part, a function of age. The earlier such training is commenced, the greater the likelihood of success. Alteration of habits, when plasticity has diminished is a much more laborious process and demands a greater force of initiative in order to maintain the new regimen until the habits have required the necessary strength. Education should focus upon placing the individual energies into the correct tracks from the outset.

The formation of such moral habits lies at the heart of the development of self control, constituting our sole power of self determination. It is through the formation of such habits of restraint and command that we acquire the volitional abilities generally cited as evidence for the existence of free will.
Liberty and Necessity

The Problem of "Free" Will

Bain's account of liberty and necessity followed along the lines laid down by the Utilitarian-Associationist tradition, but he was critical of John Stuart Mill's claim that we have a power of self-determination. Bain began his account by denying that the nature of the will somehow renders it inexplicable on scientific grounds. In principle, he asserted, a scientific account of the will is possible, although it might be difficult to formulate. It was Bain's view that such difficulties, stemming mainly from the complexity of determinants of the will, have been mistakenly erected into insuperable barriers. Bain queried,

to what fatality is it owing, that an enormous theoretical difficulty, a metaphysical dead-lock, a puzzle and a paradox of the first degree, an inextricable knot, should have been constituted where in practice the worse to be said is, that the number and complication of motive forces may elude our knowledge, and render prediction uncertain and precarious.

Following the analysis of his predecessors, Bain identified linguistic confusions as the main source of problems in accounts of the will:

To demand that our volitions shall be stated as either free or not free, is to mystify and embroil the real case, and to superadd factitious difficulties to a problem not in its own nature insoluble. Under a certain motive, as hunger, I act in a certain way, taking the food that is before me, going where I shall be fed, or performing some other preliminary condition. The sequence is simple and clear, when so expressed; bring in the idea of Freedom, and there is instantly a chaos, an imbroglio, a jumble.

Freedom, Bain asserted, is simply a metaphor. Error arises when people convert this metaphor into scientific language and demand a decision.
concerning whether or not the will is free. Pursuing the same line of faulty thinking,

we might have had controversies as to whether the will is rich or poor, noble or ignoble, sovereign or subject; seeing that virtue has been said to make men, not only free, but rich, noble and royal; all which would have ended in transcendental mysteries from the same impossibility of reconciling them with the facts, or of assigning a decisive reason in favour of one or other of the contrasting epithets.

The real issue, he asserted, is whether the doctrine of uniform causation applies to human actions; whether there is invariable sequence in human actions. Put in this form the issue is legitimately debatable: "it is competent for anyone to constitute the human Will a realm of anarchy, provided he thinks there are facts that bear out the conclusion." Bain, on the other hand, felt that the facts support a different conclusion as "we have examined a very wide portion of natural phenomena, both in matter and mind, and ... no case of anarchy has ever yet been lighted on." Therefore, the doctrine of uniform causality may be presumed until such time as a definite exception surfaces.

Bain continued his analysis with an examination of terms that have been used to denote volitional freedom (spontaneity, self-determination) and the evidence appealed to in favor of its existence. With regard to spontaneity, Bain reviewed his account and asserted that "the spontaneous tendency operates all through life, and has a definite influence upon the actions." As I have already noted, its influence is largely restricted to the modulation of well established actions and it can not be regarded as an uncaused originator of action. Bain asserted,
there is nothing in . . . [spontaneity] . . . that either takes human actions out of the sweep of law, or renders liberty and necessity appropriate terms of description. The physical, or nutritive, stimulus is a fact of our constitution, counting at each moment for a certain amount, according to the bodily condition; and if anyone knew exactly the condition of a man or animal in this respect, a correct allowance might be made in the computation of present motives./84/

The Denial of Self-Determination

According to Bain, self-determination can only mean the "opposition of permanent and enduring motives to temporary and passing solicitations."/85/ Bain was critical of those who employ the term with "a lurking reference to some power behind the scenes, which cannot be stated under the form of a specific motive or end."/86/ Such individuals imply that there is an "inscrutable entity in the depths of one's being, to which the name I is to be distinctly applied" and which plays an important role in our functioning./87/ If this is so, remarked Bain, the analysis of the human mind is not exhausted by the accounts of feeling, volition and emotion undertaken in his work:

A fourth or residual department would still need to be constituted, the department of "self" or Me-ation, and we should set about the investigation of the laws (or the anarchy) prevailing there, as in the three remaining branches./88/

Bain instead harkened back to the earlier anti-metaphysical position of Bentham and James Mill, denying that there is any such residual department of the mind. He wrote,

in the setting up of a determining power under the name of "self", as a contrast to the whole region of motives generated in the manner described, I see only an erroneous conception of the facts. The proper meaning of self can be nothing more than my corporeal existence, coupled with my sensations, thoughts, emotions, and volitions--supposing the classification exhaustive, and the sum of these in the past, present and future./89/
Self-determination, Bain concluded, is merely a loose expression for the ordinary course of the will./90/ Our actions are connected with antecedents--our motives. In the majority of cases such antecedents can be traced and assigned, and we are justified in presuming that all cases agree with the majority until such time as exceptions may be documented./91/

Free Will: The Evidence of Consciousness

Finally, Bain addressed the most compelling argument posed in favor of free will--the argument based upon our consciousness of freedom. In the third edition of *Emotions and Will*, Bain addressed the form of this argument that had recently been proposed by Henry Sidgwick./92/

Sidgwick had asserted that in moments of deliberation we have an incontrovertible awareness of freedom of will. Such freedom does not manifest itself in action (muscular movements) or in control of our thoughts and feelings (attention), but rather in a series of decisive resolutions that can lead to alteration of character. It was Sidgwick's contention that the decisive resolve to alter some aspect of one's character is an act of freedom./93/

In the first place, Bain pointed out that Sidgwick's argument was unique in addressing a specific limited aspect of consciousness, and commented that agreement concerning the contents of consciousness might be a desideratum for those who employ this argument for free will./94/
Bain's own account of the process of deliberation has already presented. We saw that in this process action is suspended for a time to permit the individual to assess good and evil consequences of each possible course of action. At a certain point this process of deliberation is halted, whereupon volition follows the strongest set of motives. Bain believed that the alteration of character may involve such a deliberative process in which the motives for good are "powerfully wrought upon, so as to attain a high pitch of motive efficiency."/95/ While he admitted the psychological distinctiveness of the "peculiar movement, jerk or jump, that constitutes a decisive Resolution," he was unwilling to concede to Sidgwick that such an act is truly free "from the influence of every mental antecedent."/96/ Bain argued that the testimony of immediate consciousness cannot be incontrovertible because our perspective is limited at the moment of self-conscious observation. We must broaden our perspective. Instead of "thinking of self, in the moment of deciding, [we must] review the course that has been gone through."/97/ According to Bain, we will then find that, "we cannot remember that we made a bolt in the direction of virtue without feeling a corresponding strength of virtuous motive."/98/ Bain wrote: "I think the onus is on him [Sidgwick] to show that this [bolt] is a case of Free-Will, according to some definite statement of what is meant by the doctrine."/99/

None of the arguments that Sidgwick adduced for the freedom of the will altered Bain's position. He continued to adhere to the deterministic viewpoint of his forebears, not even accepting the chink proposed by John Stuart Mill in the form of self-determination.
Bain's Account of Belief

Bain did depart from his forebears in his discussion of belief. As I have already pointed out, belief is the epistemological foundation of knowledge for empiricists. In shifting the account of the development of belief and the criterion of belief, Bain was introducing a new perspective into the empiricist tradition. I will argue, however, that some such shift was necessary because of problems in James Mill's account of belief.

James Mill claimed that belief arose when ideas became associated so closely as to be indissoluble. Frequent pairing of such ideas, with no instances where they are unpaired, produces belief. John Stuart Mill criticized this account of belief, noting that there are cases of inseparable association without an accompanying belief and cases of belief without an accompanying inseparable association. Inseparable association is, therefore, neither a sufficient nor a necessary condition of belief. John Stuart Mill concluded that belief must rest upon an inexplicable element that also serves to distinguish memory from imagination.

Bain asserted that there is an additional component in belief above and beyond association, but, against John Stuart, he held that this component is in no way inexplicable. Criticizing James Mill for his overly intellectual account of belief, Bain stressed the importance of action as "the basis, and ultimate criterion of belief." He wrote: "Preparedness to act upon what we affirm is admitted on all hands"
to be the sole, the genuine, the unmistakable criterion of belief."/105/ But while readiness to act is the criterion of belief, all beliefs contain "as a necessary element, some cognizance of the order of nature, or the course of the world."/106/ Belief necessarily has an intellectual aspect. Bain wrote that

nevertheless, we must not depart from their reference to action, and the attainment of ends, otherwise they lose their fundamental character as things credited, and pass into mere fancies, and the sport of thinking./107/

As belief means the confidence we have concerning some particular order of nature, the real opposite of belief is doubt or uncertainty, not disbelief./108/ Thus belief admits of degree, varying across beliefs, across individuals, and within the same individual, across occasions. The two extremes of belief—total assurance and total distrust—are rarely met because we are not omniscient; our knowledge is usually imperfect./109/ Bain pointed out that the theory of probability supposedly provides a guide to the mind in such conditions of uncertainty, but noted that most minds would be unable to adhere to such objective estimates./110/ Suppose, he said, before undertaking an excursion we made detailed observations of weather signs and conclude that the day will almost certainly be fine. Rationally, we ought to adhere to this conclusion, unless new information appears:

Yet the best disciplined mind is liable to fluctuations of belief without any change in essential circumstances. The passing of a cloud across the sun, although quite compatible with our calculations, and admitted by us to be so, for the moment depresses our tone of confidence; while the dispersion of the cloud, for the time, unduly elates us./111/
Here Bain was making some rather astute observations about the workings of our minds. However, it is clear that he is treating belief as a psychological phenomenon, not as an epistemological one. The associationist account of belief was first developed, in part, to provide an explanation of how "necessary truths" (laws of mathematics and laws of nature) might be derived from experience. Bain's account of belief leads to a rather anarchic depiction of knowledge; with beliefs buffeted around by a large variety of non-rational circumstances.

Belief Formation

As Bain's account is a psychological one it is not at all surprising that he offered an account of the process of belief-formation. The fundamental factor in belief formation, according to Bain, is our primitive credulity: our tendency to believe whatever is. In the first version of his account of belief, Bain identified primitive credulity with the spontaneous activity of the brain, and full-fledged belief with that phase of the development of volition in which an idea of an end has gained command over the action to attain that end. This formulation was set aside in favor of a purely psychological formulation, in which primitive credulity is simply a state of mind consisting of unbounded confidence.

In this latter account the full-fledged state of belief is attained when this unbounded confidence is challenged, "when we suffer the shock of a contradiction, a check or disappointment in some career of activity." Such thwartings introduce a whole new character into our belief and "we are now said properly to believe in what has never
been contradicted, as we disbelieve in what has been contradicted.”/117/

Against James Mill, Bain claimed that frequency plays little role in the formation of belief: "the vital circumstances in belief is never to be contradicted."/118/ Ten (uncontradicted) examples produce as much conviction as fifty and more conviction than "fifty for and one against."/119/ The experience of contradiction leads to an acquired scepticism; primitive credulity and acquired scepticism exist in varying proportions in the minds of different individuals./120/

Conviction does not vary directly with experience or knowledge. The role of experience is first, to temper the wide swings between over-credulity and over-scepticism. With little experience, both confirmation and contradiction have overwhelming power. With greater experience the relative frequency of supports and checks comes to play more of a role than their absolute frequency, and belief comes to reflect more closely the actual order of nature./121/ Experience also serves to inform us about proper restrictions in the applicability of our beliefs. It is "the pruning operation that saves it from destructive checks."/122/ Likewise, experience enables us to distinguish causation from mere coincidence, and to detect causation where it is masked by complicating circumstances./123/

Evaluation of the Account

Bain's account of belief had certain advantages over the accounts of his predecessors. The postulation of primitive credulity served to speed up the process of belief acquisition, introducing greater
efficiency in the learning process. While learning was still viewed as a process of accumulation, conviction was posited at the outset instead of developing slowly and steadily as a result of repetition. Ideally, experience should serve to revise and correct these primitive beliefs but, of course, not all individuals employ experience properly.

On the epistemological level, the postulation of primitive credulity reduced the problems in the way of accounting for our notions of causality and the uniformity of nature. Employed in this fashion, primitive credulity begins to resemble an innate faculty of the mind. However, Bain cautioned that no validity can be ascribed to beliefs generated by credulity alone./124/ Experience alone must serve as the arbiter of truth. Moreover, the human mind must be disciplined so as to read the lessons of experience; it is only in this manner that we can arrive at a true knowledge of order in the world./125/ As a description of belief, Bain's account had greater plausibility than earlier accounts. Furthermore, its epistemological implications are entirely consistent with the exaltation of method that was initiated by John Stuart Mill.

Nevertheless, Bain's account of belief was primarily concerned with the psychological determinants of conviction. He identified intellectual, emotional and volitional factors which interfere with the rational assessment of evidence. For example, a present experience will carry more weight than a recollected experience. Differences in the intensity of ideas may unduly affect the assessment of experience./126/ Emotions may also tamper with the intellectual trains
in a variety of ways. Activity may also have a number of effects upon belief. An individual with an energetic temperament is likely to treat the contradictions of experience lightly. Attention is likely to be directed by our likes and dislikes, thus creating a volitional bias in our estimate of evidence. All these factors play a role in shaping individual differences in our views of the world.

Bain’s account of belief had an influence upon Chauncey Wright and C. S. Peirce, shaping the formulation of the pragmatic theory of truth. The view did draw criticisms from his contemporaries including John Stuart Mill. While Mill concurred with Bain’s identification of action as the criterion of genuineness of belief, he maintained that this could not suffice for a full account of belief because the action which follows is not the belief itself but a consequence of the belief. Where there is an effect to be accounted for, there must be something in the cause to account for it.

In other words, Mill was claiming that there must be some difference in the ideas that provoke the actions which then become the criterion of belief. It was Bain’s view that this difference lay in the same conditions that govern volition: primitive spontaneity, as well as pleasure and pain operating according to the law of self conservation. Mill, however, commented:

We desiderate a more complete analysis of the psychological process by which ulterior experience, or a more correct interpretation of experience, modifies the original tendency so powerfully described by the author, and subdues belief into subordination and due proportion to evidence.
Early in the twentieth century, F. C. Bradley noted that the pragmatists might have avoided some of their mistakes, if they had paid closer attention to the criticisms of Bain's theory of belief./132/

Bain's Applied Psychology:
On The Study of Character

Bain's work On the Study of Character was published in 1861. The largest portion of the work was a critique of the phrenological view of character. In the remainder of the work, Bain developed his own view of character, providing a typology of temperament based upon his division of the mind into volition, emotion and intellect./133/

Bain's extensive discussion of phrenology has led to erroneous evaluations of the work. On the one hand, it has been interpreted as evidence of Bain's indebtedness to the phrenological scheme which, it is said, guided his incorporation of physiology into psychology./134/ On the other hand, the book has been evaluated as out of step with the times, since the heydey of phrenology had passed by 1860./135/ In this section, I would like to present a new interpretation of the work, one taking as its starting point Bain's own account of its purpose.

In the preface to On the Study of Character, Bain stated that the work was designed to reanimate interest in the analytic study of character; interest that had first been widely awakened by phrenology. By the analytic study of character, he meant the study of individual differences based upon the observation that "human beings are widely different in their mental tastes and aptitudes."/136/ Bain argued that
this interest should be reanimated so as to gain tools with which to solve some pressing social problems (e.g., getting the "right man into the right place.") /137/

My interpretation of this work is that it represents another attempt on Bain's part to fulfill the tasks set for psychology in the Utilitarian-Associationist program. Here his aim was to account for differences in character in a way that might further certain social goals. Bain's aim in the work was programmatic, as was the case with many of the works of the Utilitarian-Associationist thinkers. Guidelines for the study of character were developed through a critique of the best developed and best known system of character: phrenology.

Bain's selection of phrenology for examination was consistent with his own methodological precepts. He argued that a complex subject like character ought to be approached from various points of view and suggested that "a system, inferior on the whole, may bring out some portions of the subject to peculiar advantage." /138/ Phrenology provided one such system. As we have seen, Bain was an advocate of economy of effort and efficiency in scientific endeavors. It is therefore not surprising that he decided that phrenology should "be swept of everything... [it]... can possibly teach." /139/

A second reason for examining phrenology was that it was widely known and comprehensible to the general public. As such it represented a good starting point for the analysis of character. Bain pointed out that

the Phrenological partition of the mind, if not accepted by all philosophers, is well known to the general public; hence any
observations, tending either to confirm or to impugn it, have a chance of being readily understood./140/

It was Bain's view that such a scheme could serve as the basis for further improvements.

Beyond these stated reasons, my analysis of Bain's position vis-à-vis the Utilitarian-Associationist tradition suggests another reason for examining phrenology. The phrenological system entailed a faculty view of the mind; innate powers were posited underlying all mental functions. Such a view was antithetical to the precepts of the Utilitarian-Associationist tradition. Phrenology, I will argue, provided a foil for Bain's defense of an alternative account of mind./141/

Bain's desire to foster the development of a science of character was, no doubt, related to John Stuart Mill's interest in character. However, I do not believe that Bain's work simply represented an attempt to meet John Stuart's call for the development of Ethology. I have argued that Mill was primarily interested in national character, i.e., in the impact of culture upon individual development./142/ Bain was interested in individual differences in character and how these arise from differences in circumstances. Bain departed from John Stuart Mill and others in the Utilitarian-Associationist tradition by positing a temperamental basis for individual differences. As we have seen, Bain adopted a modified Helvetian position. He denied that environmental differences alone could account for all the differences we observe among individuals and insisted that the environment works upon individuals with pre-formed propensities./143/
In another sense, Bain's view of the science of character is quite similar to Mill's. Bain argued that the science of character must involve the application of principles drawn from the independent science of mind. And Bain developed a framework for such a science of character based upon his own psychological principles.

Phrenology and the Science of Character

Phrenology had been developed out of a critique of some of the older doctrines of mental science held by Reid, Stewart and Brown. While believing that such a critique was necessary, Bain claimed that there was still much of value in the older methods. Bain's hope was to preserve the best that each approach offered toward the development of the science of character.

Phrenologists had criticized the older doctrine, first of all, because no account was given of the influence of material organs on mental powers. This resulted in a failure to examine the development of mind and an inability to account for such phenomena as sleep, dreaming, idiocy and insanity. Other problems within the older tradition were the continuing disputes over the existence and function of primitive powers and the neglect of the study of manifestations of combinations of such primitive powers.

While Bain concurred with the phrenologists' view of the importance of material organs, he disputed the methods by which they had established the relationship between these organs and mental powers. Bain argued that such investigation must be guided by reports of
conscious experience. He cited Samuel Bailey’s critique of phrenology in support of his view that observation of connexions between mental powers and the shape of the brain cannot yield a full account of character. Bain insisted that clear conceptions of the nature of these powers is an essential prerequisite and that such conceptions can only be obtained through introspection, aided by observations of others and physiological knowledge. Bain argued that

phrenology, as hitherto exhibited, is at best but a science of character and not a science of mind as pretended; and that even as a science of character it is essentially dependent upon the degree of improvement realized by the science of mind independently cultivated.

Bain supplemented this general methodological criticism with specific criticisms of phrenological doctrines. Phrenologists had adopted a temperament theory which described four types of character: the lymphatic, sanguine, bilious and nervous. Bain criticized this typology arguing that we should look directly at the effects of the functioning of these specific organs. More importantly he examined the faculties posited by phrenologists with the aim of discovering how far these are well-defined and separate principles of our nature, how far they are ultimate principles, and whether, taken as a whole they render a complete account of all the known powers belonging to our mental condition.

Bain also examined Spurzheim’s account of the powers of the mind organized as propensities, sentiments and intellectual powers. He argued that, among propensities, there was insufficient recognition of the effects of spontaneity, or our "powerful cerebral battery." He pointed out that "different organizations differ in the copiousness of this spontaneous discharge; in fact, the same individual varies in that respect according to circumstances." According to Bain, copious
central energy provides the basis for a strong will, but "the mode or character of it depends on the sensitive and intellectual regions of the mind."

Bain examined the propensities and the sentiments posited in this system, sometimes agreeing with the analysis and sometime denying that the power was distinctive and/or ultimate. Many of the sentiments identified as ultimate—e.g., self confidence, courage, wit and mirthfulness—were traced to our "sense of power" by Bain. He denied that others, like the sentiment of conscientiousness, were ultimate in character. Bain wrote that "conscience is so much a subject of education ... that we must be especially careful in assigning a large or small development of it to natural endowment." He charged that other sentiments or emotions were neglected within this system. He identified the "interest of pursuit," (i.e., the degree of susceptibility to plot); the "love of truth"; and certain components of aesthetic sensibility as sentiments not receiving adequate notice in the phrenological scheme. In addition, he felt that the power of sympathy was neglected by phrenologists.

It was in his criticisms of the intellectual powers, that Bain departed most from the scheme developed by Spurzheim. Spurzheim had posited twelve perceptive faculties (corresponding to ideas the mind derives through the senses) as well as two reflective faculties (comparison and causality). Concerning the perceptive faculties, Bain pointed out that the phrenologists had not taken into account the (experiential) contribution made by muscular sensibility. He argued
that certain of the faculties posited--e.g., form, size and weight--rested upon muscular sensibility and therefore could not be regarded as ultimate. Bain argued that at least one faculty, the faculty of individuality (which presumably operates to facilitate the observation of particulars) was redundant./157/

As we would expect, Bain was even more critical of the reflective faculties. The faculty of comparison had been posited to account for our ability to perceive resemblances and to originate similes and analogies./158/ Although Bain regarded these functions as very important, he held that they can be accounted for by the operation of the associational principle of similarity. Bain asserted that the power underlying association by similarity "is one of the most fundamental powers of the human intellect [and is] unequally manifested in different minds." But he added, "we should despair of referring it to a local centre."/159/

Bain's "analysis" of the faculty of causality is far more straightforward. According to Spurzheim, this faculty predominates in men possessing a profound and comprehensive intellect (e.g., Socrates, Bacon, Galileo and Kant.) Bain simply argued that causality was not the appropriate term for such a faculty, thereby skirting the issue of whether there is an innate basis for our recognition of causal power./160/ Furthermore, even if a somewhat more limited power were to be ascribed to this faculty, Bain questioned whether it is truly a distinct and ultimate power of the mind./161/
Bain's central objection to the phrenologists account of the intellectual powers was that they failed to recognize a power of general retentiveness because they asserted that retention was solely a function of discrimination./162/ Bain argued that the general property of retentiveness must not be neglected because it "gives rise to important intellectual distinctions [that] ought to be taken into the account in judging of individuals."/163/

A final, more general objection was that the scheme failed to provide a way of taking into account a person's acquisitions. Bain wrote: "Phrenology [is] only a part of the science of character, that part namely that takes cognizance of original or innate tendencies."/164/ Because phrenologists completely neglect the laws of association, they cannot account for the effects of acquired knowledge. Bain asserted that while giving a tolerably fair account of the uncultured classes of the community, and of those whose natural tendencies are so strong as to be little affected by surrounding influences, the system must break down in its application to highly educated individuals and to susceptible and yielding natures./165/

Furthermore, he argued that it was a methodological mistake to postulate such innate tendencies, prior to evaluating the impact of the environment. Bain asserted that we should ... inquire into the history and the environment of the individual under consideration to see how much can be attributed to circumstances and cultivation before we put down all the appearances to the account of nature./166/

Although Bain found considerable value in the phrenological scheme, he still claimed that the a priori approach advocated by the phrenologists should only be adopted after the a posteriori approach of
the associationist was exhausted.

Bain's Theory of Temperament

Although Bain had criticized the temperament theory underlying the phrenological doctrine, he was willing to adopt such a theory when it employed his own basic constructs. Bain postulated three fundamental types of character based upon his tripartite division of the mind into volition, emotion and intellect. Bain's description of types of character also provides insight into his social views and values.

The Volitional Character

Bain argued that an important source of individual differences was the amount of spontaneous energy an individual exhibited. But the quantity of energy was not the sole variable determining character. Bain argued that we need to take note of the degree and variety of this inborn energy, the manner of its display, and the practical consequences of it, in order to fully understand its impact on character./167/

According to Bain, the degree of spontaneous power is a function of the efferent currents in the cerebral centers, as well as the makeup of the muscular system. While these determine the total amount of spontaneous power, there will also be qualitative differences which influence how it is manifested. There are excitable (rapid but short-lived) and stolid (slow and persistent) manifestations of this power./168/
Spontaneous energy was presumed by Bain to underly several of his prized virtues. He wrote:

Spontaneous energy, besides implying industry and activity in pursuits, is one foundation of the qualities of Endurance, Patience, Courage and Self-reliance . . . . A creature full of spontaneous energy . . . is more given to rely on itself, to dispense with aid, and to scorn dependence that the organizations of a different kind./169/

Moreover, extending these results to provide insight into national character, these are the very characteristics of "the greatest Industrial Race of the globe" [the English]./170/

The Emotional Temperament

This temperament is characterized by the fuller development of the nervous, muscular and secretory organs which enables them to sustain the great and prolonged stimulation which emotion provides. Bain argued, rather unconvincingly, that the emotional temperament was particularly suited to sustaining pleasure, while "naturally . . . withstanding, or throwing off, the inevitable shocks of pain."/171/ According to Bain, this bent toward pleasure, combined with the ability to throw off pain had certain characteristic consequences. The expression and demeanor of the emotional character will be necessarily abundant and intense. Bain asserted that such people are especially effective socially because they express their feelings so energetically./172/ On the other hand, such individuals might have a hard time understanding others because they tend to take their own feelings as the standard./173/ Such individuals are unlikely to be very active in their pursuits. Bain stated that "indolence is the tendency of the purely emotional character." Strong interests, stirring up powerful feelings, are essential to spur the
emotional character into action. /174/

Although the emotional character can be refined through cultivation of the intellect, their pursuits will be shaped by their emotions. Such individuals will be likely to choose some of those avocations of strong human interest—the preacher, the poet, the political writer or speaker, the historian, the critic,—in preference to common industry or science. /175/

Bain also noted that the Celtic races—the Irish, Welsh, Scottish Highlands and French—were emotional in comparison with the Teutonic races. Furthermore, even among the Teutonic races differences could be found with "the lowland Scotch and English having least of the peculiarity." /176/

The Intellectual Temperament

Bain argued that the three great properties of the intellect are discrimination, retention and the "identifying force" which underlies association by similarity. The intellectual character is one who has these properties to a high degree and in whom emotion does not predominate. The intellectual character is one whose life is principally occupied with Observation, Acquisition, Reflection upon what has been observed and learnt, new Identities struck out, and new Intellectual Constructions following. /177/

Furthermore, in this individual the active energy such as it is, works in subservience to these [intellectual] operations, and emotion is but a feeble flame. There is a quietness and serenity about the character, an especially imperturbable disposition of mind. /178/
Bain further developed his view of the intellectual character by contrasting it with the emotional. In the intellectual character, "intellectual forces alone govern the reproduction of thought" leading to "rationality of judgment and decisions [made] according to strict evidence." /179/ In contrast, in the emotional character "feelings sway the course of reproduction and intellectual relations bear a subordinate place." The thinking processes of such characters are "the stronghold of every fallacy."/180/

Bain believed that his analysis of the intellectual character also shed light on stupidity. He argued that stupidity has various modes; it can be manifested in:

- not discriminating where there is difference and/or in not retaining impressions that have been communicated and/or in not seeing palpable agreement or likeness among resembling things./181/

One's intellectual character also has an impact upon moral conduct, over and above the impact of the volitional and emotional aspects of character. First of all, the intellect has an important role to play in Bain's central self-regarding virtue: prudence. Prudence, or firmness of character, involves a full recollection of good and evil. Bain asserted that "the animal that has the best memory for whippings is the animal with the strongest will, the highest moral nature."/182/

Other qualities related to prudence--steadiness of purpose, steadiness of tone of mind--could also be traced to such accurate recollection. A clear idea of pains to be avoided, or the pleasure and pains that instigated a course of action, contribute a great deal to industry in carrying out one's work./183/ An even tempered person is
likely to be one who is good at balancing present impressions with a clear recollection of past impressions "that convey a correct average of all times and circumstances."/184/

Intellectual factors also play a role in sympathy, or the disinterested conduct that is the basis of conscientiousness. Of course, Bain felt this problem all the more acutely because of his allegiance to the Utilitarian-Associationist tradition. He wrote:

Disinterestedness is as great a puzzle and paradox as ever. Indeed, strictly speaking, it is a species of irrationality, or insanity, as regards the individual's self; a contradiction of the most essential nature of a sentient being, which is to move to pleasure and from pain./185/

"And yet," he added, "Disinterestedness is a fact of our constitution and without it there would be nothing that we should call great virtue in the world."/186/

The essential features of sympathy or disinterestedness, he wrote, are (1) the assumption of another person's state of mind and (2) acting upon that as if it had originated in one's self. The intellectual features of this process are the ability to interpret the signs of how another person is feeling, as well as an accurate recollection of the state of mind from one's own experience./187/

While these conditions may render an individual capable of sympathetic action, some additional source of motive power is required that "enables the intellectual gift, otherwise barren, to bear the fruit of genuine fellow-feeling."/188/ Here Bain sought aid from another intellectual property: the tendency for fixed ideas to issue in action./189/ As we have seen, Bain later admitted that this wholly
intellectual account of sympathy could not work and posited an instinct of gregariousness as the basis of disinterested action. Although such a shift in his position was necessary, intellectual elements still continued to play a large role in his account of sympathy.

I think it is fair to say that Bain considered the pure intellectual character a relatively rare type. On the other hand, it is clear that he felt that the development of intellectual powers provided an important corrective to other tendencies in character and provides the basis for the development of a sound moral character.

Special Conditions Influencing Character

Bain identified a number of ways in which the basic tendencies of character could be shaped in different directions. The contribution of the special sensibilities to the development of taste and the impact of special intellectual endowments are two of these.

Special Sensibilities

Bain concurred with the view of the phrenologists that individuals are unequally endowed with regard to special sensibilities. Some people are more alert to feelings associated with muscular exercise; others are "trembling alive" to feelings and sensations connected with organic conditions. The unequal development of certain senses (e.g., smell, touch, hearing) as well as unequal susceptibility to certain emotions (e.g., wonder, terror, love of power) can have a great impact on the development of tastes as well as intellectual character. Bain wrote that
those Muscular Feelings and Sensations; clearly discriminated
and strongly retained make up our world of ideas, the vast total
that we term our knowledge; and the character and extent of that
knowledge will show what primitive sensibilities predominate in
the mind./192/

However, Bain qualified the account given by the phrenologists by
arguing that the differences we observe among men in these respects are
not entirely the outcome of differences in these "primitive sensibilities." A slight initial inequality, for instance an acute sense
of hearing, may be magnified through preferential cultivation. The
musician's ability to discriminate tunes results from the assiduous
cultivation of an initial natural tendency./193/

**Special Intellectual Endowments**

There remained one more aspect of intellectual endowment not dealt
with by phrenology in a satisfactory manner: our power of fabrication
and origination, "sometimes spoken of as Imagination, sometimes termed
Genius."/119/ Bain wrote that

The great desideratum in the theory of intellectual character,
is to give an intelligible resolution of this innate power of
recasting and moulding the raw material of thought, this
determination to self-activity, so to speak, in place of
remaining content with the received forms and order of the
communicated impressions. In short, it is the problem of
Original Genius that is the reproach of the schools of mental
philosophy./195/

To remedy this problem, Bain developed an account of the character
of genius; an account that dispensed with the "occult assumptions" of
the phrenologists. But before presenting this account he developed an
account of talent, that is, mastery of what has already been done.
Talent, he wrote, involves four elements: (1) skill appropriate to the
sphere of practice; (2) sound judgment concerning the desired effect;
(3) interest in the effect which provides the motivation to pursue it and
(4) a good power of general retentiveness so as to "build up the
tentatives into a fabric of acquired power."\(^{196}\)

The form talent takes—whether artistic, business or scientific—depends upon the direction given to each of these elements. For example, artistic talent depends upon the development of taste (which governs judgments concerning the desired effect.) Scientific talent, on the other hand, depends largely on skill in "easily discerning similarities."\(^{197}\) As we have seen, Bain regarded this "skill" as a natural propensity. Individuals differ in the degree to which they display this power of similarity, such differences also account for the distinction between mere talent and genius.

Bain argued that "high original genius" depended upon a number of factors. First, among such individuals there is a "preponderance of active energy" which provides the "strong bent towards originality."\(^{198}\) In addition, the power of similarity exists to a high degree in such individuals. Bain distinguished among varieties of genius as he had with talent. The power of detecting similarity is most pronounced in scientific genius because "it is of the nature of Science to comprehend many resembling particulars in the sweep of one principle or formula."\(^{199}\) But imagination alone is not sufficient to guarantee sound results in science. The scientist's imagination must be guided by distinct ends—either "evils to be warded off" or "goods to be secured."\(^{200}\) Bain wrote that

in genuine science, the special evils to be entertained by the mind are falsehood, inconsistency, inaccuracy; and according as these evils are vividly and constantly present, will be the
endeavor to obtain, not knowledge simply, but true knowledge./201/

Bain's account of character ended with his treatment of genius, an indication, perhaps, that he regarded genius as the highest form of character.

On Character did not succeed at reanimating the interest for us in character first stimulated by phrenology. It had little impact and its interest lies in its confirming certain tendencies in Bain's own thought./202/ Bain's second applied work, Education as a Science was far more influential. It is to this work we now turn.

Bain's Applied Psychology;

On Education as a Science

Bain's work Education as a Science was published in 1879, nine years after the passage of Foster's Elementary Education Acts. Bain's Mental and Moral Science, first published in 1868, was selling briskly and Bain no doubt believed that a work designed for the growing numbers of teachers in training would also sell well. He was correct. The work was reprinted ten times in Bain's lifetime and translated into four languages./203/

Bain's stated aim in the work was to provide a scientific treatment of the art of education. This meant two things. First, principles drawn from related sciences (physiology and psychology) must be applied. Second, precision and rigour must be enforced in "the statement, deduction and proof of the various maxims or rules that make up the art."/204/ An implicit goal was the refutation of the faculty view of
mind and educational doctrines based upon this view. Bain criticized the view that the aim of education was the training or cultivation of the faculties. He also rejected the claim that the teaching of classics cultivated such faculties and argued that scientific subjects ought to be given greater prominence in the curriculum.

Although Bain chose to base educational doctrines upon an associationist and hedonistic psychology, his approach to the field differed from that taken by James and John Stuart Mill. Bain argued that their definitions of education "err on the side of including too much."/205/ In the first place, they had included influences upon human character (e.g., laws, forms of government, modes of social life) which are difficult to trace and even more difficult to control. Secondly, they had invariably referred to some end of education (e.g., human happiness or perfection) that was vague and offered little guidance to the educator./206/

As an alternative definition, Bain suggested that we restrict our view to "the arts and methods employed by the schoolmaster." He wrote:

If by any investigations, inventions, or discussions we can improve his art to the ideal pitch, we shall have done nearly all that can be required of a science and art of Education./207/

Nor is it proper for the educator to concern himself with the question of "what constitutes happiness, virtue or perfection."/208/ Bain regarded these questions as ethical or theological ones and therefore outside the province of education. All that education could do is to examine "whatever matters people are agreed upon" i.e., the accepted curriculum of the school to assess the
"characteristic mental efficacy" of the subjects included. Where there is some doubt about the value of the subject, the schoolmaster must evaluate "at what costs these doubtful acquisitions would have to be made."/209/ In other words, the educator should not concern him or herself with values or ends, but simply work with such ends as are already implicit in the curriculum. Where such ends seem to clash or be of doubtful value, the educator ought to assess the costs associated with its pursuit./210/ Such a cost-benefit analysis should enable the educator to evaluate the relative utility of various curricula. Here we see discussion of educational ideals being subjected to the utilitarian criterion of use-value.

Bain described the central task of the schoolmaster as providing "the means of building up the acquired powers of human beings."/211/ The first and foremost concern of the schoolmaster must be with the intellectual powers. Bain wrote that "the leading inquiry in the art of Education is how to strengthen memory," or how to improve the retention of knowledge imparted by the schoolmaster./212/ He added that the active and emotional parts of the mind must not be neglected as they play a role in the acquisition of knowledge. In keeping with his goal of transforming the art of education into a science, Bain argued that physiological and psychological principles should be employed to determine the best means of building up these acquired powers./213/

Bain also argued that the science of education must inquire as to "the proper or natural order of the different subjects, grounded on their relative simplicity or complexity, and their mutual
dependence."/214/ This inquiry should yield an account of the logical order of subjects to be followed in the curriculum except when preempted by the "psychological order of subjects." In a later section I will examine the factors underlying the logical and psychological order of subjects.

Bain's focus upon intellectual education led him to downplay moral education. In part, this was because he regarded moral teaching as a more complex and less precise matter than intellectual teaching./215/ More importantly, he did not regard the school as playing a central role in the growth of morality. He wrote:

> Morality . . . does not depend solely on the school teacher, or on any one source; it is imbibed from innumerable sources; and the school does not even rank as one of the chief./216/

He continued,

> There are unquestionably inborn tendencies, more or less powerful, to make men prudent, and just, and generous . . . . But experience shows that these native forces are not fully adequate to the desired end; and society superadds a special discipline to make up for the defects. The greater part of this discipline, however, is not teaching, in the common meaning of the word, but the public dispensation of punishment and reward./217/

According to Bain, a child learns morality in a trial and error fashion through personal experience and social interaction./218/ However, this method of instruction has certain shortcomings. Moral teaching, like language teaching, is required to overcome the defects of such haphazard trial-and-error learning. The schoolmaster's first task is to concentrate and methodize "the scattered and random moral impressions of every-day life, so that 'a day in his courts is better than a thousand' in the general world."/219/ The
teacher needs a sound classification of virtues and vices to aid him in this task./220/ Perhaps more importantly, a schoolmaster occupies a role of authority and, therefore, the school reproduces, on a smaller scale, the conditions in which morality is learned. The teacher

enforces and cultivates obedience, punctuality, truthfulness, fair dealing, courteous and considerate behavior, and whatever else belongs to the working of the school./221/

in this role, the teacher dispenses rewards and punishments, the sanctions which lead to the development of morality in the larger society.

In a number of respects, Education as a Science conforms to the precepts of the Utilitarian-Associationist view. Bain criticized the faculty view of mind and educational practices based upon it. He applied principles drawn from physiology and the science of mind to the art of education in order to render it scientific. The educator was assigned the task of evaluating and revising the curriculum according to the criterion of utility and consideration of the "logical and psychological order of studies." While morality was depicted as arising in a broader context than the school alone, Bain gave the teacher an important role to play in cultivating moral habits and systematizing the moral lessons learned elsewhere. In the next several sections, I will examine each of these points in somewhat more detail.

Bain's Critique of Current Educational Practice

Bain argued that two conditions must be met to transform the art of education into a science of education: (1) the relevant principles of physiology and psychology must be applied; and (2) the rules or maxims
that make up the art must be stated with precision and rigor./222/ Bain criticized contemporary educational doctrines with the aim of meeting these two conditions. First, he examined the account given by faculty theorists of memory, judgment and imagination, along with their view that education must concentrate upon the cultivation of these faculties. In addition, he examined other current educational catchwords (e.g., "one thing well," "proceeding from the known to the unknown," "analysis and synthesis") that he found particularly vague and therefore of little value in guiding practice.

Bain argued that the most important task in education is the strengthening of memory. By this he meant something rather different than faculty theorists. They insisted that there was a general faculty or power of memory which could, and should, be strengthened by exercise. They regarded rote memorization of poetry, or the kind of memorization required in learning Latin and Greek, as having a value beyond the specific information acquired since they believed that some general power of memorizing was strengthened by such exercises./223/ Bain rejected this view of memory. He wrote:

The absolute power of Retentiveness in any individual mind, is a limited quantity. There is no way of extending this limit except by encroaching on some of the other powers of the mind, or else by quickening the mental faculties altogether, at the expense of the bodily functions./224/

It was Bain's view that a "faculty" of memory could not be cultivated. Instead of attempting to improve memory through exercise, the schoolmaster "should simply consider the means of fostering some definite class of acquisitions according to the established laws of Retentiveness."/225/ That is, the schoolmaster should focus on
strengthening memory in the only way possible: stocking it with clear ideas and useful information.

Bain made similar points concerning the purported faculties of judgment and imagination. Judgment, he wrote, is not a simple and distinct power of the mind. It takes many forms from the careful comparison of simple objects of sense, to the evaluation of complex situations according to some mental standard. These functions rest upon a number of processes—accurate sensory discrimination, careful distribution of attention, an organized and systematic method of proceeding—which, to a large degree, must be cultivated separately.226/

Bain was more adamant in his denial that the "faculty" of imagination could be cultivated. He described three forms taken by imagination: (1) the conceiving faculty; (2) the ability to enter into or conceive other's feelings (the intellectual ability underlying sympathy); and (3) creative imagination.227/ Bain denied that any of these forms of imagination could be directly cultivated by teaching. Creative imagination, he wrote, "passes entirely out of the reach of express training."228/ The task of the schoolmaster with regard to creative imagination is simply to "repress the extravagant emotional preferences" that lead to "bias and partiality, not to speak of its distortion and falsification of reality."229/

However, the teacher may indirectly aid in the cultivation of imagination by helping to stock the pictorial memory. The amassing of images fosters the development of the conceiving faculty and the
operation of creative imagination."/230/ In other respects the teacher may facilitate the development of imagination. Bain wrote that sympathetic imagination, in common with other moral abilities, may be quickened by an apt teacher in some happy moment, but cannot, so far as I am aware, be made to recur upon a pre-arranged plan."/231/

To summarize, Bain concluded that memory, judgment and imagination are not the simple unitary powers described by faculty theorists and that students are not likely to benefit from a curriculum designed to "draw out and exercise the mind's faculties and forces."/232/

During this period, advocates of science education repeatedly clashed with those who supported the public school tradition of classical education. One of the arguments most often adduced for the "value of the classics" was their role in "training the mind." Education as a Science included an entire chapter examining the teaching of the classics and critiquing the arguments put forth by proponents of classical education. Bain argued that while memory is abundantly employed in such studies "the proper word for this [employment] is not 'trained' but 'expended'." He wrote:

A certain amount of the plastic force of the system is used up, and is therefore unavailable for other purposes. This is the cost of the operation, for which we have to show an equivalent in solid advantages./233/

Bain denied that such advantages could be shown. His primary objection was that the study of classics yielded no information which could not be obtained by other means at less cost./234/ Nor did they provide any training that could not be provided by alternative employment, e.g, the study of science. Furthermore, science studies
could be much more readily adapted "to the strength of the pupils."/235/ Bain concluded that scientific instruction is more beneficial from the pedagogical point of view, as well as in terms of the value of the information and "mental discipline" imparted.

The same people who extolled the virtues of the classics tended to denigrate science teaching as supplying nothing but "mere information." Bain replied that such individuals had a mistaken view of the character of information. He wrote:

There is . . . a scale of amount and difficulty, in regard to what we may consider as mere information, and when we touch the higher degrees, we come upon something that involves the best faculties or forces of the mind./236/

Bain used this line of argument to advocate increasing the amount of scientific instruction. Although science teaching imparts a body of facts, he wrote, principles of scientific method are also conveyed in the process. Consistent with his earlier writings, Bain asserted that an understanding of scientific method constitutes the very highest form of intellectual discipline./237/

Against the faculty theorists, Bain maintained that the highest goal of education was the imparting of information, particularly useful information. For this reason, he advocated the employment of the object lesson as an important instructional method. This method involves organizing a series of lessons around some object (e.g., number, chalk, coal)./238/ Bain examined various claims made for the method and concluded that its strength lay in providing a framework for imparting a large amount of information efficiently and effectively./239/
In addition to critiquing the faculty view of mind and related educational doctrines, Bain criticized current educational catchwords such as "proceeding from the known to the unknown" and "analysis and synthesis." Such catchwords, he argued, are too vague to offer the teacher any concrete guidance./240/ As we will see, in his own account of the logical and psychological order of subjects, Bain provided a much more clear and precise account of what might be meant by these phrases.

Bain's Science of Education

An important part of Bain's program for transforming the art of education into a science was drawing guidance from related sciences such as physiology and the science of mind. In Education as a Science, Bain presented two introductory chapters on the bearings of these sciences for education before turning to teaching methods and issues related to the curriculum. Although the chapter on psychology was considerably longer than that on physiology, some central points of his educational doctrine rested upon his account of physiology./241/

Physiology and Education

Since teachers must assume an average degree of physical health on the part of their students, they should be concerned with physiology and hygiene only as it relates to their central task of building up the acquired powers. Bain wrote that

[Education's] point of contact with physiology and hygiene is narrowed to the plastic or acquisitive function of the brain--the property of cementing the nervous connections that underlie memory, habit and acquired power./242/
Because this plasticity depends upon nervous power, the conditions influencing nervous power also influence retentiveness. The plastic function of the mind is sustained by nutrition and requires alternations of exercise and rest. Bain added that "like every function, the plasticity may be stunted by inaction, and impaired by overexertion."/243/

Special circumstances impact the operation of these conditions. Individuals, Bain wrote

are unequally constituted as regards the various functions...[and]...favoured organs receive a share proportioned to their respective capitals: to him that hath shall be given./244/

In addition to such natural differences, Bain asserted that the most active organs will receive the lion's share of the nutriment and therefore, "to exercise the several organs unequally is to nourish them unequally."/245/ Bain also noted that different mental functions draw unequally upon this retentive power. Here he was, once again, referring to the opposition between the intellect and the emotions. He wrote that "under excessive emotional excitement the intellect suffers, under great intellectual exertion the emotions subside."/246/

Bain emphasized that the plastic or retentive operation is simply one aspect of the intellect and therefore, that physiology has limited relevance for our understanding of the intellect. However, certain facts are central for education. Chief among these is the principle that the process of acquisition draws more heavily upon nervous power than any other process. He wrote:

To drive home a new bent, to render an impression self-sustaining and recoverable, uses up (we may suppose) more
The educator must keep this fact in mind and attempt to arrange studies so that new acquisitions are developed "when cerebral vigor is both abundant and well-directed."/248/

In other respects, the physiology of the developing child has an impact upon education. As we will see, Bain argued that "developmental" factors must be taken into consideration when arranging curricula. Because Bain's account of development is largely based upon his view of brain growth, physiological principles play a large role. He argued, for example, that "times of rapid [brain] growth are times of more special susceptibility to the bents imparted during those times."/249/ For this reason, the impressions made during the first seven years of life were considered critical. Furthermore, since memory is said to be highly plastic between the ages of six and ten, schoolmasters should focus on memory tasks (e.g., language acquisitions, geographical particulars and other matters of fact) during this period./250/ I will return to some of these matters below.

Psychology and Education

Bain argued that psychology's primary contribution to education was an understanding of the intellectual processes, particularly the three fundamental functions of the intellect: discrimination, agreement and retentiveness. Principles governing activity and the emotions were also described, specifically as they related to intellectual functioning.
Two general points concerning effective intellectual training were repeated over and over again by Bain. All forms of intellectual functioning, he wrote, are facilitated by (1) physical freshness and (2) the removal of emotional disturbances./251/ Beyond these general points, Bain made specific comments concerning each intellectual function. Discrimination was the first of these functions and the most fundamental since it is "the necessary prelude of every intellectual impression... [and]... the basis of our stored up knowledge."/252/ Bain noted that there are natural differences in discriminative ability and that such differences provide the greatest source of disparity in intellectual character. The teacher should be able to recognize such natural differences in students and take steps to foster their development./253/

Other means should also be taken to facilitate the development of discriminative ability. The teacher needs to "awaken the pupil from the state... where differing impressions fail to be recognized as distinct," and this can be achieved by making detection of these differences interesting by tying them to pleasure and pain. Since discrimination is facilitated by immediate succession, the teacher should strive to closely juxtapose the differences to be noted./254/

Some of the conditions underlying the effective use of retentive power have already been alluded to. Once again, Bain noted that there were significant differences among individuals in the quantity of this plastic power./255/ However, in all cases, the schoolmaster's primary task is to find ways to help the individual economize this power. Bain
indicated the periods of the day during which this power is likely to be at its maximum, as well as the comparative outlay of plastic power involved in different modes of functioning.\textsuperscript{256} As I have already mentioned, the activity of acquisition is the most draining, while the activity of "searching and noting" draws considerably less force. Bain noted that the indulgence of the emotions is the least costly mental exercise and "may go on when we are unfit for any of the higher intellectual modes."\textsuperscript{257}

In order to fully understand "the mental aids to plasticity" the teacher must also understand the circumstances governing "the concentration of the mind," or the channelling of nervous power for a particular purpose.\textsuperscript{258} Concentration, Bain wrote, involves an act of the will and therefore is facilitated by pleasure and the removal of pain. Bain pointed out that there was another state that facilitated mental concentration—the state of mental excitement that is neutral with regard to pleasure or pain but serves as an intellectual stimulus. Bain wrote:

A state of excitement seizes hold of the mind for the time being and shuts out other mental occupations . . . . In well-understood moderation, excitement is identical with attention, mental engrossment, the concentration of the forces upon the plastic or cementing operation, the rendering permanent as a recollection what lies in the focus of the blaze.\textsuperscript{259}

According to Bain, this form of excitement is most likely to arise when the student closely adheres to the subject. It involves the "continuous application of the mind in perfect outside stillness."\textsuperscript{260} In this way a useful form of excitement is stimulated, one which is "narrowed and confined to the subject to be impressed"
rather than one which is "vague, scattered and tumultuous" and serves as a distracting force rather than a concentrating force./261/

The final intellectual power, which Bain called the "Law of Gravitation of the intellectual world," is similarity or agreement, the power underlying association by resemblance./262/ It is this power that underlies our ability to transcend particulars and arrive at general ideas. To facilitate the operation of this power the teacher should strive to arrange material so as to deemphasize compelling individual differences and emphasize the important resemblances. The teacher should also provide a wide variety of examples of the generality to be acquired since "a continuous undistracted iteration of the point of agreement is the only way to produce an adequate impression of a great general idea."/263/.

Finally, Bain described the intellectual function of constructiveness. The teacher's primary role in fostering the growth of this function is seeing that the pupil's mind is well stocked with images that can serve as the basis for future constructions./264/ The teacher can also serve as a guide helping the student to clearly conceive that is aimed at and to move toward the goal by a process of trial and error./265/

Although Bain regarded the cultivation of the intellect as the central task of education, most of his psychological chapter is devoted to discussion of non-intellectual mental powers. Activity and the emotions are discussed, primarily with respect to their influence upon intellectual powers. The ebb and flow of activity is described in
relation to "the alternation and remission of our modes of exercise and application" or, more specifically, to arranging the curriculum so as to provide such variety in activity. The "culture of emotions" is described both with regard to its intellectual and to its moral bearings. The emotions were also extensively discussed, particularly as they serve as motives which might operate within the educational setting. Table 2 indicates the range of emotional susceptibilities available for the purposes of the teacher.

TABLE 2
EMOTIONS UNDERLYING EDUCATIONAL MOTIVES

The Emotion of Terror
The Social Motives
The Anti-Social and Malign Emotions
The Emotion of Power
The Emotions of Self
The Emotions of Intellect
The Emotions of Activity
The Emotions of Fine Art
The Ethical Emotions
The Feelings as Appealed to in Discipline
Emulation-Prizes-Place-Taking
Punishment
The Discipline of Consequences

(from Education as a Science, Table of Contents, pp. xi-xiii.)
Bain did not regard all of these motives as playing a positive role in education. For example, he warned that fear wastes the energy and scatters the thoughts, and thus is ruinous to the interests of mental progress. The tyrant, working by terror, disarms rebelliousness but fails to procure energetic service.

For these reasons, he wrote, it should only be used in the last resort in educational settings.

Bain argued that the two most important classes of emotion playing a role in education were the social motives and the anti-social and malign motives. Love, affection, mutual regard, sympathy and sociability, he asserted, represent the primary satisfactions we derive in life and, as such, provide the basis for powerful educational motives. Bain argued that since most of our pleasures come to us from other beings, the value of sociability is greatly augmented. He wrote that

the influence of society as the dispenser of collective good and evil things, in addition to its operation in the affection and sympathies, is necessarily all-powerful in every direction. If this stimulus were always to coincide with high mental culture, the effect would be something that the imagination hardly dares to shadow forth. The same influence, working by disapprobation and approbation combined, is, as I contend, the principal generating source of the ordinary moral sentiments of mankind, and the inspiration of exceptional virtues.

Bain was somewhat unique among his contemporaries in emphasizing the important role played by "the pleasures of malignity." He contended that the emotions of anger, hatred, antipathy, rivalry and continuity are sources of immediate pleasure, often not inferior, and sometimes superior, in amount to the pleasures of amity and gregarious cooperation. The schoolmaster needs to understand this fact in
order to provide outlets for such emotions that are "more or less compatible with the sacredness of mutual rights."/272/ A variety of such outlets exist in society and in educational settings. For example, Bain noted that individuals derive a vindicative satisfaction from witnessing the punishment of wrongdoers. The more or less public punishment of criminals therefore provides a socially acceptable outlet for indulging malevolent pleasure./273/ Humor provides another such source. Bain noted that humor can range from the "laugh of vindicativeness, hatred and derision" to the "laugh expressed by Playfulness and Humour in which the malignant feeling seems almost on the point of disappearing."/274/ Bain wrote:

It is of some importance to understand that in play, fun, and humour there is a delicate counterpoise of opposing sentiments, an attempt to make the most of both worlds--Love and Anger./275/

Such a "hazardous combination" of the opposing sentiments of love and anger can also be witnessed in the play of young children. Bain argued that if the proper balance of the sentiments can be maintained, play provides a very useful outlet for melevolent sentiments./276/

The other sources of emotion and motivation are less fundamental but still play an important role. Power or the contemplation is "a first class motive of the human mind" according to Bain./277/ Self-esteem, self-complacency, pride, vanity and love of praise are also the basis of powerful motives. The self-esteem motives "have a good influence in promoting the attainment of excellence" while praise and admiration are the "most stirring influences that man can exert over man."/278/
There are also "pleasurable emotions incident to the exercise of the Intellectual Powers."/279/ The effort of moving from particular facts to general principles is lightened by the "exhilarating charm" of the "flash of identity in diversity." The relief from the pain of an "intellectual burden" which results when similarities are discovered or problems solved provides an additional source of motivation./280/

Curiosity may serve as a motive, although Bain noted that childhood curiosity is frequently a spurious article in which "questions are put not from the desire of rational information, but from the love of excitement."/281/ Although the teacher should be on guard against this form of curiosity, he or she might profitably employ "the little arts of giving a touch of wonder and mystery to a fact before giving an explanation."/282/

In discussing pleasures associated with self activity, Bain took issue with those who advocated the use of discovery methods which "place the pupil as nearly as may be in the track of the first discoverer, and thus impart the stimulus of invention, with the accompanying outburst of self-gratulation and triumph."/283/ In marked contrast to the advocates of this approach, Bain wrote that

the learner is a learner and not a teacher or discoverer, and has to receive a great deal with mere passive acquiescence, before venturing to suggest any improvements. Unreasonably blind faith is indispensable in beginning any art or science; the pupil has to lay up a stock of notions before having any materials for discovery or origination./284/

He added that

there is a right moment for relaxing this attitude, and for assuming the exercise of independence; but it has scarcely arrived while the schoolmaster is still at work. Even in the higher walks of university teaching, independence is premature,
unless in some exceptional minds, and the attempt of masters to
proceed upon it, and to invite the free criticism of pupils,
does not appear ever to have been very fruitful.\textsuperscript{285/}

Here Bain was adopting the traditional directive stance of the
Utilitarian-Associationist tradition. The teacher, like other authority
figures (e.g., the statesman, the legislator) must exert control in
order to guide individuals in the correct paths. Although there are
problems with such a view of the role of teaching, it is certainly
compatible with Bain's goal of imparting large amounts of information.

Bain's discussion of the emotions and motivation involved in
discipline also displayed his indebtedness to the
Utilitarian-Associationist tradition. The question of how to maintain
discipline among masses of human beings, he wrote, is of very wide
application. This problem, he wrote, has been mismanaged in "almost
every one of the regions of repressive authority—in the state, in the
family and in the school."\textsuperscript{286/} Nevertheless, it is possible to learn a
great deal from these mistakes. For example, he wrote, it is clear that
fear, and particularly "fear of coarse, painful and degrading
inflictions," is not a truly effective sanction for discipline.\textsuperscript{287/} In
contrast, it has become clear that the disposition toward wrongdoing may
be constrained "by a variety of salutary arrangements such as to check
the very disposition to unruly conduct." By suitable training or
education, he wrote, the dispositions that lead to disorder and crime
can be "checked in the bud."\textsuperscript{288/} If these measures fail, punishment
can be fallen back on. However, when employing punishment it is
important that several important principles be observed. First, the
sanctioned action should be clearly described. The severity of
punishment should always be proportional to the severity of the offense. Finally, individuals in authority should abide by the maxim that "certainty is more important than severity."/289/

In the educational setting, Bain asserted, the ingenious employment of "Emulation, Praise, Censure, Forms of Disgrace, Confinement, Impositions," should nearly do away with the necessity of corporal punishment. Bain wrote:

In any well-regulated school, where all the motives are carefully graded, through a long series of increasing privations and penalties, there should be no cases but are sufficiently met. The presence of pupils that are not amenable to such means is a discord and an anomaly; and the direct remedy would consist in removing them to some place where the lower natures are grouped together. Inequality of moral tone is as much to be deprecated in a class as inequality of intellectual advancement. There should be Reformatories, or special institutions, for those that cannot be governed like the majority./290/

At the same time as he issued these authoritarian pronouncements, Bain asserted that the power of authority over individuals is an evil only justified by the prevention of other evils. He added that "authority [must be] restricted to the mildest penalties that will answer its purpose; . . . its very existence has to be justified in each case that arises."/291/ Here we see Bain exhibiting both forms of the utilitarian doctrine: that which advocated a laissez-faire approach to government and that which advocated active intervention in order to combat perceived evils.
Teaching

Bain's critique and his alternative account of the development of the human mind had implications for teaching practice. The teacher's task was not to cultivate or discipline the faculties, but to work with principles drawn from physiology and psychology in order to build up acquired knowledge. The teacher should set up the conditions which facilitate the operation of discrimination, agreement, retentiveness and constructiveness. In addition, the teacher should arrange circumstances so that proper motivation is developed. Finally, the teacher has the task of disciplining the students.

The means for achieving these ends were described in Bain's account of physiological and psychological bearings upon education. Two general conditions facilitating acquisition are physical freshness and the absence of disturbing emotions. The teacher must arrange material so that significant differences and similarities are readily noted. In developing retentiveness, the teacher should aim at "economizing the plastic power of the human system" and therefore must be familiar with "all the known conditions that favour or impede the plastic growth of the system."/292/

Bain noted that one of the most difficult and important tasks of the teacher was facilitating "the momentous transition from the concrete to the abstract, from the particular to the general."/293/ Direct teaching is required to lead students to the higher degrees of abstraction and Bain outlined the techniques that should be employed. First, the teacher should provide a wide variety of examples of the
abstraction; chosen so "as to show all the extreme varieties."
Prototypical instances should be presented first, and more extreme
varieties introduced later./294/

The teacher must arrange the presentation of these examples so as
to highlight their agreements and differences. Bain wrote:

The Accumulation should be continuous, until the effect is
produced. When we are bent upon driving home a new generality,
we should put everything else aside for the time; we should
suffer no interruptions or distraction. We are to accumulate
instances of the proper kind, and in the best order, until all
disparities are sunk beneath the pressure of the agreement./295/

In all these matters, Bain was advocating a very directive role for
the schoolmaster. He or she must control the environment to create
optimal conditions for learning. He or she must select and arrange the
best material for stocking the mind. Bain's account of concept
formation involved the teacher stuffing the mind with judiciously
selected particulars until the abstraction emerged.

In other matters, Bain described the teacher's role as less
directive, although still highly in control. In the development of the
constructiveness that underlies speech, writing, drawing, reading and
other "mechanical acquisitions" the teacher's role might more aptly be
described as that of a "natural selector."/296/ Such constructive
processes have their source in random and spontaneous movements. Bain
wrote that

a great many movements are made before the proper one appears.
The teacher cannot dictate the right movement; he must wait upon
it, and try to clench it when it is at last hit upon./297/

Regarding the teacher's attempts to improve articulation, Bain wrote:

at every stage, it is a question of the compass and flexibility
of the articulating organs, the beginnings being wholly at
random. The teacher's opportunity is some chance hit, which he improves until the lucky movement is well confirmed./298/

In these acquisitions the teacher's task is the management of consequences. Vigilance on the part of the teacher and the proper intervention at the proper time is what is required.

In addition to needing a clear idea of the educational tasks to be performed, Bain recommended that the teacher employ particular methods. Some of these, including several that have already been described, can be deduced from what is known concerning the laws of the human mind. Others are best arrived at by induction from practical experience. Bain recommended that teachers should attempt to "rectify empirical teaching principles, and to qualify deductions from principles by practical experience."/299/

Other practical arts should be included in the training of teachers. The central one recommended by Bain was rhetoric, which would enable the teacher to understand the arts and devices for communicating knowledge. Bain added that the practice of the school not being confined to the means of assisting the understanding, but involving also appeals to the feelings, all the parts of Rhetorical method may come into operation . . . . The Rhetorical arts of good exposition, by Example, by Contrast, by Illustration, by Proof must be known to every successful teacher./300/

Still there remained other arts that should be mastered by the teacher. These include "the ordering of lesson, the conducting of viva voce interrogations, the proportioning of oral instruction to bookwork, and the managing of object lessons."/301/
In a chapter on methods, Bain discussed each of these topics and examined specific methods for teaching geography, history, and science. The most important of these matters is the ordering of lessons as determined by the "logical and psychological order of subjects" a topic to which I will now turn.

Curriculum

If the mind were a tabula rasa, Bain wrote, there would be a particular ideal sequence of studies determined by the characteristics of the material itself, i.e., there would be an ideal logical, or analytic sequence of subjects./302/ Because Bain rejected this view of the mind, he asserted that the logical order of subjects must be modified in line with what is known about the order of the unfolding of the mind's powers. Since the logical order of subjects was given priority in Bain's account I will discuss this first.

Logical Order of Subjects

Bain presented seven different principles that govern the logical sequence of subjects. The two most fundamental principles asserted that we should proceed (1) from the simple to the complex and (2) from the particular, to the general and abstract./303/ The remaining five principles cover significant aspects of these fundamental principles that deserve greater attention. They include: (3) proceeding from the indefinite to the definite (from the unqualified to the qualified); (4) proceeding from the empirical to the rational or scientific (a mode of the transition from the concrete to the abstract); (5) following the
analytic order in cultivating the power of conceiving; (6) proceeding from the outline to details; (7) proceeding from the corporeal to the incorporeal, or from the physical to the mental./304/

Bain argued that these principles dictated the best possible mode of proceeding. However, he also recognized that they could not be strictly followed in all cases. In certain cases, particulars and generals are correlated, so that both must be presented together./305/ He also pointed out that it is sometimes necessary to mix up notions of different degrees of advancement. This is particularly the case because early teaching is desultory, empirical, matter of fact and preparatory. In such haphazard learning the order of presentation is usually not given much emphasis./306/ Finally, because language memory precedes abstractive ability, generalities may be learned before the experience of particulars is adequate to make them understood. For example, Bain suggested that pithy and antithetical forms such as "a line is length without breadth," might be easily committed to memory well in advance of understanding them./307/

Although Bain believed that the logical order of subjects should be the primary determinant of the curriculum, psychological factors may necessitate revisions to this order. Bain described these factors in discussing the psychological order of subjects.

Psychological Order of Subjects
Bain's central point here was that brain development had an impact on educational practice. Specifically, he argued that brain immaturity made it impossible to teach certain subjects to certain groups of students. Psychological or physiological immaturity could influence learning in a number of ways. First, a positive defect in, or the imperfect capability of a sense organ might make sense discrimination difficult or impossible. Second, even if discrimination were possible, i.e., if the intellectual susceptibility was present, there still might be a deficit in intellectual attention, making abstraction impossible. Third, even if all these conditions were met, requisite motives and interests might be immature. Finally, self-conscious or subjective knowledge must be assumed in teaching certain subjects but this also takes time to develop. Given the requisite psychological or physiological maturity, the logical order of subjects is the primary determinant of curricula. Lacking such maturity a different order must be followed: the psychological order of subjects. Bain first described the "immature mind" then discussed the necessary adaptations to the curriculum which followed from these facts.

Bain's approach in this section was both inductive and deductive. He first presented the accepted view of children, then related this view to his own psychological principles. Frequently noted characteristics of childhood are a love of activity and dislike of application; a delight in the senses and sensation; and a curious and inquisitive nature coupled with a strong tendency to mimicry. In addition, children are said to be credulous, imaginative, fond of dramatizing, sociable and sympathetic. Bain noted that these characteristics are all closely
related to the active and emotional sides of the mind. This observation meshed with his view that these aspects of the mind dominate in the early years: spontaneous energy is abundant and children of this age are especially susceptible to pleasure and pain. Bain added that interest in the impressions of the senses leads children to be prone to observation and averse to abstraction. Their lack of control over attention and the immaturity of their motives and interests means that the reasoning powers are virtually non-existent. As a result, in these early years children are strong on memory and weak on judgment.

The transition to a higher mode of functioning, wrote Bain, is only possible when the child acquires the ability to be interested in "the indifferent." This ability develops as the child discovers that certain events or objects, indifferent in themselves, are regularly connected with events or objects directly yielding pleasure and pain. Bain wrote:

in this way very great additions are made to the stock of discriminated and remembered objects; the motive still being an interested one—the access of pleasure and the avoidance of pain. The motives continue the same, but they are intellectually extended. The wider the view of the collaterals of our pleasures, the wider is the influence of the stimulus to attention and discrimination.

But this is only part of the story. The child must eventually come to squarely face the fact that attention must be paid to subjects lacking in extrinsic or intrinsic pleasure. Bain wrote:

the uninteresting must be faced at last; ... by no palliation or device are we able to make agreeable everything that has to be mastered. The age of drudgery must commence; every motive that can avert it is in the end exhausted.

And he recommended that the teacher attempt to measure the child's power of forced attention. Use this power to the full, without abusing it, if you can judge the happy mean. Begin the discipline of life by inuring gradually to
uninviting, to repugnant and severe occupation; but see also that you have at command the alternative of relaxation and enjoyment./315/

Bain attempted to incorporate these views into recommendations for the development of school curricula. He asserted that formal schooling should commence around the age of four or five, because it is then that the child is likely to benefit from education and not be unduly harmed by it./316/ Some preschool training is desirable and it should focus on developing speech, cultivating an interest in observing persons and things and in connecting language with these objects./317/

Bain argued that because the years between six and ten are the period of greatest brain growth, it is the period of greatest mental plasticity. He recommended that these years be devoted to memory tasks. Language acquisitions should be stressed during this period. The acquisition of simple facts and moral maxims is also appropriate at this time./318/ This period is seen by Bain as the optimal time for stocking the mind with the particulars that, in his inductive account of the growth of knowledge, provide the basis for all higher intellectual processes. As we will see, James Ward criticized this educational implication of empiricist philosophy./319/

Because reasoning powers do not begin to be developed until the age of ten or eleven, Bain recommended that more difficult sciences such as grammar, arithmetic and mechanics be postponed until that time. Such subjects require a good command of attention, and reasoning powers capable of working with the "necessary junctions and disjunctions of ideas."/320/
Specific recommendations on the best procedures to employ in teaching various subjects are presented throughout the work. I will not present these, although I will briefly describe Bain's recommendations concerning the curriculum for higher education.

Renovated Curriculum

As we have seen, Bain argued that the relative costs and benefits of various subjects must be considered in developing curricula. And, as we have seen, Bain argued that the study of science must take precedence over the study of classics according to these criteria, because the sciences yield more useful information and involve less wasted effort than the classics. This conclusion, along with others led him to propose a renovated curriculum for secondary schools and universities. He proposed that the following branches be given equal weight in such a curriculum:

I. Science, including the primary sciences (mathematics, physics, chemistry and physiology) and one or more of the natural history sciences (mineralogy, botany, zoology, geology and also geography.)

II. Humanities, including first, history and social science (i.e., the science of government and social institutions, political economy and jurisprudence) and second, universal literature.

III. English Composition and Literature./321/

The study of languages, living and dead, were given only a secondary role to play in such a curriculum. Bain asserted that two to three hours per day should be devoted to each of the main branches of knowledge, while any remaining time be devoted to subjects "not required of all, but ... suitable to the circumstances of individuals."/322/
Having first claim among such optional subjects would be languages. The choice of language should be dictated by its likely usefulness; in this respect modern languages are to be preferred. Other recommended secondary subjects were elocution, music, drawing and instruction in special branches of knowledge.

Bain believed that his renovated curriculum focused on the departments which "have the best claims to be called a Liberal Education." He wrote:

I would not call science alone a Liberal Education, although a course that implied a fair knowledge of the Primary Sciences, a certain amount of Natural Science, and a wide grasp of Sociology, would be no mean equipment for the battle of life.

Likewise, he added, "a Liberal Education would not be generally considered complete without Literature." He wrote:

The scheme thus set forth appears the only means of arresting the tendency inevitable at the present day to excessive specializing of the studies constituting a liberal education. It is the supposed necessity of retaining dead languages and of adopting foreign living languages as an integral part of education, that leads to options so very wide as to leave out science almost entirely from one course, and literature almost entirely from another.

Since neither option is satisfactory, he wrote, we should simply deemphasize the study of languages and make the study of science and literature the heart of a liberal education.

Bain thus steered between the extremes of those advocating a wholly scientific education and those advocating a wholly literary education. However, there is no evidence that his recommendations had any impact upon educational reform during the last third of the century. In general, his educational doctrines appear to have had little direct
influence. As Hobbs and Cornwell write:

if one looks at the development of British educational psychology, it is difficult to discern any particular influence of Bain persisting. The most distinctive work of British educational psychology has been that concerned with mental measurement, such as that of Burt, Spearman, Thomson and Vernon... Francis Galton... is a far more obvious originator of this tradition than Bain./328/

If it is true, as seems to be the case, that Bain's work did not "anticipate" the development of educational psychology we might inquire why. I would suggest that the defects of the Utilitarian-Associationist view of mind permeated his educational psychology and that the exposure of these defects forestalled the application of his work. The critique of the Utilitarian-Associationist account of mind will be presented in Part III. I will conclude this chapter by reviewing Bain's ties to the educational philosophy of the Utilitarian-Associationist tradition.

Bain's Education as a Science and the Utilitarian-Associationist Tradition

As we have seen, education was given a very important role to play in the Utilitarian-Associationist tradition—-it was to be one of the central means of reforming society. While Bain's goals in Education as a Science were considerably more modest, utilitarian values permeated the work. As Hobbs and Cornwell note, Bentham was the most frequently cited author in the work, challenged only by Euclid./329/

Bain's emphasis throughout the work was on the usefulness of various studies as assessed by their costs and benefits. Bain's criticism of the teaching of the classics proceeded along these lines./330/ Bain commended those who suggested that the "order of
presentation of words in exercises" should be determined by their relative frequency in natural language, although he suggested that this principle might be more appropriate in other spheres than language./331/ He wrote:

It would be well if we could forecast the probable frequency of the use of every acquisition whatever, so that we might choose by preference those that oftenest come into play, and, I may add, on the most important occasions. Such a criterion would attest the high value of the Experimental Sciences, such as Physics and Chemistry, the smaller but yet considerable value of Mineralogy and Botany, and the very small value of many things much more prominent in our existing educations than any of these./332/

The concern about the usefulness of studies also loomed large in his discussion of the proper proportions in curricula. Bain suggested that "a curriculum might be so arranged that, while each topic should be useful in itself, the whole would be a failure."/333/ As an example, he cited the "irremediable waste of human strength" incurred by most students competing for mathematical wranglerships at Cambridge./334/ The study of foreign languages is also likely to involve such disproportion. Bain warned that acquiring even one foreign language involves "a very large expenditure of mental force, and ought not to be entered on without due calculation of probable fruits." He added that "very few men can by any possibility turn to account two ancient and four modern languages."/335/

Although Bain regarded the issue of disproportion in studies as less severe on the primary level than in higher education, he still felt that errors existed. He noted that "sufficient attention has not yet been paid to the best selection and adjustment of topics for the needs of the pupils in afterlife."/336/ In addition, primary education serves
two distinct groups: the masses who obtain their entire education on this level and the other classes who then proceed on to secondary schools (and are required to study Latin and Greek.) Bain proposed that the primary curriculum, like the higher curriculum, be focused on knowledge (i.e., sciences) and literary training. This would produce "harmony between the primary and secondary teaching."/337/ Moreover, he recommended that the

sequence of progression of topics . . . be such that, at whatever point the pupil left school, the knowledge gained would all be available for use; there would be no wasted beginnings. Each year of the course might be made to yield the best crop that the soil will furnish./338/

Bain concluded,

There can thus be no other curricula arrangement, even for the labouring population, than to give them as much methodized knowledge of the physical and moral world, and as much literary training as their time will allow./339/

Although Bain argued that the school could not have a major influence on the development of morality, he did provide a fairly extensive discussion of the teaching of morality. Here too, we would expect to see the influence of the Utilitarian-Associationist tradition and such is indeed the case. In arguing that the school plays a limited role in the development of morality, Bain reiterated Bentham's view that "the public dispensation of punishment and reward" plays the greatest role in shaping moral behavior./340/ Like Bentham, Bain maintained that government, legislation and social pressure were the most important sources of morality. Bain did note that analogous factors operate within the school setting. He placed much stress upon the teacher's role as an authority; a role analogous to the authority of government and the law. He wrote that "whoever occupies a position of authority
ought to be familiar with the general principles and conditions of
Punishment as they may be found set forth in the Penal Code of Bentham,
and he provided a short summary of Bentham's principles to aid the
teacher./341/

Bain also argued that industry "is the basis and sine qua non of
the other virtues," and that "to reconcile the young to abandon ease and
self-indulgence for labour is one of the most urgent topics of moral
suasion."/342/ Because one of the primary tasks of the teacher is
getting students to apply themselves to their work, the teacher
indirectly plays a role in the development of moral character.

The teacher has the additional advantage of being in a position to
systematize the haphazard moral lessons learned outside the school
setting. Direct moral teaching is employed toward this end. Bain
contended that "the difficulties of moral teaching exceed in every way
the difficulties of intellectual teaching," but he attempted to provide
some guidelines for the teacher./343/

First, "a good classification of virtues and vices is a prime
essential." Bain's own classification of the virtues, including Prudence
(industry, thrift, temperance), Justice and Benevolence, was presented
and discussed with regard to teaching./344/ The teacher must also
correctly apprehend motives, distinguishing between the self-regarding
and the extra-regarding classes of motives./345/ Bain noted that the
teacher must inevitably work with lesson books prone to such
exaggeration and stated that "all he can do is to keep well before him
the sober facts of life."/351/ Bain's utilitarian view of man, as
primarily motivated by self-interest appears. He wrote:

While in the ideal, self-devotion or self-sacrifice is depicted so as to kindle a momentary glow, the hard reality warns us that only a very small portion of this can be engrained in the average individual. Rivalry, competition, over-grasping and supplanting—are what we have to deal with on one side; and on the other, we have to set the tendencies to the social, the sympathetic, and the amiable; and close is the game we have to play in the encounter./352/

In a number of ways, the tenets of the Utilitarian-Associationist tradition permeated Bain's writing on the science of education.
NOTES FOR CHAPTER 5


2. Bain, The Emotions and the Will, 3d. rev. ed. (New York: D. Appleton and Company, 1875 [1859]), pp. 304-5. Unless otherwise noted all references will be to the third edition of this work. In adopting this construct Bain was rejecting the view that volition has its origins in primitive emotional expression. See ibid., pp. 314-15. Ward later adopted this alternative.

3. Ibid., pp. 310-12.

4. Ibid., p. 309.

5. Ibid.


9. Ibid., p. 347.

10. In a note concerning the bearing of the doctrine of Evolution upon his view of the will, Bain reasserted his belief that the ability to consciously emit trial movements is an acquired ability, while admitting that it might be instinctive. Ibid., pp. 319-20. This latter possibility does not contravene Bain's experientialism, as he shared the Lamarckianism of Spencer and Darwin. Experience, on such a view, simply ranges beyond the lifetime of the individual. See ibid., pp. 48-67 for Bain's discussion of this view. Bain's position is still far less radical than that held by James and John Stuart Mill, as he rejected the Helvetian doctrine of equal original capacities. Bain, John Stuart Mill: A Criticism with Personal Recollections (London: Longmans, Green and Company, 1882), p. 84.

11. Bain, Emotions and Will, p. 333. Here Bain was positing the formation of a volitional "learning set."
12. Ibid., p. 344.
13. Ibid., p. 351.
15. Ibid., pp. 354-55.
17. Ibid.
18. Ibid., p. 359.
20. Ibid., p. 370. This in turn rests upon the doctrine of identical seats for impressions and ideas.
21. The reader should here be reminded of Bain's assertion that the senses are a key to the intellect. More specifically, he asserted that what we know about the processes of sensation pertains directly to the processes of ideation. Bain, Senses and Intellect, p. 346. In this particular context, Bain's motor theory of thought provides him with a way of formulating a mechanistic account of a mental process—Attention—that is quintessentially purposive. Bain wrote:

"Not that we should have had any title to say beforehand, that the volition could operate, as a matter of course, under the restriction now implied [i.e., with respect to ideas]; but, seeing that it is a fact, we treat of it as of the same nature with the power of voluntary attention directed to present realities." (Bain, Emotions and Will, p. 371.)
22. Ibid.
23. Ibid., p. 373.
24. Ibid.
25. Ibid. Thus the principle of similarity provides the mechanism underlying interest, which only appears to govern attention in a teleological fashion, since the power underlying this principle is a purely physical process. See Senses and Intellect, pp. 460-61.
27. Ibid., p. 376.
28. Ibid.
31*. Ibid., p. 396. Concerning the conflict between actual pleasures or pains and the less forceful remembered pleasures and pains, Bain wrote:

"The thoroughly educated man in this respect is he that can carry with him at all times the exact estimate of what he has enjoyed, or suffered, from every object that has ever affected him, and, in case of encounter, can present to the enemy as strong a front as if he were then under the genuine impression." (Ibid., p. 404.)

34. Ibid., pp. 395-96.

35. These states, along with desire and belief, are described by Bain as "states of ideal exertion," as in such states the volitional impetus is arrested. Such states are derived from our muscular sensibility which enables us to sense degrees of expended energy. Ibid., p. 549 (note).

36. Ibid., pp. 408-9. The period of deliberation is limited by aid of another motive which derives its force from "the further evil of protracted decisions." Ibid., p. 411. Again these additional "motives" seem to function much like epicycles in an earlier "scientific" account.

37. Ibid., pp. 410-11.
38. Ibid., p. 410.
39. Ibid., p. 418.


42. Bain, Emotions and Will, p. 421.
43. Ibid., p. 422.
44. Ibid., pp. 567-74.
45. Ibid., p. 569.

46. Ibid., p. 567.

47. Ibid., p. 568.

48. Ibid.

49. Ibid., p. 569.

50. Ibid.

51. Ibid., pp. 569-70.

52. Ibid., p. 570.

53. Ibid., pp. 570-71.

54. Ibid., pp. 572-73.

55. Ibid., p. 573.

56. Ibid., pp. 440-42.

57. That is, of what he regards as necessary for conduct that will be prudent and of social value.

58. It is frequently pointed out that James relied upon Bain for his account of habit. Actually, James primarily cited Carpenter in his account of habit; Bain's account is relied upon in his discussion of the moral habits. The historical connection between the accounts of habit given by Bain and Carpenter has not been explicated.

59. Ibid., pp. 440-41.

60. Ibid., pp. 442-43.

61. Ibid., pp. 443, 454.

62. Ibid., p. 448. Bain's attitude toward emotion may be partly a consequence of his Scottish and Calvinist upbringing.


64. Ibid., p. 445.

65. Ibid., p. 456.

66. Ibid.

67. Ibid., p. 452.
68. Ibid.

69. Ibid., p. 454. That Bain advocated the cultivation and control of "spontaneity" provides further support for my contention that this force was only spontaneous in name.

70. Ibid., p. 457.

71. Bain wrote:

"as no human being is ever emancipated from its [authority's] sway, an education in submission is as essential a preparation for going out into the world, as is an education in a sound bodily regimen." (Ibid., pp. 444-45.)

On the other hand, he also insisted that habits of authority must be cultivated to enable us to resist our tendency "to sympathize with our fellow-beings under all circumstances." Ibid., p. 457.


73. Ibid., p. 443, 453-454.

74. On Bain's view of moral character, moral action rested upon habits rather than conscious reflection. The moral habits mediate conflicts of motives by increasing the power of one motive over the other. Ibid., p. 440. The only acceptable meaning that "self-determination" can have in Bain's view is, "the opposition of permanent and enduring motives to temporary and passing solicitations." Ibid., p. 491.

This account of self-determination is more consistent with the associationist tradition than that provided by J. S. Mill, despite the fact that Mill tried to downplay the radicalness of his departure with vagueness on this point. See above, Chap. 2, section entitled "Character and Education." The difference between Bain and Mill's accounts stems from Bain's adamant rejection of the "self" or "ego" and Mill's willingness to admit that some such notion might be necessary.

75. Ibid., p. 482. Actually Bain states that if other aspects of the mind are amenable to scientific explanation, then so is the will. Here we see another case where one person's modus ponens is here we see another's modus tollens.

76. Ibid., p. 479.

77. Ibid., p. 483.

79. Ibid., pp. 483-84. As we will see, James Ward also recognized this problem. Citing Locke, he argued that the question is not whether the will will be free but whether a man be free. Encyclopedia Britannica, 11th ed., s.v. "Psychology," by James Ward.

80. Ibid., p. 486.
81. Ibid.
82. Ibid., p. 490.
84. Ibid., pp. 490-91.
85. Ibid., p. 491.
86. Ibid.
87. Ibid., p. 492.
88. Ibid.
89. Ibid.
90. Ibid., p. 493.

91. Ibid. According to Bain, certain apparent exceptions (when people deliberately do otherwise than we might expect) are simply the effect of a motive of "perverseness" peculiar to certain individuals. The multiplication of "epicycles" continues.

92. In earlier editions Bain had addressed the general form of the argument by denying that the incontrovertible testimony of "a moment of consciousness" constituted knowledge. Sidgwick's argument was presented in The Methods of Ethics, 1st ed. (London: Macmillan and Co., 1874), pp. 43-57. Bain's own views on the free will issue are made quite clear in his discussion of Sidgwick's argument. Bain obviously felt that Sidgwick's argument was important, as he incorporated his discussion of it in the third edition of Emotions and Will (1875), just one year after Sidgwick's book was published.

93. Sigwick, Methods of Ethics, pp. 51-55; Bain, Emotions and Will, p. 494.
94. Ibid., p. 495.
95. Ibid., p. 496.
96. Ibid., p. 495.
97. Ibid., p. 497.

98. Ibid., p. 498.

99. Ibid., p. 495. Bain here was requiring Sidgwick to provide evidence that would constitute proof of the null hypothesis, a peculiar requirement for an empiricist to posit. However, Sidgwick did not claim that his account of free will, carried implications for morality, as the focus of moral judgments (at least within the Utilitarian framework) is upon the consequences, not upon the causes or lack of causes, of actions. Sidgwick, *Methods of Ethics*, pp. 55-57; Schneewind, *Sidgwick’s Ethics and Victorian Moral Philosophy* (Oxford: Clarendon Press, 1977), p. 208.


101. Ibid., pp. 364 (n. 102), 404-11 (n. 108).

102. Ibid., pp. 411-13, 423 (n. 108).

103. For comments on John Stuart Mill's "transcendental" account of belief see Bain, *John Stuart Mill*, p. 121. Bain also wrote, "It seems to me, however, that if we take account of all the powerful contrasts between the Sensation and the Idea, we shall have an amount of difference that dispenses entirely with an inexplicable residuum such as John Stuart Mill contends for."


106. Ibid., p. 506.

107. Ibid., p. 507.

108. Ibid., p. 509. Bain pointed out that the logical opposite (the contrapositive) of belief--disbelief--entails an identical mental state; that characterized by certainty or conviction. Ibid. Since Bain was focusing upon mental states, he chose to emphasize doubt and uncertainty as they entail psychological states antithetical to those generated by belief.

109. Ibid., p. 516.

110. Ibid., p. 517.

111. Ibid.
112. Bain drew no distinction between knowledge and belief, asserting that "knowledge, therefore, is identical with affirmation and belief." Ibid., p. 568. However, in other places he attempted to distinguish between conviction based upon narrow experience and conviction based upon broader experience. Ibid., pp. 514-15.

113. Ibid., pp. 511-12. See also Bain's account of the mental origin of belief in Mill, Analysis 1:395-398 (n. 107). Bain's doctrine of primitive credulity is highly similar to Reid's account of the innate character of our belief in the uniformity of nature. Bain remarked that he read and reread Hamilton's Reid during the period of writing Senses and intellect, but does not specify what notions he drew from that work. Bain, Autobiography, p. 234. An examination of the impact of Reid's work on Bain would be an valuable contribution to the literature.

114. Bain, Emotions and Will, 1st ed., pp. 581-83. He wrote:

"It is the active prompting of the mind itself that instigates and in fact constitutes the believing temper; unbelief is an after product, and not the primitive tendency. Indeed, we may say that the inborn energy of the brain gives faith, and experience scepticism." (Ibid., p. 582.)

115. Bain, Emotions and Will, p. 512. Bain wrote:

"whereas to the logician, there is a great gulf between the present and the future, the known and the unknown, to the natural mind there is not even a break. The early mind laughs the logician's gulf to scorn." (Mill, Analysis, 1:398 (n. 107).)

Fisch points out that the shift away from a physiological account of credulity coincided with a critique of Bain's account by James Sully in which Sully argued against the view that primitive credulity arose out of the spontaneous activity of the nervous system. Sully, "The Development of Belief," Westminster Review (January, 1872), pp. 57-58, 59. Bain shifted his view, maintaining in the third edition of Mental Science (1872) that belief "is a fact or incident of our intellectual nature, although dependent as to its energy upon our Active and Emotional tendencies." See Fisch, "Bain and Pragmatism," pp. 422-23.

In the third edition of Emotions and Will (1875) Bain mentioned Sully's objections to his account, including the fact that "mere spontaneity may be accompanied with belief, or it may not, there may be a disposition to believe or to anticipate in moments of pure quiescence" Bain, Emotions and Will, p. 536. See Sully, "Development of Belief," pp. 57-58. And he said of his own view,

"I have here regarded belief as a primitive disposition to follow out any sequence that has once been experienced, and to expect the result. It is thus an incident of our intellectual constitution, for it first shapes and forecasts the order of the world and then proceeds upon that, until a check occurs .... We may if we please, call it a impotence of
thought; for without some positive interference from without, there is no other way of doing or thinking. It is not made up, in the first instance, by either activity or emotion, but is largely magnified by both." (Bain, Emotions and Will, pp. 536-37.)

This revision, while representing a substantial concession, is not reflected in the text of this or later editions which continue to propound the "older view" that belief is most intimately related to action, not to emotion or intellect.

116. Ibid., p. 512.
117. Ibid.
118. Ibid.
119. Ibid.
120. Ibid., p. 513.
121. Ibid., p. 515.
122. Ibid., p. 516.
123. Ibid.
124. Again, the resemblance to Reid's views is striking (see n. 113 above). Bain wrote, "The great master fallacy of the human mind is believing too much—believing without or against evidence." Ibid., p. 513. Further:

"The mental state of ignorance or of small experience is a state of exaggerated impulses,—over-credulity or over-scepticism; . . . . The same primitive credulity that passes beyond the reality of things, when there has been no apparent check, under-estimates the consistency of things, when there is a check . . . . In the early stages of the human mind, there is too much belief at one point and too little at another." (Ibid., p. 515.)

125. Ibid., pp. 515-16. Bain wrote, "The only basis of arbitration is comparative frequency, and this is what the mind must resort to, and what is suggested to the practised intelligence, so far as the meddling of the emotions will allow." Ibid., p. 515.

126. Ibid., pp. 518-20.
127. Ibid., pp 520-24.
129. Fisch, "Bain and Pragmatism."

See also Mill, Analysis, 1:403-4. 1:403-404.

131. Mill, "Bain's Psychology," p. 319. According to Fisch, Bain did attempt to provide a more complete analysis in the note appended to the third edition of Mental Science (1872). There he stated that

"a failure, in other words, a breach of sequence . . . produces a mental shock, a breach of expectation, a disappointment, which unhinges and discomposes the mind. It is in point of fact destructive of the prior state of expectation; that state cannot be renewed without a roundabout process . . . . It becomes a serious part of our education to surmount, reconcile, and accommodate, these interrupted sequences; and we fall upon various modes of effecting the end. There are some methods of a purely rational kind; as, for example, when we set ourselves to discover the reasons of the discrepancy and find that it is only apparent. Another way is to surrender entirely certain sequences as having no validity whatever. (Bain, Mental and Moral Sciences, p. 100; quoted in Fisch, "Bain and Pragmatism," p. 424.)

Fisch also pointed out that Bain's account is highly similar to C. S. Pierce's belief-doubt theory of inquiry. Ibid.


133. Bain, On the Study of Character, including An Estimate of Phrenology (London: Parker, Son and Bourn, 1861).

134. Robert Young, Mind, Brain and Adaptation in the Nineteenth Century (Oxford: Clarendon Press, 1970), pp. 121-22. Young admits that the evidence on this point is incomplete and that Bain may have been drawn to the project by J. S. Mill. Ibid., pp. 123-24.

According to J. A. Cardno, Bain's work displays a shift toward a somatic approach between 1839 and 1849. "Bain and Physiological Psychology," Australian Journal of Psychology 7 (1955):109-11. As Young notes, the phrenological influence stems from an earlier period. Young writes that beginning in 1835, Bain "studied George Combe's Constitution of Man at the Mechanic's Mutual Instruction Class at Aberdeen." Young, Mind, Brain and Adaptation, p. 121. Bain's own account of this period indicates a more casual exposure to the ideas. He wrote: "Combe's Constitution of Man had great influence at that time; and I think we went cordially along with it while only partially admitting his phrenological tenets." Bain, Autobiography pp. 27-28.
There were a number of other significant influences on Bain during this period that might have suggested to Bain the value of incorporating physiology into psychology. Bain became acquainted with John Stuart Mill in 1841 and from 1842-47 spent summers in London. Mill introduced him to the work of Auguste Comte, who Bain read during the summer of 1843. Bain, *Autobiography*, pp. 153-54, 156. Bain introduced Comte's work to members of the Aberdeen Philosophical Society and this work was the basis of their discussions during the winter of 1843-44. pp. 156-58. Soon after this, Bain began to incorporate physiology into his works. See *Autobiography*, pp. 159, 164-65.

Bain never became a wholehearted supporter of Comte's views. He concurred with John Stuart Mill's criticisms of Comte's system and argued that psychology had an independent status as a science, *Autobiography*, p. 158. See also Ned A. Shearer, "Alexander Bain and the Classification of Knowledge," *Journal of the History of the Behavioral Sciences* 10 (1974):58-65. Although reading Comte may have stimulated Bain to incorporate physiology into psychology, the task was carried out within the framework of the Utilitarian-Associationist principles he was absorbing from Mill during this period.


137. Ibid. Bain wrote:

"There is nothing more certain, than that the discriminating knowledge of individual character is a primary condition of much of the social improvement that the present age is panting for. The getting the right man into the right place is mainly a problem of the judgment of character; the mere wish to promote the fitting person is nugatory in the absence of the discrimination." (Ibid.)

138. Ibid., p. vi. He added that "it requires a great and marked superiority in the latest development of any science, to dispense entirely with the consideration of the prior modes of arrangement." (Ibid.)


141. As Robert Young wrote:

"[Bain] wants to show that the phrenological faculties are not the ultimate determinants of character and that a true science of character can be deduced from the laws of association, the pleasure-pain principle, and his own primitive mental elements."
142. See Chapter 2, n. 53 above.

143. Nevertheless, like Mill and others in the Utilitarian-Associationist tradition, Bain argued that the proper approach is to "see how much can be ascribed to circumstances and cultivation, before we put down all the appearances to the account of nature." Bain, On Character, pp. 189-90.

144. Bain was adamant on the point that phrenology was merely a science of character, not a science of mind. Ibid., p. 29. This suggests a further reason for Bain's interest in phrenology: a concern about demarcating the sphere treated by phrenologists, from the sphere treated by psychologists. Bain feared that the physiological approach might "swamp the science of MIND as treated by the recognised methods." Ibid., p. 30. Specifically, Bain was concerned about the fate of the "recognized method" of introspection. See also ibid., p. 25.

145. Ibid., p. 15.

146. Ibid., pp. 27, 29-30.

147. Ibid., p. 29.

148. Ibid., pp. 31-34.

149. Ibid., p. 48.

150. Ibid., p. 75. Bain wrote:

"A certain part of the brain and nervous system of every animal evidently serves as the motive power of the active mechanism. In such a case as the torpedo, where the offensive weapon is peculiar, consisting of an electric pile, there is a large lobe of the brain for supplying nervous power to the instrument, as well as for directing the time and manner of its employment. (Ibid.)"

151. Ibid.

152. Ibid., p. 76.

153. Bain brought up some of the traditional objections to the doctrine of a moral sense that was implied by this account. Ibid., pp. 124-25.

154. Ibid., pp. 126-27.

155. Ibid., p. 182.
156. Ibid., p. 146.

157. Regarding muscular sensibility Bain wrote:

"It would be an exceedingly interesting result, if we could allocate with certainty the cerebral centres whence emanate the impulses to our voluntary movements, and which, when largely developed, give sensibility and delicacy of gradation to these movements; but we cannot say that phrenology has even started a plausible conjecture on this matter." (Ibid., p. 153)

On the faculty of individuality see ibid., pp. 146-47, 165-69.

158. Ibid., pp. 169-70.

159. Ibid., p. 172.

160. Ibid., p. 173.

161. Bain argued that the appearance of such a generalizing or abstracting faculty might simply be the consequence of "the smallness of the observing tendencies." Ibid., p. 175.

162. Ibid., pp. 261-63.

163. Ibid., p. 188.

164. Ibid., p. 189.

165. Ibid.


167. Ibid., p. 192.

168. Ibid., pp. 195-98. Bain added: "The history of the world shows that the inferior stages of humanity are most averse to the continuous, and most disposed to the fitful displays of energy." Ibid., p. 196.

169. Ibid., pp. 199-200.

170. Ibid., p. 201. Bain also wrote:

"The active temperament is a good instrumentality in general industry, and especially in dull routine. Where we want the continuity and persistence of a machine, we do well to procure people of this quality, who, after the requisite training will consent, better than any other, to become prime movers in a narrow circle. A fair quantity of intelligence and a large share of activity renders the Anglo-Saxon race the best workmen..."
in the world. As bodily activity predominates in them, they are more fit for the lower walks of manual industry; the Lancashire and Yorkshire navvies are unrivalled as human machines." (ibid., p. 203)

Bain's social views were obviously not as progressive as others in the Utilitarian-Associationist tradition.


172. Ibid., p. 212.
173. Ibid., p. 213.
174. Ibid., p. 215.
175. Ibid., p. 217.
176. Ibid., p. 218.
177. Ibid., p. 271.
178. Ibid.
179. Ibid., p. 280.
180. Ibid.
181. Ibid.
182. Ibid., p. 283. Bain added that "the intensity of the impress favours the remembrance of it" and that this fact "is one reason for making punishment more severe, less inflictions leaving too little trace behind them." (Ibid., p. 284.

183. Ibid., p. 286.
184. Ibid., pp. 287-88.
185. Ibid., p. 292.
186. Ibid., p. 293.
187. Ibid., pp. 293-95. Bain wrote that:

"a well-remembered experience of the conscious states that we ourselves have passed through in the course of our lives, is the real basis of the power of sympathy, and is of course the same basis which serves for prudence, steadiness of conduct and serenity of temper in our own individual career." (Ibid., pp. 294-95.)

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Bain clearly regarded the retentive power of the mind as important for many aspects of character.

188. Ibid., p. 296.
189. Ibid., pp. 297-98.
190. See Chapter 4, section headed "Sympathy."
192. Ibid., p. 304.
193. Ibid., p. 228.
194. Ibid., p. 306.
195. Ibid.
196. Ibid., p. 307.
197. Ibid., pp. 314-16.
198. Ibid., p. 324.
199. Ibid., p. 316.
201. Ibid., pp. 339-40.

202. Bain wrote about the work: "It had a slow but steady sale, and in a few years the edition was exhausted; but, not seeing my way to the recasting that I thought necessary, I never reprinted it." (Autobiography, p. 260) The only influence of the work that I have found is an essay written by a Harvard senior which was later published as a book: Thomas A. Hyde, How to Study Character; or the true basis for the Science of Mind, including a review of Alexander Bain's criticism of the phrenological system (New York: Fowler & Wells, 1884). Hyde's work is generally favorable to phrenology and critical of Bain; he accuses Bain of not having read phrenological doctrines closely.

Robert Young disparages Bain's book, despite the fact that it is the main source of evidence for his claim that Bain's interest in phrenology led him to unite the study of physiology and psychology. Young, Mind, Brain and Adaptation, pp. 121-23; 250. Young writes:

"Bain was certain that the phrenological analysis of character was inadequate . . . . but when he set out to improve on it he foundered. The analysis which he so confidently put forward in his systematic treatise simply did not account for the facts of character. One suspects that after he wrote On the Study of Character, he grasped this. (Ibid., p. 132)
I fully agree with Young's assessment of Bain's account of character. The associationist account of the emotions seem to be the weakest link in the associationist account although other problems with their account also contributed. Despite these very real problems, I would suggest that there were other reasons for the failure of the work. Large sections of the book are simply quotations lifted from the works of phrenologists or critics of phrenology. Bain frequently gets lost in the details of the phrenological scheme. I suspect that his original intention was to quickly deal a death-blow to the phrenological scheme, but that he discovered that there was more of interest in such schemes than he had suspected and got bogged down in details.

203. The work went through three editions (reprintings) in its first year of publication. It was translated into French, German, Spanish and Italian.


205. Ibid., p. 4.

206. Ibid., pp. 4-5.

207. Ibid., p. 6.

208. Ibid., p. 4.

209. Ibid., p. 7.

210. Ibid. Bain implied that economy of effort should be the final arbiter in such cases. Only languages which will be used should be taught and only congruous subjects should be taught together. Ibid., p. 394.

211. Ibid., p. 9. Bain excluded certain "acquired powers" from this province, notably those of "production and invention."

212. Ibid., p. 8.

213. Ibid., pp. 11, 15.

214. Ibid., p. 8.


217. Ibid.
218. Ibid., pp. 399-400.

219. Ibid., p. 402.

220. Ibid., p. 403. Such a classification was provided in Bentham's Deontology.

221. Ibid., p. 401.

222. Ibid., p. 1

223. Ibid., p. 121.

224. Ibid.

225. Ibid., p. 122.


228. Ibid., p. 126.

229. Ibid., p. 128.

230. Ibid., pp. 125, 127.

231. Ibid., p. 125.

232. Ibid., p. 136.

233. Ibid., p. 367.

234. Ibid., pp. 361-65.

235. Ibid., pp. 370-71.

236. Ibid., p. 138.

237. Ibid., p. 141.

238. Ibid., pp. 135, 247-72, 439-44.

239. Ibid., pp. 132-35, 248.

240. Ibid., chap. 4.

241. The chapter on physiology is less than four pages long, while the chapter on psychology is 104 pages long. However the psychological chapter does contain a good deal of physiological material.
242. Ibid., p. 11
243. Ibid., p. 12.
244. Ibid.
245. Ibid.
246. Ibid., p. 13.
247. Ibid., p. 23.

249. Ibid., p. 17 (note). Although Bain claimed to be taking psychological development into account, the facts he found pertinent were facts of brain development. He wrote:

"If we could suppose the brain, at birth, to possess all the physical capabilities of our brain at twenty-one but a tabula-rasa in respect of impressions of every sort... Priority of study would follow a very plain rule; Analytical or Logical sequence would be the one principle of order." (Ibid., p. 173.)

As we will see, a different order of subjects (the psychological sequence) was called for because "the educator works on a growing brain." Ibid., p. 174.

250. Ibid., pp. 186-87. Another reason for focusing on such memory tasks is that at this age children lack the ability to reason. Note that Bain's advice is consistent with the principle of payment-by-results. As we will see, Ward criticized this aspect of Bain's educational thought.

251. Ibid., p. 17.
252. Ibid., p. 20.

253. Ibid., p. 16. Here Bain is giving discrimination a larger role to play in determining character than he had in On the Study of Character.

254. Ibid., pp. 18-19.
255. Ibid., p. 21.
256. Ibid., pp. 25-26.
257. Ibid., pp. 23-25.
Bain wrote:

"The way to new powers is by trial and error . . . If we have been well led up to the combination required, and if we have before us a very clear idea of what is to be done, we do not need many tentatives; the prompt suppression of the wrong movements ultimately lands us in the right. (Ibid., p. 43)

Bain's trial and error account of learning was echoed in the work of Thorndike, Pierce and Popper.

Bentham had identified "motives of antipathy" as one of his fourteen springs of action. See above, chapter 1, section titled "Bentham's Theory of Action."

"By submitting in turn to be victimized, a party of children can secure, at a moderate cost to each, the zest of the malevolent
feeling; and this I take to be the quintessence of play." (Ibid., p. 76)

277. Ibid., p. 77.
278. Ibid., p. 79.
279. Ibid., p. 81.
280. Ibid., p. 85.
281. Ibid., p. 90.
282. Ibid., p. 91.
283. Ibid., p. 94.
284. Ibid., p. 95.
285. Ibid., pp. 95-96.
287. Ibid.
289. Ibid., pp. 101, 104.
290. Ibid., p. 116.
291. Ibid., p. 102.
292. Ibid., p. 21.
293. Ibid., p. 191. Bain noted that "as a rule, particulars are interesting as well as easy; generals uninteresting and hard." Ibid., pp. 81-82. And he added,

"It would serve nearly all the purposes of the teacher to know the best means of overcoming the repugnance and the abstruseness of general knowledge." (Ibid., p. 82)

294. Ibid., p. 193.
295. Ibid., p. 194.

296. Bain distinguished constructive processes from "literal memory," implied in retentiveness. The constructive processes involve concept formation, but manual as well as intellectual constructiveness are included in Bain's discussion (another example of the parallel between muscular and mental processes in Bain's system.) On the teacher
as a "natural selector" fostering observation and reflection see ibid., p. 217.

297. Ibid., p. 233.
298. Ibid., p. 234.
299. Ibid., p. 230.
300. Ibid., p. 231.
301. Ibid.
302. Ibid., p. 173.
303. Ibid., p. 198.
304. Ibid., pp. 198-201.
305. Ibid., p. 201.
306. Ibid., p. 204.
308. Ibid., pp. 174-75.
309. Ibid., p. 177.
310. Ibid.
311. Ibid., pp. 178-79.
312. Ibid., p. 177.
313. Ibid., p. 182.
314. Ibid., p. 184.
315. Ibid.

316. The child would be harmed if schooling interfered with "the powers needed for growth," or if "the desired impressions demand much greater expenditure than would be necessary at a later time." Ibid., pp. 184-85.

317. Ibid., p. 186.
318. Ibid., pp. 186-88.

319. I have already noted the compatibility of Bain's account with the system of payment-by-results. Interestingly, when he is discussing the teaching of foreign languages (the main competitor to science in the
curriculum) he warns against carrying "memory-stuffing" too far. Ibid., pp. 187-88. For Ward's criticisms see Chapter 10, section entitled "Psychology and Education"

320. Ibid., p. 187.
322. Ibid., p. 390, 393.
323. Ibid., p. 393. Bain wrote:

"The labour of a new language is not to be encountered without a distinct reason. It is never too late to learn any language that we discover ourselves to be in want of. If we need it for information on a particular subject, we can learn it up to that point and no farther. (Ibid.)"

324. Ibid., p. 394.
325. Ibid., p. 392.
326. Ibid.
327. Ibid., p. 395.
329. Ibid., p. 67.
330. Bain wrote that "languages should be learnt only when meant to be used as languages." Education as a Science, p. 394.

331. Ibid., p. 322. Bain pointed out that frequency operates naturally in language and added that the relative frequency of words is not always an indicator of their relative usefulness. Ibid.

332. Ibid.
333. Ibid., p. 434.
334. Ibid.
335. Ibid., p. 435.
336. Ibid., pp. 436-37.
337. Ibid., p. 437.
338. Ibid.
339. ibid., pp. 437-38.
340. ibid., p. 398.
341. ibid., pp. 106-8 (note).
342. ibid., p. 418.
343. ibid., p. 398, 402.
344. ibid., pp. 403-4.
346. ibid., pp. 408-9.
347. ibid., p. 409.
348. ibid.
349. ibid.
350. ibid., p. 410.
351. ibid.
352. ibid.
SUMMARY FOR PART II

ALEXANDER BAIN AND THE
UTILITARIAN-ASSOCIATIONIST TRADITION

Now that we have become acquainted with Bain's views it will be useful to summarize his relationship to the Utilitarian-Associationist tradition. First, let me repeat the four tenets of that tradition. I have argued that the Utilitarian-Associationist program involved (1) a proscription against the postulation of innate mental ideas or powers; (2) the assertion that all knowledge is derived from sense experience; (3) the belief that action was to be accounted for on a hedonistic theory of motivation and (4) the belief that the science of mind provides a sound basis for epistemology, ethics and a program of social reform.

It is clear that Bain was not as doctrinaire as James Mill in following these tenets. For one thing, he rejected as naive the view that the mind is a tabula rasa. He noted that there were great initial differences among individuals with respect to the different mental powers. He also recognized that there were some built-in patterns of movements and, particularly later, acknowledged that inherited instincts underlie behavior. Although this marked a shift away from the views of the elder Mill, Bain only adopted this position when faced with insurmountable difficulties in accounting for particular phenomena. For example, the postulation of primitive motor patterns considerably...
shortened the period required for the acquisition of certain movements. The postulation of a primitive spontaneity shortened the period of trial and error required to acquire control over thoughts and movements, and, in his early account of belief, the period required for the formation of belief or conviction. The appeal to an instinct of gregariousness was only made after attempting various other explanations of sympathy. Moreover, Bain that the postulation of such primitive endowments did not violate his empiricism. Adoption of a Lamarckian view on the inheritance of acquired characteristics enabled him to claim that these abilities were derived from sense experience, although not necessarily the sense experience of the particular individual.

In several additional respects, Bain employed "physiology" to deal with problems in the Utilitarian-Associationist tradition. In each case, Bain's adoption of the "physiological" doctrine served to salvage the empiricist/associationist account of the phenomena. For example, his addition of "feelings of innervation" to the coterie of sensations entering into association and his doctrine of "identical seats for impressions an ideas" buttressed the empiricist epistemology. These same doctrines were also employed in order to dispense with accounts of volitional control of action and will which appealed to the sense of effort as the prototype of free will.

Although Bain did appeal to primitive endowments in his account of the human mind, the endowments identified were always either physiologically based or had their source in inherited experience. For these reasons, I would argue that Bain's views, on the whole, represent
a continuance of the Utilitarian-Associationist tradition. A direct influence can be seen in certain of his views, including his denial of an ego or self, and his detailed account of the experiential origins of conscience.

Bain fundamentally adhered to the utilitarian account of motivation as based upon pleasure and pain. He did admit two exceptions to this principle: spontaneity and ideomotor action. The first of these enabled him to make improvements in the account of will; the second enabled him to provide a clearer account of our control over our thoughts and an account of disinterested action.

Bain also adhered to the tenet that scientific psychology should provide the foundation for social practice and other applied disciplines. On Character was a programmatic work designed to foster the development of an analysis of character that might serve the needs of modern industrial society. In Education as a Science Bain employed psychological principles and utilitarian values in order to arrive at an account of education that might facilitate the work of the schoolmaster. Bain also employed the laws of the mind in the development of his accounts of grammar and rhetoric, works I have not described. Other sources of motivation than the continuance of an intellectual tradition probably played a role here. Bain was interested in selling books and frequently mined new potential markets for his works. His work on education must be regarded as partly a response to the need for works to be used in the training of the increased numbers of teachers.
In the next section of this work, I will be examining criticisms of the assumptions underlying the Utilitarian-Associationist tradition in general and Bain in particular. As we have seen, the Utilitarian-Associationist tradition pinned great hopes on the promise of a science of psychology. By mid-century, when Bain was publishing his works, physiology and specifically sensori-motor physiology was seen as playing an important role in the development of the science of mind. Bain, in common with others in his generation, maintained that the human mind and human action could be the subject of a phenomenalist and deterministic science. In the 1870's non-psychologists, such as John Tyndall and T. H. Huxley, drew some alarming conclusions from this view of mind. They argued that mind had no causal efficacy and that humans are, therefore, nothing but conscious automata. This debate and reactions to it will be presented in Chapter 6.

A more direct attack was made on Bain and the Utilitarian-Associationist tradition in debates on associationism during the 1880's and 1890's which will be discussed in Chapters 7 and 8. Although James Ward was the best known protagonist, I will show that his critique of empiricism and associationism was anticipated by a number of earlier writers. The conscious automata debate and the debates over associationism, taken together, brought into focus the question put by T. H. Green: Can there be a Natural Science of Man?
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## CHAPTER 10: BRITISH PSYCHOLOGY IN THE NINETIES:
### JAMES SULLY AND JAMES WARD

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INTRODUCTION TO PART III

INTELLECTUAL DEBATES

Social and Political Developments

During the last third of the century, social and political developments in Britain took place in the context of shifts in her position as a world power. These social and political changes were accompanied by changes in ideology, belief systems and values; in short, by changes in the intellectual life of the country. During this period several older systems of belief declined in influence and were replaced by newer modes of thought. The adequacy of liberalism and individualism as the basis for social and political philosophy was increasingly called into question. In addition to problems with laissez faire economic policies, it was not clear that liberal individualism was adequate to deal with the realities of political democracy.

For a variety of reasons, the role of religion was declining during this period, although the need for moral discipline was still acutely felt. The problem of establishing a non-theological basis for morality was perceived as urgent by many intellectuals during this period. At the same time science, and its adjunct technology, assumed a new importance in British life. Scientific optimism succeeded the older liberal belief in progress and seemed to promise a new progressive approach to the problems of life. However, if the British were to
approach the millenium, improvements in scientific research must be made. It was German scientific education that provided the model for reform of British scientific education.

Not everyone was pleased with the encroachment of science upon cherished beliefs. Many felt that a new view of man and a new view of society was needed as the basis for social and political philosophy. Under the influence of German idealist thought new directions were taken in philosophy to deal with these problems. During the last third of the century, older models of thought were being challenged, both by new modes of thought and by newer social and political principles.

Strains on Liberalism and Individualism

By 1870 many individuals were beginning to doubt the ability of liberal policies to bring about the utopia once envisioned and, furthermore, to doubt the very soundness of liberal tenets. Political and economic laissez-faire no longer seemed to be viable policies. As we have seen, government intervention was deemed necessary to deal with pressing social problems. Such intervention was initially undertaken on a piecemeal basis, with legislation which respected the principle of localism. However, reports issued by various Royal Commissions, as well as studies conducted privately, made it abundantly clear that social problems were not being adequately dealt with through local initiative. Increasingly, a new form of compulsory legislation was enacted. The Sanitary Act (1866), the Public Health Act (1875), a series of Education Acts (1870, 1876, 1880) and the Workshop and Factory Acts (1878) were examples of the legislation which consolidated prior
piecemeal reforms./2/ Such legislation activated the "sinewy, efficient" organism of the state and this activity required some philosophical justification that it could not honestly draw from liberalism./3/ 

Britain's free trade policy, the embodiment of economic laissez faire, was not faring well in the more competitive atmosphere of the late nineteenth century. A series of agricultural depressions resulted when cheap American wheat flooded the marketplace./4/ The resulting decline in British agriculture reshaped the social structure of the society. During the 1880's commercial wealth surpassed landed wealth, signalling the economic triumph of the middle classes./5/ 

Britain's preeminence in world trade markets was also threatened by the rise of the United States and Germany as new industrial powers. By 1880, American industrial production outstripped the British. By 1896, both Germany and the U.S. were producing more steel./6/ During the late 1880's it had become clear that free trade policies were hindering Britain's position in a world economy increasingly dominated by nations with protectionist trade policies./7/ Furthermore, British industry itself belied liberal principles. As industries matured, economies of scale were created, eliminating the free competition that purportedly was the basis of the system./8/ 

Liberalism and individualism faced challenges from other sources. The Reform Bills of 1867 and 1884 had committed Britain to democracy./9/ But liberal political philosophy presumed that individuals were rational and therefore capable of pursuing their
enlightened self-interest. As the extension of the franchise brought different kinds of individuals into the political sphere, many began to question this assumption.

Faith in the rationality, or potential rationality, of man was being eroded from other quarters. The environmentalist accounts of the formation of character that had been favored by liberals were being replaced by accounts that emphasized innate and irrational components of behavior. Anthropological expeditions were discovering that there were wide differences between civilized man and savages. On the other hand, Darwinian thought emphasized the continuity between man and beasts. Combined, these ideas yielded a concept of a continuum of intellectual and moral development upon which different segments of society could be ordered. It seemed no longer possible to rest social and political philosophy on such a questionable tenet as the rationality of man.

In response to these shifts, revisions were made to economic theory and new social and political movements arose. W. S. Jevons and Alfred Marshall revised economic theory by focusing upon the distribution of wealth rather than its production and by sanctioning state intervention in economic matters. The origins of the trade union movement and the Labour party can be traced to this period. It is clear that many people perceived the need to form collectivist organizations to represent their interests.

Middle class reformers turned to socialist programs, such as that developed by the Fabian Society. The Fabians, like Bentham, believed that the scientific study of narrowly defined social problems would
suggest the best course of action to be taken in each case.\[13\] However, unlike Bentham and the Mills, they had a low regard for individualism and completely rejected laissez faire policies. The Fabians regarded society as a social organism and viewed individual behavior as a function of the social system.\[14\]

Many other intellectual movements during this period fostered this new view of organic society: of society as something over and above the aggregate of individuals comprising it. Comtean positivism, Spencer's doctrine of social evolution, socialist thought and many incipient nationalist movements all contributed to the spread of this new idea that directly challenged liberal thought.\[15\]

The declining influence of liberal principles was the result of both a new view of society and a new view of man. But neither liberalism nor individualism were completely eliminated during this period. Liberal beliefs and values remained, especially moral individualism or the doctrine of individual moral responsibility. The task of incorporating such values in programs of social reform was one that faced all late nineteenth century thinkers.

Shifts in Religious Belief

Historians such as Elie Halévy and Noel Annan have ably demonstrated the role played by religion in shaping the consciousness of Victorians, especially members of dissenting sects such as the Evangelicals.\[16\] However, for a number of reasons, formal religion played a much smaller role in intellectual life following 1860. In the
first place, religious controversy had declined as denominational sects multiplied and gained legitimacy. Even the Church of England became more liberal after 1860, due to the efforts of the Broadchurchmen at Oxford. Religious tolerance succeeded religious zealously.

At the same time, those sects whose doctrines depended upon a literal interpretation of the Bible, had been dealt severe blows. Biblical criticism, spurned by David Friedrich Strauss's Das Leben Jesus (1835), demonstrated the weakness of historical evidence for the biblical account of Jesus's life. Scientific evidence drawn from the fields of geology and biology, and synthesized by Darwin, contradicted the biblical account of creation.

Individuals such as Leslie Stephen and Henry Sidgwick became agnostics in the face of such evidence. But their Evangelical inheritance forced upon them a pressing problem: Why should men be good when there are no reasons for fearing an afterlife? This problem provided the impetus for one of the central tasks facing late nineteenth century intellectuals: the creation of a rational foundation for ethics.

Increasing Importance of Science

During the late eighteenth and early nineteenth century great advances were made in physical sciences including physical astronomy, terrestrial physics and chemistry. And in the first half of the nineteenth century biological sciences, employing the methods of the physical sciences, also made great advances. Scientific inquiry,
based primarily on the Newtonian model, was accorded a new prestige as the methods of physical science increasingly proved their value in the biological sciences./22/

The progress of science, viewed at a distance, inspired the belief that individual and social human life was no exception to the law of causation and, therefore, that natural laws of human behavior exist. This belief became one of the assumptions of the Utilitarian-Associationist tradition. Its impact is seen most clearly in John Stuart Mill's System of Logic (1843), a work that dominated British intellectual life between 1850 and 1870./23/ Mill believed that through systematic inquiry we can arrive at an understanding of these natural laws and that this understanding would help ensure moral and material progress./24/

Mill's work was inspired, in part, by the writings of Auguste Comte. Mill, however, rejected Comte's claim that psychology could not be an independent science, and asserted that introspection was a valid method of investigation./25/ Comte's influence was widely felt in Britain during the 1850's and 1860's. Much of his appeal in Britain no doubt stemmed from the fact that, in addition to outlining a comprehensive doctrine concerning the relation of the sciences, he propounded a scientific ethics—the religion of humanity./26/

Mill, Comte and Herbert Spencer shared a set of "positivistic" methodological beliefs. Most important among these beliefs were the views (1) that the physical sciences represent the ideal form of knowledge and (2) that metaphysics must be avoided at all
The hope was that moral sciences might gain some of prestige of the physical sciences as well as beginning to make the kind of progress observed in those sciences.

After 1860, new scientific discoveries and new scientific programs extended these values into new domains. Evolutionary theory strengthened the position of those maintaining that there were continuities among man, life and physical nature. However, as the implications of such views were drawn out more clearly, reactions against this program began to appear. Although proponents of these newer views still shared the hope that scientific progress would be accompanied by social progress, the deterministic and reductionistic approach they advocated for the study of man seemed to threaten the very dimension of man on which social progress depended—the moral dimension.

To fully understand the force of these views and the reaction to them, it is important to recognize the popularity of science among non-scientists. By the 1870’s popular lectures on science were widespread. Numerous articles on the relation of science to religion and social problems could be found in the popular press. Works such as W. Winwood Reade’s Martyrdom of Man (1872) and Draper’s History of the Conflict between Religion and Science (1873) proclaimed science to be the key to the future.

The scientific optimism that was widespread in the 1870’s had been, to some degree, cultivated by spokesmen for British science. The British Association for the Advancement of Science (BAAS) founded in
1831, had as its goals the promotion of scientific inquiry and the dissemination of scientific knowledge./32/ Local scientific societies could affiliate themselves with the BAAS, so as to reduce parochialism in scientific matters. Increasing numbers of such societies took this step, with the greatest spurt of growth occurring between 1851 and 1880./33/

The weekly journal *Nature*, founded in 1869, facilitated the promotion and popularization of science. The stated objective of the new journal was "to place before the general public the grand results of Scientific Work and Scientific Discovery; and to urge the claims of Science to a more general recognition in Education and Daily Life." Under the editorial direction of J. Norman Lockyer these goals were assiduously pursued./34/

The prestige and popularity of science, combined with a general feeling of scientific optimism, created a situation fraught with ambiguities during the final third of the century. The prestige of science had not diminished, and the chief hope of many was to establish their particular form of inquiry on a scientific basis. There was still a widespread feeling that the application of scientific methods to social problems might lead to social progress. As religious enthusiasm subsided and faith in liberalism declined, scientific optimism appeared to take up some of the slack. At the same time, however, increasing numbers of individuals were concluding that there were limits to the guidance science could offer and that science violated these limits when it discoursed on man, especially on man's spiritual or moral nature./35/
"Scientific" proposals, such as Tyndall's recommendation for a scientific investigation of the efficacy of prayer and Huxley's claim that men are but conscious automata, appeared to many to push scientific credibility to its limits.\(^{36}\) As we will see in Chapter 6, the reaction to the conscious automata thesis involved an examination of the proper limits of science. Many concluded that science could shed little light on fundamental aspects of human experience, including religious, ethical and aesthetic experience and that scientists must acknowledge and respect these limits.\(^{37}\)

New Social and Political Philosophies

The declining influence of liberal politics and religious thought combined with the critique of science led some individuals to conclude that a new philosophical direction was needed. In 1874, T. H. Green called for the country to shift from "the anachronistic systems prevalent among us to the study of Kant and Hegel."\(^{38}\) During the final quarter of the century, criticism of empiricism and positivism and adoption of an alternative idealist metaphysics became widespread.\(^{39}\)

T. H. Green employed idealism as the basis of a new organic social and political philosophy. The main thrust of his critique of empiricism lay in his rejection of atomism. He asserted that the efforts of the empiricists to piece together reality from discrete sensations were misplaced. Experience, he argued, has an inherent relatedness: we need not concern ourselves with the mechanics of piecing it together.\(^{40}\) Analogously, we as social beings are related to one another by bonds of sympathy and empathy. Not only empiricism, but the
entire liberal edifice was under attack in Green's critique. T. H. Green's philosophy led to a politics of social responsibility that differed in many respects from liberal politics./41/

Green, although not a full fledged disciple of Hegel, espoused doctrines closer to Hegel's views than to Kant's./42/ The idealist revival in England also took other forms. The work of the German neo-Kantians, Friedrich Lange and Hermann Lotze, infected many British intellectuals with more moderate idealist views./43/ Lange's work provided the framework within which English empiricism was transformed into scientific naturalism by Tyndall, Huxley and others./44/ Lotze's influence was broader and is less easy to trace, as no movement grew from the adoption of his ideas. His doctrines were influential among the Oxford group following Green's death, and he exerted a great influence on James Ward./45/ The impact of both forms of idealism will be seen clearly in the debates reviewed in this section of my dissertation.

Social Changes and Educational Reform

The social and political conditions that led to the rise of the middle class created new occupations and expanded the ranks of older occupations. Accompanying the rise in middle class occupations was the rise of an ethos of professionalism with regard to work./46/ Despite great diversity, it is possible to identify characteristics common to such occupations and their development into professions./47/
One necessary condition is that the occupation involve a specialized skill acquired through training and in general demand. Some awareness of a distinctive identity on the part of practitioners is necessary. This in turn leads to the establishment of formalized training schemes and associations, which oversee the training and certify the competence of practitioners in the field. These associations, along with specialized periodicals, also serve to facilitate communication among practitioners. Rather frequently, a closed system of communication develops, making communication with other groups difficult./48/

Increased professionalism was to have a significant impact on higher education in Britain, more particularly since the tradition established at Oxford and Cambridge was avowedly non-utilitarian. In some cases, the need for specialized training led directly to the establishment of professional or semi-professional programs./49/ More commonly, the need for such specialized training led to the establishment of new colleges which attracted students precisely because they provided such training. During this period several new colleges of science were established, including Newcastle (1871), Leeds (1874), Sheffield (1876), Birmingham (1880) and Liverpool (1881). Wealthy industrialists sometimes financed these institutions in their early stages, believing that a scientifically trained workforce might enable Britain to recover industrial preeminence./50/ It was not just in scientific fields that the ethos of professionalism was having its impact. Teachers began to organize and to lobby on behalf of their interests. During the 1880's and 1890's teachers training institutes
were established that were attached to colleges and universities. Gradually, these institutions came to develop a variety of specialized training programs instead of, or in addition to, their more general educational programs.

This reform, particularly with respect to scientific training, had an impact on the character of British higher education. Since many of these spearheading these reforms had received their scientific training on the continent, it was the continental, and particularly the German model of education that was adopted.

The contrast between the German system of higher education and the classically oriented, gentleman producing, college-based education of Cambridge and Oxford was very great. The character of the German universities had been shaped by the dominance of classical and historical subjects; subjects considered scientific in their own right. In most of the German states, training in such disciplines involved an intensive course of advanced specialized work designed to equip the individual for conducting original research in the future. Scientific training was regarded as having value for the training of both intellect and character. But the university did not exist solely to transmit knowledge. It was within the universities that the task of creating new knowledge was to be undertaken.

The realization of this goal was facilitated by government support of large research labs. However, such support was accompanied by greater state control; for instance in Prussia, professorial appointments were controlled by the state. Advancement in these
institutions was dependent upon research productivity. By the 1840's one's disciplinary standing, rather than one's standing within an individual institution, served as the basis for promotion./57/.

The German model of higher education was repeatedly described in books and journals during this period./58/ It had a direct impact upon the recommendations made in the third report of the Devonshire Commission the report pertaining to scientific education in universities. The commissioners recommended the establishment of laboratories which would provide opportunities for original research among the professoriate and for the training of future generations of scientific workers. They also recommended the establishment of D. Sc. degree programs requiring "a dissertation embodying an account of some original research of his own."/59/ Although the Devonshire Commission's recommendation pertained specifically to Cambridge and Oxford, the growth of scientific education was strongest at the civic universities. Cambridge and Oxford, while slow to respond, did institute some changes./60/

Concomitant with such changes was the development of more specialized forms of knowledge. Older disciplines branched into specialized areas and new disciplines sprouted up. The process by which branches of knowledge became "disciplinized" in this period roughly parallels the process of professionalization taking place within the larger society. Bruce Kuklick has employed the professionalization paradigm within an academic setting, in examining the development of the discipline of philosophy at Harvard./61/ He identified five stages in
the development of a full-fledged discipline:

(1) Disappearance of Amateurism

(2) Divestment of related, but subsidiary branches of knowledge.

(3) Emergence of a distinctive branch of knowledge that we can recognise as a discipline, because it is distinguished by special techniques and by an accepted set of doctrines.

(4) The growth of departmentalism within the university.

(5) The establishment of an "apprenticeship" for those seeking to become practitioners in the discipline./62/

While I think Kuklick's stages provide valuable guidelines for investigating discipline formation within universities, I feel some qualifications must be made. First of all, his professionalization criteria are primarily sociological rather than intellectual. I feel that any investigation of the formation of an intellectual discipline must be preceded by an analysis of the problems that are central to the field, and that these ought to be intellectual problems./63/ Second, certain of his criteria, e.g. the growth of departmentalism, are more applicable to American than to British universities./64/ Finally, since I am examining a period in which psychology was, at most, an incipient discipline, I feel more emphasis needs to be placed upon extra-university organizations: the societies, associations and periodicals that provided forums for those interested in discussing problems posed within the field of psychology./65/
The most important of the forums within which problems bearing on psychology were discussed during the 1870's was the Metaphysical Society, founded in 1866 by James Knowles. Knowles was an architect and an intellectual, who was friendly with some of the greatest intellectuals of his generation. He envisioned the Metaphysical Society as a forum where questions of morality and theology could be discussed "after the manner and with the freedom of an ordinary scientific society."/67/

Members of the society included many of the leading religious, literary, scientific and philosophical figures of the period. A. P. Stanley and W. C. Magee represented the Church of England, H. E. Manning, J. D. Dalgairns and W. G. Ward represented the Catholic Church and the Unitarians were represented by James Martineau. Tennyson, Ruskin, Bagehot and Leslie Stephen represented the literary world, while Carpenter, Huxley and Tyndall represented the scientific. Philosophy and psychology were represented by Henry Sidgwick, Shadworth Hodgson and George Croom Robertson. John Stuart Mill was invited to join by W.G. Ward who (as paraphrased by A. W. Brown in The Metaphysical Society) wrote to Mill that certain theists, fearing his [Mill's] views and those of his disciple Bain, wish direct and personal discussion, fearing that their [the theists'] point of view is unfairly treated by the materialists. /71/

Mill and Bain, along with Herbert Spencer, declined the invitation to
join. /72/ However, aside from these figures, most of the leading intellectuals of the period participated. The stated goal of the society was "to collect, arrange and diffuse knowledge (whether objective or subjective) of mental and moral phenomena." /73/ In addition, the society sought to collect trustworthy observations upon such subjects as: Remarkable mental and moral phenomena—normal or abnormal, The relations of brain and mind . . . . The faculties of the lower animals, &c., &c., &c. /74/ and to receive and . . . discuss . . . oral or written communications made to it on such subjects as: The comparison of the different theories respecting the ultimate grounds of belief in the objective and moral sciences. The logic of the sciences whether physical or social; The immortality and personal identity of the soul. The existence and personality of God. The nature of conscience. The material hypothesis. /75/

Apparently no "trustworthy observations" were ever collected by the Society, but there was ample discussion of the subjects listed above. Papers presented included the following:

November 8, 1870: T. H. Huxley: "Has a Frog a Soul; and of What Nature is that Soul, supposing it to Exist."

April 9, 1872: Mark Pattison: "The Arguments for a Future Life."

February 11, 1873: John Ruskin: "The Nature and Authority of Miracle."

May 13, 1873: G. Croom Robertson: "The Action of So-called Motives."

June 9, 1874: W. K. Clifford: "On the Nature of Things in
Themselves"

November 17, 1874: W. B. Carpenter: "On the Doctrine of Human Automatism"

March 9, 1875: W. K Clifford: "The Scientific Basis of Morals."

November 14, 1876: G. Croom Robertson: "How do we Come by Our Knowledge."

December 12, 1876: J. Fitzjames Stephen: "The Effect of a Decline of Religious Belief on Morality."

April 17, 1877: James Martineau: "The Supposed Conflict between Efficient and Final Causation."


December 17, 1878: R. H. Hutton: "Is 'Lapsed Intelligence' a Probable Origin for Complex Animal Instincts?"


This sample of the papers presented at the Metaphysical Society makes it clear that the central concerns of the period, stemming from the conflicts between religion/morality and science, were discussed and that psychological matters were involved in most of these discussions. The papers also represented the full spectrum of opinion on these issues. However, there is no evidence that anyone’s opinions were changed as a result of these discussions. Henry Sidgwick had a realistic view of the Society when he wrote that

the aim of the Society was, by frank and close debate and unreserved communication of dissent and objection to attain—not agreement, which was of course beyond hope— but a diminution of mutual misunderstanding./77/

However successful they were in reducing misunderstanding, fundamental disagreements continued to exist. The Society came to an end in 1880, perhaps because, as Knowles pointed out, "after twelve
years of debating, there seemed little to be said which had not already been repeated more than once. /78/ Still the Society seemed to accomplish several goals. By providing a forum in which diverse opinions could be aired (and participants could anticipate rebuttals) individuals were encouraged to take a stand on some of the central issues of the period. Many of the papers read at the Society were subsequently published in periodicals so the educated public were kept in touch with these debates as well. /79/ It may also have been the case that discussions in the society led certain individuals, e.g., Huxley, to advocate somewhat more extreme and provocative views than they might otherwise have done. Discussions in the Metaphysical Society may have been one of the sources of the automaton thesis I will discuss in Chapter 6. /80/

The Aristotelian Society for the Systematic Study of Philosophy was founded in 1879 by Shadworth Hodgson. The Society met fortnightly "for the purpose of mutual assistance and encouragement in the prosecution of philosophical enquiry." /81/ The Society was at the same time both more specialized, and less exclusive than the Metaphysical Society had been. Young, unknown intellectuals just beginning their philosophical careers joined with older amateur philosophers to discuss issues in a way that had not been possible in the Metaphysical Society. /82/

Meetings included discussion of history of philosophy as well as philosophical methods and problems. Early meetings centered on historical studies. Works examined in the first four sessions of the society were:
1882-1883: Kant's Critique of Pure Reason
1884-1885: Schopenhauer's World as Will and Idea
1885-1886: Kant's Grundlegung der Metaphysik der Sitten and Kritik der Praktischen Vernunft

After the fourth session, historical discussions no longer centered on a single work. Instead, individuals presented papers on such works or on other philosophical problems and discussion focussed on these papers. Psychological matters tended to dominate the topics discussed. Alexander Bain, George Croom Robertson, William James, James McKeen Cattell and G. F. Stout were among the prominent psychologists who participated in the Society.

During the sixth session (1887-1888) the Society began to devote several evenings to more extended discussion of selected topics. In this and following sessions, members discussed topics including: "Is Mind Synonymous with Consciousness?"; "The Distinction between Will and Desire"; "What takes Place in Voluntary Action"; "Is the Distinction of Feeling, Cognition and Conation valid as the Ultimate Distinction of the Mental Functions?"; and "Does our Knowledge of the Perception of the Ego Admit of being Analysed?" During the 1880's the Aristotelian Society was the chief forum for the discussion of psychological matters.

The Society for Psychical Research, founded in 1882 by Sidgwick, F. W. H. Myers and others, investigated questions of an entirely different nature. After mid-century there had been an increase in interest in para-normal functioning as witnessed in the work on
mesmerism by Elliotson and Braid and the rise of a Spiritualist
movement.

Elliotson and Braid had attempted to place the study of
mesmerism on a scientific basis. Given the prestige of science it may
have seemed logical to attempt the same for similar subjects. The
Society for Psychical Research was established to investigate "that
large group of debatable phenomena designated by such terms as mesmeric,
psychical and spiritualistic." The stated aim of Society was to

approach these various problems without prejudice or
prepossession of any kind ... in the same spirit of exact and
impassioned enquiry which has enabled science to solve so many
problems, once not less obscure nor less hotly debated.

The founders of this society were clearly infected with the spirit of
scientific optimism. As A. W. Brown wrote:

it remains curious and revealing that so many men of science
turned to 'psychical research' as a means of ascertaining the
truth of supernaturalism by the methods, hoping in this way to
justify both their science and their faith, their knowledge and
their ignorance.

Clearly they were motivated by very deep concerns. F. W. H. Meyers,
reporting a conversation he had held with Sidgwick, voiced these
corns:

I asked him, almost with trembling, whether he thought that when
Tradition, Intuition, Metaphysic had failed to solve the riddle
of the Universe, there was still a chance that from any actual
observable phenomena--ghosts, spirits, whatsoever there might be--some valid knowledge might be drawn as to a World
Unseen.

While the desire to solve the "riddle of the Universe" may have drawn
these individuals to the study of psychical phenomena, their actual
investigations focused upon more mundane aspects of extraordinary
phenomena such as exposing mediums, gathering experimental and
anecdotal evidence on telepathy, conducting a "census of
hallucinations," and investigating apparitions of the dead./91/

Several writers have suggested that Sidgwick's interest in the Society was based upon his ethical concerns: i.e., that he wished to be able to demonstrate that the soul was immortal. If so, he must have been disappointed for the Society in its early stages gathered little material relevant to this question./92/ In Sidgwick's own view, other results were of greater interest particularly "the fact of the transference of ideas and feelings from one mind to another, otherwise than through the recognized channels of sense."/93/ Of course, this area of investigation also has ethical bearings, since the "intuition" of another's thoughts and feelings provides a basis for the sympathy and empathy that play a role in disinterested action.

Unlike the Metaphysical Society, the Psychical Research Society and the Aristotelian Society have survived to the present day. In Part IV I will look at the activities of both these societies during the nineties. There I will show that it was Sidgwick's interest in psychical research that led to the International Congress of Psychology being held in London in 1892.

Journals

During this period there was a spurt of growth in periodical literature. New periodicals such as the Contemporary Review, the Fortnightly Review and the Nineteenth Century were established. They differed from the older periodicals in abolishing anonymous articles, a move which helped stimulate more debate and discussion./94/ At the same
time, more specialized "professional" journals were appearing.

The Journal of Mental Science had been around for some time and its professional character was a factor ensuring its success. The journal's main audience was physicians in asylums for the insane and it contained a great deal of practical information for individuals in such positions. News of their primary professional organization, the Medico-Psychological Society was also presented in the journal, along with neurological and psychological material. Most of the latter dealt specifically with the problems of insanity, although works of a more general character were regularly reviewed in the Journal. From 1862-1878 Henry Maudsley served as editor of the Journal; he was succeeded by D. Hake Tuke.

During this period Mind was founded as a journal of psychology and philosophy. Mind got off to a strong start—1200 volumes were sold in the first year—but sales dropped over the next five years. In 1882 Bain wrote to Robertson that he did not know whether sales were destined to go below the 700 mark but added,

I am not in the least inclined to despair of our undertaking, nor to deviate from the tract . . . which has made the Journal a power in the metaphysical world.

However, he apparently felt some changes were necessary, for he travelled to Oxford to confer with the Hegelians about a possible joint venture. The arrangements fell through and Mind continued, independent of the Hegelians, although quite willing to publish their work.
In 1883, Robertson attempted to evaluate the past six years of the journal's existence by asking "How far does experience seem to have justified the idea of founding a philosophical journal in England and making it in the first place psychological?" In answering this question he noted, with regret, that the Journal has not yet succeeded in fostering—if it might have been expected to foster—such habits of specialised investigation in psychology as are characteristic of the workers in other departments of science. There is little sign in our midst of the disposition (or, perhaps, the ability) to work on such special lines of psychological research as other countries give evidence of.\textsuperscript{99}

Instead, Robertson noted, the English have tended to restrict themselves to their traditional approach of enunciating general principles which "while directly psychological in their import have been thought of rather for the philosophical application to which they appeared to lend themselves."\textsuperscript{100} And he added at the present time, it is rather the reconsideration of the psychological point of view, whether in reference to philosophy or in reference to the range of mental inquiry as newly enlarged by the biological principle of evolution; or it is the revision of the whole psychological field with a view to including and ordering the great mass of new facts that have been brought to light, chiefly from the physiological side; or, again, it is the application (too long delayed) of psychological principles to the practical work of education—it is these various tasks that are now engaging the attention of those who set store by the tradition of "English Psychology."\textsuperscript{101}

On the philosophical side, he wrote, Mind had fulfilled its aim of informing English readers of developments in foreign-speaking countries and had provided an impartial account "of the manifold currents of thought running among the English-Speaking race here and in America."\textsuperscript{102} However, he added that it became clear from the beginning that the number of English thinkers, at the present day, who cared to have a clearly defined psychological basis was very small: not that any can be
without their psychology, but that most are of opinion either that it supplies no basis for philosophical consideration or that they can get on very well without thought of it./103/

As we will see, *Mind*, in certain respects, did not do any better in the next seven years of its existence. Although the number of experimental investigations published in *Mind* increased, they were largely contributed by foreign authors./104/ During the 1880's there were no signs of any widespread development of "habits of specialized investigation in psychology" among British psychologists.

In 1878, *Brain: A Journal of Neurology* appeared under the joint editorship of J. C. Bucknill, J. Crichton-Browne, D. Ferrier and J. Hughlings Jackson./105/ In 1885, de Watteville became editor, a position he held until 1900. In 1886, the Neurological Society was founded and *Brain* became the journal of the Society. Although psychological work appeared in *Brain* it largely took the form of reviews of recent psychological works./106/

During this period, the periodical literature began the process of segmentation and specialisation that would lead to the establishment of professional journals. In this process the incipient disciplines of mental pathology and mental physiology were several steps ahead of the field of mental philosophy.
Since 1860 when Bain's new curriculum first went into effect all B.A. candidates at the University of London were required to take examinations in Logic and Psychology. In 1881 the name of this examination was changed to Mental and Moral Science which included the topics psychology, logic and ethics./107/ More substantive revisions in Bain's scheme were hinted at when, in 1879, the Senate voted to amend the syllabus to read:

The questions in Mental and Moral Science will have no special reference to the writings of any one author or school of authors. In matters of opinion, answers will be judged according to their accuracy of thought and expression./108/

In 1882, Sully and Ward, who were serving terms as Examiners in Mental and Moral Science, presented a revised curriculum to the Senate./109/ Bain described these revisions as "alarming" and urged that the Senate postpone action until he could confer with others. He wrote to Robertson:

I cannot tell how far the unsettling may go: but I passed through the previous revolution, and this is a greater, inasmuch as it does not, in Psychology, keep known lines./110/

The adopted revisions to the curriculum certainly dispensed with the lines that up to that time, had been known at the University of London. Rather than simply listing the topics covered in Senses and Intellect and Emotions and Will, a much more detailed and varied list of topics was presented. New topics listed under the psychology portion of the examination included: "Consciousness, self-consciousness, Attention"; "Abstraction and Generalization"; "Conception, Judgment and
Reasoning, Language as expressive of thought, Intellectual Construction"; "Motives, Deliberation, Choice, Freedom of Will"; "Self and External World"/111/ Although any of these topics could have been discussed within the Utilitarian-Associationist framework, the caveat raised the possibility that different perspectives on these matters would be entertained.

Revisions were made to other degree programs involving the study of psychology. From 1881 on, candidates for the D.Sc. degree were required to "offer evidence of original work or research in support of their qualifications for the Doctorate."/112/ In 1885, upon the request of the faculty of medicine, the Senate voted to withdraw logic and psychology from the syllabus of the M.D. and M.S. examination./113/ An examination in Mental Physiology "especially in its relations to Mental Disorders" was substituted. D. Hake Tuke who, together with Bucknill, was the author of Manual of Psychological Medicine, was appointed examiner./114/

During the 1880's the structure of the M.A. Branch III examination remained basically the same. Candidates wrote papers on logic and psychology, moral and political philosophy, history of philosophy and political economy as well as two essays. During this period students were given an increasingly wide choice of topics for their essay questions in history of philosophy, although these topics still reflected the psychological bias of the Utilitarian-Associationist tradition:

1880: Theories of Happiness./115/
1882: A critical examination of the leading philosophic theories concerning the connexion between mind and body.

or

The different psychological conceptions of will involved in modern systems of philosophy./116/

1884: L'homme machine?

or

Associationism: its history and worth as a philosophical theory of knowledge./117/

1885: Memory and Imagination: their common elements and their characteristic differences; their relation to feeling, thought and belief.

or

Desire; distinguished from appetite and from volition; its relation to feelings present and prospective; analysis of the pleasures of pursuit; the hedonistic paradox; distinction between extra-regarding springs of action and rational action./118/

1886: The Perception of Space

or

A Critical comparison of Realism and Idealism as 'Philosophical Systems./119/

1888: Heredity from the point of view of psychology.

or

Psychological theories of the origin of speech./120/

As we will see, these topics represented some of the central issues psychologists were dealing with during this period.

During the 1880's the hegemony of the University of London was challenged when Manchester College became consolidated as an independent degree granting body known as Victoria University./121/ Like the University of London, Victoria University gave examinations which led to degrees. Unlike the University of London it combined teaching and degree granting functions. And unlike the University of London (and Cambridge and Oxford), students could earn degrees without taking examinations in Latin and Greek./122/
The competition led people to take more serious steps toward the reform of the University of London. In 1884 the Association for the Promotion of a Teaching University for London was founded. In 1887 University College and Kings College proposed the establishment of an independent body to be known as Albert University. A Royal Commission under Lord Selborne was established in 1888, but they concluded that the scheme required further study. Within the University of London a proposal for a teaching university was defeated by the members of Convocation. In 1892 a second Royal Commission, the Gresham Commission was appointed. The work of this commission will be described in introduction to Part IV.

University College

Robertson continued to hold the chair at University College although ill health sometimes made it necessary to appoint other individuals to take over his lectures. From all reports Robertson's classes were well attended and appreciated by his students. However, Robertson was not entirely pleased with the situation. He noted that the regulations of the University of London hindered the study of philosophy and that many of the brighter students were turning to the study of mathematics. It is clear that they were also turning to other sources of instruction. From 1877 until 1880, 63% of the honours candidates came from University College. For the period from 1881-1884 the figure dropped to 59% and from 1885-1888 to below 13%.
Cambridge

Henry Sidgwick was the figure behind most of the reforms taking place at Cambridge during this period. In 1879 he proposed a new two part scheme for the Moral Sciences tripos that came into effect in 1883. The tripos was divided into two parts: one general and elementary, the second more detailed and advanced. The subjects included in the tripos were still logic and methodology, political economy, psychology, metaphysics and moral and political philosophy. The first part of the exam lasted three days and included one paper on each of the subjects plus a further paper containing general philosophical questions./130/

The psychology syllabus was fuller and more diversified than that in London. It included such topics as: "activity and passivity of mind"; "intuition of things"; "interaction of impressions and images"; "influence of society upon the individual and psychological theories of the categories"; "higher sources of feeling: aesthetic, intellectual, social, and moral"; "conflict of motives, deliberation, self control."/131/ Although the London curriculum had become more diversified, it still lagged far behind the Cambridge curriculum in what was included. Books recommended at Cambridge included Bain's Handbook of Mental Science; Hamilton's Lectures on Metaphysics; Spencer's Principles of Psychology (omitting the metaphysical portions in Part V. and VII.); Taine's De l'Intelligence; Carpenter's Mental Physiology and Calderwood's Relation of Mind and Brain./132/
Part II of the tripos, the advanced portion of the exam, took place during the following three days. Subjects on this portion of the exam were divided into historical and theoretical areas with each covering three subjects. Students were required to write papers in two of these six areas. The historical subjects included history of ancient philosophy, history of modern metaphysical philosophy, and history of modern ethical and political philosophy. The theoretical subjects were advanced psychology and psychophysics, advanced logic and methodology and advanced political economy./133/ The advanced psychology and psychophysics required, first of all, an advanced treatment of the subjects on the earlier examination. In addition, a special knowledge was required of the physiology of the senses and the central nervous system; of "experimental investigations into the intensity and duration of psychical states"; and "of such facts of mental pathology as are of psychological interest." Finally, the examination was to include questions "relating to the philosophic treatment of the relation of Body and Mind as regards both the method and the general theory of psychology."/134/

During the 1880's it became clear there was need for further reform. Despite the fact that women were now admitted to the examination, only about 8 students per year took the examination between 1880 and 1889./135/ Several of these students were ones who later made significant contributions to the moral sciences, including Alexander Shand, W. S. Sorley, G. F. Stout, W. E. Johnson, McTaggart. Nevertheless it was clear that the Moral Sciences Tripos was losing, rather than gaining ground and reform of the examination structure was
once more seen as the solution./136/

Revisions to the tripos were discussed during 1888 and 1889. The revised tripos came into full effect in 1891./137/ The new scheme relieved some of the pressure on students by spreading out the examinations over two years. Students were now only required to write papers in one, or at most two, of the subjects in Part II. Furthermore they could study a broader range of subjects by taking Part I of the Moral Sciences tripos and Part II of some other tripos./138/

In 1883 Sidgwick became Professor of Moral Philosophy at Cambridge, a position which gave him greater bargaining power vis-à-vis the moral sciences. During the 1880's, the Board of Moral Science Studies made continued requests for increased staff. In 1883 they requested the establishment of University Lectureships in (1) either psychology or logic and (2) advanced political economy./139/ Later that year this request was narrowed to a Reader in advanced political economy./140/ In the same year J. N. Keynes was appointed to a University Lectureship in Moral Science./141/

Other developments were taking place in psychology. James Ward and G. F. Stout delivered courses of lectures in psychology and advanced psychology during this period./142/ A special course of lectures on psychophysics was given by James Mc Keen Cattell during the fall of 1888 and an informal laboratory was set up under his direction./143/ In October 1886, John Venn and James Ward made a request for monies for equipment for psychophysical research./144/ Their request outlined the types of research planned including:
(i) Experiments connected with Weber's Law.

(ii) Experiments to ascertain more exactly the constituents of sense-perception under various circumstances.

(iii) Experiments to ascertain the time occupied by the simpler mental processes.\(^{145}\)

Venn and Ward elaborated upon this proposed program of research and in support of the proposal pointed out that "recently a Psychophysical Laboratory has been founded in the Johns Hopkins University, Baltimore and a number of papers published."\(^{146}\) The proposal was discussed and resoundingly defeated by the General Board of Studies. The proposal was submitted again in 1888, but it was not until 1891 that some funds were provided by the university for the purchase of psychophysical apparatus.\(^{147}\)

In the mid-1880's the Board of Moral Sciences adopted standards for the awarding of the D.Sc. degree. Following the German model which had been adopted in the natural sciences, they recommended that one factor to be considered was "evidence of scientific activity on the part of the candidate and . . . the prospect of such activity being permanent." John Venn (Sc.D., 1884) and James Ward (D.Sc., 1887) were the first recipients of this degree.\(^{148}\)

Cambridge was still ahead in providing a broad perspective in psychology, one far less doctrinaire than that provided by London. By the late 1880's, there were some early signs of a process of segmentation—the request for funds for psychophysical research, the new specialization introduced into the moral sciences tripos—that would lead to the establishment of distinct disciplines among the moral
Teacher's Training

The 1880's were a period in which new directions for teachers training were established, due to the efforts of professional organizations and the recommendations of the Cross Commission.

The College of Preceptors was still in existence but not as strong a force as it had been earlier. Sully lectured there on psychology in 1879 and in following years./149/ The Association of Headmasters, established in 1869, and the Association of Headmistresses, established in 1874, took steps toward securing more adequate facilities for the training of Teacher's. In 1877 the Headmasters sent requests to Cambridge and Oxford for the establishment of a teacher-training department. Cambridge responded by establishing the Teachers Training Syndicate under Oscar Browning./150/ Two years later, Frances Buss, president of the Association of Headmistresses made a similar request to the University of London. In 1883 the Diploma in the Art, Theory and History of Education was established./151/

Cambridge

In 1879 the Cambridge Teacher's Training Syndicate was established to organize a course of lectures for teachers-in-training. From 1880, certificates were awarded to those who passed an examination including papers in theory of education, history of education and practical aspects of education./154/
James Ward lectured on the theory of education (psychology) at the Syndicate from 1880 through 1888. In 1883 he was awarded a lectureship in the science of education but for various reasons this position was discontinued. /155/ Ward, however, continued lecturing on theory until 1888 when Sully took over for a year. In 1889 and 1890, H. C. Bowen provided these lectures. /156/ From 1880-1889 approximately 45 candidates received certificates the Syndicate each year. /157/

University of London

At the University of London a committee was appointed to draw up a scheme fitting Miss Buss's proposal. The committee delayed their report until 1881 "owing to the desire . . . to obtain fuller information on the subject, and in particular to observe the working of the experiment recently tried at Cambridge." /158/

The Examination in the Art, Theory and History of Teaching was approved in 1881 and the first examination held in 1883. The examination followed roughly the same scheme as at Cambridge, but more emphasis was placed on educational methods and practical work. /159/ Students wrote papers on "mental and moral science in their relation to the work of teaching," "the history of education, the lives and work of eminent teachers and the systems of instruction adopted in foreign countries," and on "methods of teaching and school management." /160/ In addition, candidates were required to give evidence of practical teaching ability. /161/
The number of candidates taking this examination was much smaller than at Cambridge. From 1883 through 1889 only 22 candidates took this examination and only 13 of these passed.
NOTES FOR INTRODUCTION TO PART III


2. Ibid., p. 344.


9. A third reform act in 1884 extended the franchise to householders in the counties and almost tripled the county electorate. This act truly transformed Britain into a democracy. Webb, Modern England, pp. 400-1.

10. See Reba Soffer, Ethics and Society in England: The Revolution in the Social Sciences, 1870-1914 (Berkeley: University of California Press, 1978), chap. 11, for how the ensuing conflicts led to the development of social psychology.

11. Marshall was the primary figure behind the establishment of economics as an academic discipline at Cambridge. See ibid., chaps. 3, 4 for a discussion of Jevons and Marshall.


14. Ibid., p. 84.

15. Of course, not all succumbed to the challenge. Spencer's political theory, as laid out in *Man versus the State* (1884), is probably the most zealous defense of individualism produced in the nineteenth century.


18 See Annan, *Leslie Stephen*, chap. 5, for an account of how one individual responded to this evidence.

19. Ibid., chaps. 5, 6.

20. Ibid.

21. The most important developments in biology, from the point of view of this work were: (1) Justus Liebig's isolation and synthesis of organic substances in the 1830's; (2) The development of cell theory first articulated by Schleiden and Schwann; (3) Investigations of the nervous system by Albrecht von Haller, François Magendie and Sir Charles Bell which discovered the anatomical and functional separation of sensory and motor nerves and led to the development of reflex theory. See Erik Nordenskiöld, *The History of Biology* (New York: Alfred Knopf, 1929); Franklin Fearing, *Reflex Action: A Study in the History of Physiological Psychology* (London: Balliere, 1930; reprint ed., Cambridge: MIT Press, 1970.)

The principle of conservation of energy, as stated in 1847 by Hermann Helmholtz also had a significant impact upon developments in the biological sciences. Helmholtz's version of the principle made it clear that living organisms are subject to the same physical and chemical laws as inorganic matter. The principle presumably dealt a death blow to vitalist doctrines in biology. Nordenskiöld, *History of Biology*, pp. 405-14.

Such developments did much to bolster the confidence of reductionistically inclined scientists. The 1847 Group in Germany, comprised of Helmholtz, Emil Du Bois Reymond, Ernst Brücke and Carl Ludwig, pledged to reconstitute physiology on a new basis by explaining vital phenomena in terms of physical and chemical laws. Paul F. Cranefield, "The Organic Physics of 1847 and the Biophysics of Today,"


23. John Stuart Mill, A System of Logic, Ratiocinative and Inductive, 2 vols, reprint of 8th rev. ed. (1872) in Collected Works ed. J. M. Robson, 18 vols. to date (Toronto, 1963- ), vols. 7-8 (1973-74). Mill did recognize that there was a plurality of methods in the physical sciences. The sciences of human nature are described in Book 6 of the Logic. There Mill pointed out that the proper methods for a science of human nature have more in common with tidiology or meteorology--descriptive sciences--than with some of the other physical sciences. Ibid., bk. 6, chap. 3, secs. 1, 2.

24. Mill's program for a science of ethology--a science of the character of individuals and nations--embodied this hope. See bk. 6, chap. 9, sec. 4.


27. Mandelbaum, History, Man and Reason, pp. 10-11. Mandelbaum adds a third thesis which asserts that "scientific explanation does not involve appeal to any immanent forces nor to any transcendent entities:
to explain a phenomenon is to be able to subsume it under one of more
daws of which it is an instance." Ibid., p. 11. He also distinguishes
between the systematic positivism of Comte and Spencer and the critical
positivism of Mill and later thinkers. Ibid., pp. 12-20.

28. On these developments see Frank M. Turner, Between Science
and Religion: The Reaction to Scientific Naturalism in Late Victorian
England (New Haven: Yale University Press, 1974); Soffet, Ethics and
Society in England and Lorraine J. Daston, "British Responses to

29. The reaction to the program of scientific naturalism was
intensified when T. H. Huxley presented his address, "On the
Hypothesis that Animals are Automata and its History," at the 44th
annual meeting of the British Association for the Advancement of
Science. The reaction will be discussed in Chapter 6 below.

30. During the 1870's James Knowles, editor of the Broad Church
Contemporary Review, competed with John Morley, editor of the positivist
and rationalist Fortnightly Review for articles on the conflict between
religion and science. See A. W. Brown, The Metaphysical Society:
Victorian Minds in Crisis, 1869-1880 (New York: Columbia University
Press, 1947) pp. 167-83, 224-28 for accounts of these two editors.

31. Reade's work went through twenty-one British editions by 1917.
The appeal of the work may have stemmed from its offer of omnipotence
through science. Reade wrote:

"When we have ascertained, by means of science, the methods of
Nature's operation, we shall be able to take her place and to
perform them for ourselves. Men will master the forces of
Nature; they will become themselves architects of systems,
manufacturers of worlds." (The Martyrdom of Man, 21st ed.

Draper's work contrasted the contributions made by science towards
knowledge and our physical well-being with the constraints placed on
both by the Catholic Church. John W. Draper, History of the Conflict
between Religion and Science (London: H. S. King & Co., 1873) This
work went through 25 British editions by 1910 and was translated into
eight languages.

32. Frank M. Turner, "Public Science in Britain, 1880-1919." Isis
71 (1980):589-608; Susan Faye Cannon, Science in Culture: The Early
Victorian Period (New York: Dawson and Science History Publications,
1978), especially chap. 7.

33. Ibid., p. 218.

34. J. Norman Lockyer was a physicist who was scientific
publicist who was quite influential among those lobbying for improved
scientific education. Nature provided reports of discoveries in both
physical and biological subject as well as discussions of political and


36. The debate over scientific investigation of the effectiveness of prayer was carried out in Knowles' *Contemporary Review* from 1872-1873. An account of this debate is presented in Brown, *The Metaphysical Society*, pp. 177-80. The conscious automata thesis will be described in Chapter 6 below.

37. Interestingly several of the "naturalists"--including Tyndall and Huxley--adopted this position. This strategem will be discussed in Chapter 6 below.


39. Anthony Quinton argues that the idealist revival met two needs. First, it provided a politics of social responsibility to set against the ailing laissez faire doctrine. Second, it provided a defence of the Christian religion intellectually respectable enough to confront scientific influences working to undermine religious beliefs. Quinton, "Absolute Idealism," *Proceedings of the British Academy* 57 (1971):5-6.


Green actually regarded himself as providing a new rational foundation for the liberal values of individualism and freedom. What was missing, he asserted, was an emphasis upon history and tradition, the idea of a common good and the political idea of positive freedom. Green argued that freedom is not merely absence of restraint but that it involves the assertion of one's higher self. Ibid., pp. 194, 207-9. It is easy to see how Green's ideas could be turned into a critique of liberalism.


42. For example, Green accepted the Hegelian view that we acquire knowledge as we partake of an eternal complete consciousness. But in other respects he rejected Hegelian thought. Passmore, A Hundred Years of Philosophy, pp. 56-58. In political thought, he rejected Hegel's conclusion that the state is superior to the individual. Richter, Politics of Conscience, p. 204.

43. The distinction between neo-Hegelian and neo-Kantian influences is very important. Most British intellectuals were influenced by idealist principles during this period. The neo-Hegelian influence is well documented among such British thinkers as Edward Caird, Green, Bradley and Bernard Bosanquet. See Passmore, A Hundred Years of Philosophy, espec. chap. 3; and Quinton, "Absolute Idealism". As far as I know, the neo-Kantian influence has not received similar attention. Quinton equates idealism with absolute idealism (as did many of the early twentieth century critics of idealism) and therefore overlooks this other tradition. Passmore contains sections on the influence of Lotze and Lange, but a fuller exposition is needed. For some stimulating ideas on the impact of neo-Kantian thought on American philosophers such as William James, see Bruce Kuklick, The Rise of American Philosophy (New Haven: Yale University Press, 1977).

44. Lange's contrast between the phenomenal realm which is described by mechanistic science and the noumenal realm, wherein resides values, enabled many of these thinkers to escape from the full implications of the doctrines they espoused, as we will see in Chapter 6 below. Passmore notes that Lange's neo-Kantian agnosticism had an indirect influence upon James' development of pragmatism. See A Hundred Years of Philosophy, pp. 97-103.

45. Passmore suggests that Lotze's ideas played a role in the development of personalism in the work of Andrew Seth and James Ward. Ibid., pp. 71-72, 83-84. I suspect that Ward's distinction between the world of science and the world of history (a distinction he was to reject), as well as his claim that science deals with abstractions stemmed from Lotze. See Ward, "Mechanism and Morals: The World of Science and the World of History," Hibbert Journal 4 (1906):79-99, for the fullest statement of his views on this matter.

47. There is a vast literature on the structure of professions and the functions of professionalization. In what follows I am utilizing the model developed by A. M. Carr-Saunders and P. A. Wilson with some revisions. See The Professions (Oxford: Oxford University Press, 1933). For criticisms of traditional treatments of professionalization I am indebted to S. F. Cannon, Science in Culture, chap. 5.


52. Controversy over professional education being undertaken universities was widespread, with the majority against it. Those who favored closer ties between professional and university education argued that the university alone could provide "those influences which will prevent the professions from degenerating into trades." J. G. Fitch, "The Universities and the Training of Teachers," Contemporary Review 29 (1876):116.


California Press, 1971), p. 145. Turner claims that the character of the German Universities was shaped by (1) wissenschaftsideologie, (2) the standards of critical scholarship in classical and Germanic philology and (3) the impact of state control of professorial appointments.

55. Turner argues that the sciences were forced into a defensive position vis-à-vis the humanities and philosophy. As a result they were forced to argue that the sciences were also effective in the cultivation of the individual (Bildung). Ibid., p. 152-53.

56. Ibid., p. 138.
57. Ibid., pp. 176, 181-82.

59. See the Reports of the Devonshire Commission pertaining to the Universities presented in Nature 8 (1873):317-19, 337-41. The proposed doctorate in science is described in ibid., p. 341. The Commission members noted that there were few career opportunities for trained scientists and this created a bottleneck which worked against the professionalization of science in Britain. Ibid., p. 88. They did assert that the primary duty of a University should be research as it was in Germany. Ibid.

60. The Cavendish Laboratory was founded at Cambridge in 1871 and the Cavendish Chair of Experimental Physics was established soon afterwards. In 1875 a chair of mechanical and applied science was established. It later became a chair of engineering. A chair of physiology and a professorship of pathology were added in 1883. J. W. Adamson, English Education, pp. 424-25.

61. Bruce Kuklick, The Rise of American Philosophy. In addition to this theme, the work provides a very thorough analysis of the thought of the early Harvard philosophers, including Pierce, Royce, James, Santayana, Whitehead and Lewis.

62. Ibid., p. xxii.
63. I no longer feel that this is a valid criticism of Kuklick's work although it does apply to much of the research on academic professionalization. This line of criticism has been developed very clearly in Cannon, Science and Culture, chap. 5. Henrika Kuklick has also pointed out the dangers of relativism involved in using such sociological criteria in "Boundary Maintenance in American Sociology: Limitations to Academic 'Professionalization'," Journal of the History of the Behavioral Sciences 16 (1980):201-19.

64. The British universities were not the "multiversities" that American universities were. They became segmented into departments much later. In addition, intellectual traditions seem to play a much larger role in the British universities than in American.


James Knowles was editor of the Contemporary Review from 1870 to 1877 and of Nineteenth Century from 1877 until 1908. The Contemporary Review represented liberal church opinion and became the mouthpiece of the Metaphysical Society. On Knowles as editor see Brown, The Metaphysical Society, chaps. 9, 10. The original name of the Society was the "Metaphysical and Psychological Society." Brown notes that "Psychological" was dropped from the name before the first regular meeting. ibid., p. 25.

67. Ibid., p. 20. It is not clear that this aim of intellectual tolerance was ever achieved. Arna Crocker writes that their discussions "grew out of individual certainty, not openness, and ... [were] in essence an opportunity to proselytise not to listen to what others had to impart." "A Study of the Metaphysical Society," p. 36. See Brown, Metaphysical Society, p. 29 for an anecdote which confirms Crocker's view.

68. Ibid., chap. 6 contains a summary of the backgrounds and views of these individuals.

69. Ibid., chaps. 7, 8 contain a summary of the backgrounds and views of these individuals.

70. James Sully became a member in 1880, the year the Society was dissolved. Ibid., p. 312.
71. Ibid., p. 21.

72. Ibid., pp. 21-23. Bain, of course, was in Scotland for most of the year during this period.

73. Ibid., p. 26.

74. Ibid.

75. Ibid.

76. A complete index of the papers presented is given in Brown, Appendix C., pp. 314-39.

77. Ibid., p. 30

78. Ibid., p. 34. Other factors no doubt played a role. The Metaphysical Society elected established figures in their fields which made it an "old" society. When Knowles resigned as secretary of the Society in November 1879, almost half the members were over sixty and only five (out of fifty-four) were under 45. Ibid., pp. 250-51, 310-12.

79. See Brown's index to the papers. Ibid., pp. 318-37.

80. Huxley was a skilled debater and a dedicated polemicist. His papers included: "Has a Frog a Soul; and of what Nature is that Soul Supposing it to Exist." (Nov. 8, 1870) and "The Evidence of the Miracle of the Resurrection." (January, 11, 1876). These titles indicate the ironic and polemical nature of Huxley's contribution to the Society. However, Brown notes that his real contribution lay in informal debate and discussion. See ibid., pp. 11, 140.


84. Bain served as a vice-president for the society. Brown reports that in the early nineties some individuals expressed concern over the neglect of the "subject of philosophy proper" (Brown, Metaphysical Society, pp. 249-50) but I have not been able to corroborate this statement.


87. Ibid., p. 13.

88. Ibid.

89. Brown, Metaphysical Society, p. 246.

90. Salter, Society for Psychical Research, p. 7.

91. Ibid., pp. 16-22.


94. See Brown, The Metaphysical Society, chaps. 9, 10, 11 for information on these and other late nineteenth century periodicals.

95. The Journal of Mental Science, which was established by the Medico-Psychological Association in 1855, had clear practical aims. J. C. Bucknill, editor of the Journal from 1859-1862 wrote that the Journal would deal with aspects of mental science that could be useful to medical men involved in the treatment of the insane, i.e., mental science "relating either to the preservation of the health of the mind or to the amelioration of cure of its diseases." "Preface of Journal of Mental Science, in Journal of Mental Science 26 (1880). He likened practical mental science to applied mathematics and noted that while some knowledge of the "pure science" might be beneficial, practical men should primarily devote themselves to the study of the practical aspects of the science. When Maudsley became editor of the journal in 1862, more space was devoted to the discussion of mental science in its "metaphysical aspect."

96. Retrospects of psychological periodical literature were prepared regularly. Those published during the early 1880's were written by B. F. Costelloe.

D. Hake Tuke was coauthor with J. C. Bucknill of the Manual of Psychological Medicine which was the standard text for psychiatric thought during the last third of the century. Hearnshaw, British Psychology, p. 146.
97. Bain added: "I never thought that the Hegelians would add to the sale; we merely bought off opposition." Bain to George Croom Robertson, 6 February 1882. All letters between Bain and Robertson are in the George Croom Robertson Papers, University College, London.

98. See Bain to George Croom Robertson, April 1881 and 1st May 1881.


100. Ibid., p. 2. Robertson is here noting what I have called the propaedeutic role of psychology.

101. Ibid., pp. 2-3.

102. Ibid., p. 3

103. Ibid. The remainder of the article is a guarded defense of the role of psychology in philosophy.


106. See listings under "mental," "mind," and "psychology." Ibid. Of the psychologists I am discussing only Sully was represented in the pages of Brain. He commented on Bastian's "The 'Muscular Sense': its Nature and Cortical Localisation," Brain 10 (1887):96 and published an article on "The Psychophysical Process Underlying Attention," Brain 13 (1890):145-64. Bain, Fouilée and Hodgson presented comments on this paper in Brain 13 (1890):348-55.

107. See Introduction to Part I, section headed "University of London" above. After 1877, logic and psychology became an optional topic on the B.Sc. Part II examination. In 1881 B.A. students were given the option of taking an examination in either mathematics (pure or applied) or mental and moral science.

108. "Report of the Committee of Examinations in Arts, Sciences and Laws held December 3, 1879," Minutes of the Senate. These minutes are in the Senate House Library, University of London. W. S. Jevons and James Sully were examiners in logic and psychology that year.

109. Minutes of the Senate, April 26th 1882.

110. Bain to George Croom Robertson, 28 Oct 1882. See also letter dated 18 October 1882.

111. University of London Calendar, 1884-85. The impact of this revision was mitigated by the fact that this portion of the examination was optional.
112. The D. Sc. degree in Mental Science was established in 1860. See Introduction to Part II, section entitled "University of London" above. The 1881 revision shows the impact of the German research ideal. University of London Calendar, 1881.

113. Minutes of the Senate, 1 April 1885. Henry Maudsley later noted, with regret, that he had instigated this reform. See Maudsley, "The New Psychology," Journal of Mental Science 46 (1900):412.

114. The new regulations went into effect 1887. Minutes of the Senate, 26 October 1887. University of London Calendar, 1886-87.

115. University of London Calendar, 1881. The examination questions in the history of philosophy focused on Descartes. W. S. Jevons and James Sully were examiners that year. The logic and psychology essay question was "How far can the study of inductive methods of physical science assist us in the inductive treatment of the social sciences?" (Ibid.)

116. University of London Calendar, 1883. James Ward and James Sully were examiners that year. The history of philosophy questions focused on Locke. The logic essay questions were: "The proper place of Logic among the Sciences; more particularly its relation to Mathematics, to Psychology and to the Philosophy or Theory of Knowledge" or "Nature and Use of Hypothesis." Ibid.

117. University of London Calendar, 1885. George Croom Robertson and James Ward were examiners that year. The history of philosophy questions focused on Hume and Kant. The logic essays were: "Discuss the question how far Predication implicates existence"; and "Examine Mill's theory of induction."

118. University of London Calendar, 1886. George Croom Robertson and James Ward were examiners that year. The history of philosophy questions focused on Kant. The logic questions were: "Jevons and Mill's doctrine of induction compared" and "Truth and Limits of two statements: a. 'Science is Measurement' and b. 'Science is Language well made'."

119. University of London Calendar, 1887. Robertson and Ward were examiners that year. The questions in the history of philosophy focused on Aristotle and Spinoza. The logic essays were: "The nature of Definition and the characteristics of the definitions of mathematics, physics, biology &c." and "the relation of Logic and the theory of probability."

120. University of London Calendar, 1889. R. Adamson and Robertson were examiners that year. The history of philosophy questions focused on Leibniz and Lotze. The other essay question was on ethics rather than logic. It asked for "A comparison of Ancient and Modern ethical theories in regard to the position of the State in the moral life."
121. Adamson, English Education, pp. 433-34.

122. Ibid., p. 434.

123. Ibid., pp. 434-35. Hugh Hale Belot, University College London, 1826-1926 (London: University of London Press, 1929), p. 380. Belot notes that the reform also had another source—the discontent of medical students with the University of London examinations.


125. Ibid., pp. 435-38; Belot, University College, pp. 380-81.

126. In 1881-2 and 1882-3 Robertson was replaced (first by Adamson of Owens College and afterwards by Sully,) in 1886-87 some instruction was given by Sorley and in 1887-88 by Sully and Coupland. "Report of the Committee Reviewing Grote Professor of Mind and Logic," 1884, 1889. AM/C/164, AM/C/220. (These committee reports are part of the College Correspondence, University College Library, University College, London.)


128. "Report of the Grote Committee," 1889. College Correspondence, AM/C/220. This report covered the period from 1885-1888. In 1881, new regulations went into effect requiring B.A. students to take either mathematics or mental and moral science Robertson's comment pertains to this fact.

129. During this period the number of successful honours candidates increased slightly. From 1887-80 27 candidates earned honours, from 1881-1884 29 and from 1885-88 39 earned honours. "Reports of Grote Committee," 1881, 1884, 1889. College Correspondence, AM/C/67, AM/C/164, AM/C/220. During 1886-87 and 1887-88 instruction was given by others because of Robertson's illness. In those years no candidates attending the classes obtained honours. College Correspondence, AM/C/220.

From 1862, the University of London Calendar carried advertisements for tutors and correspondence colleges offering to prepare students for the University of London examinations. The largest of these, the University Correspondence College also ran their own press, which published guides for the University of London examinations. Their advertisements alone covered almost 30 pages in the University of London Calendar for 1889-90.

130. See "Schedule of Subject Examinations" issued by the Moral Sciences Board, 15 February 1881. CUR 288. (This file along with other documents on the Moral Sciences Tripos are in the University Archives, University Library, University of Cambridge.)

132. Ibid., The metaphysical portions of Spencer were to be omitted.

133. Ibid., p. 4.

134. Ibid., pp. 25-29. Additional books were recommended. These included Morell’s Introduction to Mental Philosophy, Volkmann’s Lehrbuch der Psychologie, Lewes’ Problems of Life and Mind, vols. 3, 4; Foster’s Textbook of Physiology, bk. 3; Wundt’s Physiologische Psychologie; Maudsley’s Physiology of Mind and Pathology of Mind; Lotze’s Metaphysik, bk. 3 and Psychologie.


136. In 1887-88 the Moral Science Board attempted to entice students by issuing a guide to lectures in the Moral Sciences. See “Minutes of the Board of Moral Sciences Studies,” 18 November 1887. Min. V.10. No information is available on how useful students found this guide, but the Board decided not to reissue it the following year.

137. In 1888, Sidgwick proposed that students be allowed to take the two parts of the examination in successive years. “Minutes of the Board of Moral Sciences Studies,” 29 February 1888. Min. V.10. This initiated a process of reform that lead to the renovation of the Moral Sciences curriculum.

138. More detail on these revisions are given in Introduction to Part IV below. The opportunity to take examinations in more than one area did not help the Moral Sciences tripos grow. Although many took Part 1 of the tripos, they went on to take the second part of other triposes (e.g. mathematical and classical) which offered more prizes and fellowships.


141. Minutes of the General Board of Studies, 28th April 1884. Min. III.1, 59-3. Keynes usually lectured on logic during the 1880’s.

The Moral Sciences Board had a Professor of Political Economy (Marshall) and a Professor of Moral Philosophy (Sidgwick). A Professor of Mental Philosophy and Logic was also to be appointed. Although all their requests in this period were based on the supposition of this Professorship actually being established, it remained mere supposition until 1897.
142. The content of these lectures is described in a pamphlet issued for students in 1887-1888. See Minutes of the Board of Moral Science Studies, 18 November 1887. Min. V.10.


144. Letter from J. Venn and J. Ward dated 6 May 1886. Minutes of the Board of Moral Science Studies. Min. V.10. This request is frequently reported as having been made in 1877. See L. S. Hearnshaw, A Short History of British Psychology, 1840-1940 (New York: Barnes and Noble, 1964), p. 171; F. C. Bartlett, "Cambridge, England: 1887-1937," American Journal of Psychology 51 (1937):98. This account appears to have originated with C. S. Myers. See his autobiography in C. S. Murchison ed. History of Psychology in Autobiography 3:217. I found no evidence supporting this claim in the Minutes of the Board of Moral Science Studies. The earliest that the proposal appears to have been discussed was 1882 and no formal request was made at that time. Ward's own comments corroborate this account. In 1903 he noted that the need for laboratory equipment had been discussed in 1882 but that the proposal was withdrawn in view of the greater urgency of other demands (probably the need for University sponsored lecturers) "Discussion on the Report of the Special Board for Moral Science dated 19 February 1903," 5 March 1903. CUR 28.8, 74.


146. Ibid.

147. Discussions were held in November 1886 and the proposal was defeated 10 to 2 with one neutral vote cast. Minutes of the General Board of Studies. Min. 111.1, 128.9. In 1891, £50 was finally approved for equipment. Ibid., 268.6.

148. Minutes of the General Board of Studies, 26 May 1884, 6 June 1887. Min. 111.1, 64.5, 150.2. Henry Sidgwick had been awarded the degree of D. Litt. by the General Board of Studies in 1883.


151. Senate Minutes, University of London.

152. Rich, Training of Teachers, pp. 223-25. Rich notes that the majority report of the Commission did not fully support these colleges, but that the minority report did.
153. Ibid., p. 226. Rich reports that there was a short-lived training college established at University College, London in 1892. I have found no evidence of this, but there was one at Bedford College.


156. See Annual Reports of Teachers' Training Syndicate in CUR 58.

157. The first five years there were between 20 and 30 candidates receiving certificates each year. By the end of the eighties, examinations were administered twice a year and upwards of 70 candidates were obtaining certificates.


159. In addition, students had already received some university education so a higher level of prior training existed. The minimal requirement for taking the examination was that the candidate had earned honours in the University of London matriculation examination. In fact all candidates obtaining the diploma before 1900 had already earned at least one first degree (B.A. or B.Sc.).


161. Ibid.

162. Examination results reported in Minutes of the Senate, vols. 11, 12.
CHAPTER 6

THE CONSCIOUS AUTOMATA DEBATE

Introduction

Several confrontations between the British moral tradition and the deterministic and reductionistic precepts of scientific naturalism took place in the late nineteenth century. The issues accentuated in these confrontations became the focal point of debates concerning the moral nature of man and the scientific character of theories about man. One such debate, instigated by Huxley's thesis that humans are merely conscious automata, focused on issues of particular relevance for psychology. Actually many of these issues—the incommensurability of mind and body; the choice between the metaphysical positions of materialism or spiritualism; the nature of scientific explanation in the case of the moral sciences—had been of concern to philosophers and psychologists prior to Huxley's statement. However, the conscious automata debate, which lasted from 1874 until about 1883, gave particular prominence to these issues, and highlighted their importance for the emerging discipline of psychology. In this chapter I will trace the background of the debate—locating it within its native philosophical tradition as well as in the philosophical context of German Neo-Kantian thought. I will also present the popular and scientific evidence for and against the thesis. After presenting the positions of proponents of the thesis as well as some opponents of the
thesis, I will examine the general impact of the debate.

The Clash of Moral Concerns and Scientific Naturalism

The prototypical late nineteenth century British intellectual has been depicted as the retainer of a moral tradition that put an emphasis on individual conscience and the development of sound character. Quite often such an individual was an agnostic who had converted religious zeal into an optimistic belief in the possibility of progress and who was convinced that systematic thought and right conduct could serve to ensure such progress.1

As part of this secular faith it was taken for granted that individuals have the ability to deliberate and to control or guide their own actions. During the same period, however, certain scientific doctrines implied that such an assumption was unwarranted. If, as the scientific naturalists claimed, human action is governed by the same laws as the action of material objects, and if the action of such material objects is characterized by a thoroughgoing determinism, then there may be no grounds on which humans can be held morally responsible for their actions.2 The resulting view of man alarmed many intellectuals in this period:

When . . . we add the modern scientific views respecting the physical relations of consciousness, the logical resources of the belief in responsibility are further weakened . . . reducing the loftiest and most far reaching moral efforts to the irresistible reaction of a complex automatism.3

It was the triumvirate of Tyndall, Huxley and Clifford who gave the clearest and most systematic accounts of the naturalist program in Britain and traced out the implications of the position for views of
human action. However, the positions they advocated in articles and public addresses during the mid to late 1870's were not new. Most of these issues had been under discussion in Britain for some time. The systematic exposition of the program was not even new; it had been undertaken in Germany a quarter of a century earlier. Nevertheless, the clearer and more systematic formulation of the program during the 1870's did serve to accentuate particular issues, making them the focus of more intensive subsequent debates.

Contemporary Accounts

The significance of the clash has been attested to in several recent publications. I will briefly review the literature in order to provide a context for the development of my own views on these matters.

Turner

In Between Science and Religion, Frank Miller Turner examines the reaction of six Victorian intellectuals (Henry Sidgwick, A.R. Wallace, F.W.H. Myers, George Romanes, Samuel Butler and James Ward) to Victorian scientific naturalism. According to Turner, the fundamental tenet of the naturalist movement was the view that "all valid human experiences and ideals are expressible through or subsumable under existing scientific categories and laws." In addition to this scientific vision, Turner claims they shared allegiance to particular scientific theories and to a particular philosophy of science. According to Turner, Dalton's atomic theory, the principle of
conservation of energy and Darwin's evolutionary theory enabled these thinkers "to interpret the detailed phenomena of life, mind and society in terms of matter, motion and force."/8/ Their philosophy of science—a consistent empirically oriented phenomenalism—enabled them to dispense with issues of a metaphysical nature or to argue that such issues were not relevant to their concerns.

While Turner's description fits some of the naturalists he names, it is not entirely clear that it fits others./9/ In part the shortcomings in Turner's account stem from a focus on a particular form of naturalism expressed during the 1870's. In what follows I will attempt to develop a somewhat narrower but deeper assessment of naturalism. While I will focus on the writings of Tyndall, Huxley and Clifford, I will look backwards to their inspiration in the work of the German neo-Kantian, F. A. Lange.

Soffer

Reba Soffer's account in Ethics and Society in England, 1870-1914 restricts itself to the period following 1870 and to the positions espoused by Huxley, Tyndall and Clifford. In Soffer's view, the conscious automata debate was really concerned with the relations among mind, body and morality. It is her view that the debate's relevance for psychology lay in its message that a voluntaristic and rationalistic psychology, with its moral adjunct of free will, could no longer be maintained in the light of new physiological evidence and evolutionary theory. While Soffer pinpoints important issues in her discussion of these matters, she divorces the issues from their historical context.
In addition, her decision to focus on the reaction of William James to these views, and on how this reaction shaped his psychology is perplexing in a book on English thought./10/ In my account of reactions to this I will focus more clearly on the English intellectual scene./11/ In addition, I will maintain that these debates also had a bearing on issues concerning the nature of scientific explanation and its applicability to man.

Daston

In "British Responses to Psycho-Physiology, 1860-1900," Lorraine Daston examines many of the same issues as Soffer but places them in a broader intellectual and philosophical context. She traces the encroachment of naturalism upon territory presumed to be invincible—the personal experiences of purpose and value. In her account the naturalistic conception of science was one which envisioned "an empirical, deterministic, reductionistic scheme of both method and explanation for all sciences from physics to psychology."/12/ She investigates reactions to the steady advance of this program in order to determine how far the program was identified with science per se. In addition, she documents the problems which developed in the program resulting, for example, from the contradictions between its twin precepts of empiricism (phenomenalism) and determinism./13/

Daston's account, like Soffer's, focuses on the latter third of the century and thus fails to show how the naturalistic precepts had previously been intertwined with programs for the enterprise of psychology. Daston is correct in identifying as a central issue of the
period, the concern over whether the "first-hand" experience of purpose and value could ultimately be reduced to a physicalist-determinist framework. She quotes Henry Sidgwick's comment on the sanctity of the "mysterious citadel of the will" by way of identifying the last battleground of those opposed to a thoroughgoing naturalism. But Daston overlooks the fact that deterministic and reductionistic accounts of volition were widespread prior to 1874, and that Sidgwick's statement is probably more correctly interpreted as a battle-cry designed to incite rebellion against the occupiers.

Smith

The work of Roger Smith is very useful for enlarging one's perspective on these debates. In the first place, he contends that naturalistic thought was important in Britain prior to the period the above thinkers focus on. Developments in physiology, particularly the development of reflex theory, had already encouraged an emphasis on continuities among man, life and physical nature. More importantly, he shows that there were several variants of the naturalistic program and closely examines one tradition within which it was possible to reconcile concerns about values and morality with a rigorous conception of science. Smith argues that certain thinkers, including Wallace, Carpenter and Laycock, operated with an anthropomorphically derived conception of force and cause that was both teleological and dynamic. As they viewed physical nature as displaying purpose, they were able to incorporate values into their science and to argue wholeheartedly that a true science of man was possible.
It is unfortunate that Smith has not carried out the investigation of this tradition of value-laden naturalism (as opposed to mechanistic naturalism) beyond 1870 and it will not be my aim to do so in this chapter. The significance of Smith's work for the present study lies in his demonstration that naturalistic thought played a role prior to 1870 and in the fact that it cautions us to look closely for differences among thinkers who are classified as representatives of the naturalist tradition./18/

My Own Account

Definition of Naturalism

After raising a number of objections to working definitions of naturalism I am now in the awkward position of having to formulate one for myself. I will adopt portions of Turner's and portions of Daston's, defending myself by pointing out that I am only dealing with a small group of thinkers. Following Turner, I contend that the aim of these naturalists was to "interpret the detailed phenomena of life, mind and society in terms of matter, motion and force." Following Daston, I contend that these naturalists sought scientific explanations that were empirical, deterministic and reductionistic. Unlike Turner, I contend that a particular scientific theory about the constitution of matter was not as important as the kind of analytic reductionism presupposed for any such theory. Unlike both Turner and Daston, I would contend that components of the naturalist program had influenced the thinking of most individuals during this period, even some of those were to express most strongly their objections to the program. As an alternative to Turner's
formulation, I maintain that the scientific doctrines most relevant for
the proponents of naturalism were Laplace's nebular hypothesis, the
principle of conservation of energy and biological theories including
reflex theory, in the first instance and evolutionary theory which
played an important role later. Finally, I maintain that the
phenomenalism of Kant played as much of a role in the formulation of
positions taken by these thinkers as did the phenomenalism of Hume and
Mill. Furthermore, Kantian phenomenalism provided several of these
thinkers with an escape clause, when pressed concerning the implications
of their views.

**Lange's neo-Kantian Contribution**

My contention that Lange's *History of Materialism* provided the
proximate inspiration for views expressed by Tyndall and Huxley deserves
more documentation./19/ In the Belfast Address, Tyndall acknowledged
his debt "to the spirit and to the letter" of Lange's "excellent History
of Materialism."/20/ Although Tyndall's address will be summarized
later on it is worth pointing out that the first quarter of this address
was simply a précis of Lange's account of the historical development of
the doctrine of atomism. The remainder of the address traced out the
implications of this purely scientific view of the world, including the
implications which follow from the denial of an active soul.

Huxley's bow toward Lange appears in a paper on Descartes where he
was concerned to show that the two main streams of modern thought,
materialism and idealism, had their source in the philosophy of
Descartes./21/ Huxley wrote:
In truth, Descartes' physiology, like the modern physiology of which it anticipates the spirit, leads straight to materialism, so far as that title is rightly applicable to the doctrine that we have no knowledge of any thinking substance, apart from extended substance; and that thought is as much a function of matter as motion is./22/

He then referred readers to works on materialism, including:

Kuno Fischer's Geschichte der neuen Philosophie, Bd. i; and the very remarkable work of Lange Geschichte des Materialismus. A good translation of the latter would be a great service to philosophy in England./23/

A brief sketch of the doctrines of Lange, with particular reference to what psychology looks like on such an account, will be useful for what follows. As a neo-Kantian, Lange maintained that a thoroughgoing determinism reigned in the phenomenal realm. Within that realm, the "mechanical mode of discovery and explanation" was the most appropriate mode. When we look at the history of science, he argued, we find evidence of the productivity of such a mode. Science, as it deals only with phenomena, ought to be thoroughly mechanistic in its accounts./24/

Lange, like other neo-Kantians, acknowledged that the understanding deals only with one aspect of experience—the phenomenal aspect. The spiritual and emotional demands of the soul could find satisfaction in a separate (i.e. non-phenomenal) region of value (Art and Ideal)./25/

As Tyndall pointed out, Lange was not a materialist. However, Lange maintained that materialism, while false, was still the best of all extant philosophical systems. His work focused on revealing the errors which materialism may lead to. At the same time, Lange maintained that the materialistic approach (applied only in the phenomenal realm) is scientifically superior to spiritualism with its positing of active souls./26/
Lange found the doctrine of a soul particularly objectionable in psychological explanations. However, he did not accept all the materialistic accounts which have been proposed. For example, he was highly critical of thinkers who maintained that there is a one-to-one correspondence between ideas and particular events in the brain or between mental functions and functions of the brain. Against the first group of thinkers (physiologically-oriented associationists) Lange argued that their view involves a misunderstanding of the functions of the mind. The brain, he said is primarily a coordinating and connecting mechanism, not a recording instrument./27/

On the other hand, those who have focused on the functions of the mind have often degenerated into spiritualism. Lange found the phrenologists, in particular, guilty of circularity in their accounts:

Instead of one soul, phrenology gives us nearly forty, each in itself as mysterious as the life of the soul is generally. Instead of resolving it [the brain] into real elements it resolves it into personal beings of various character. Men and animals, the most complicated of machines, are the most familiar to us. We forget that there is something to be explained in them, or we only find the matter "clear" when we can imagine everywhere little men over again who are the bearers of the entire activity./28/

Here Lange was indicating his objections to forms of materialism that degenerated into dogmatic metaphysics. However, he felt that the most serious problems faced by psychology in the past stemmed from the positing of a soul that "works in mysterious ways." He suggested an alternative conception:

Calmly assume, then, a psychology without a soul. And yet the name will still be useful as long as we have something to study that was not completely covered by any other science. It is true that its boundaries on the side of physiology are not easy to draw. But that is no harm either. If the same discoveries are made in different ways, their value is all greater./29/
While the boundaries separating psychology from physiology are
difficult to draw, Lange made it clear that consciousness can not play
much of a role in physiological explanation. That is, he asserted that
consciousness does not, and cannot, intervene in the series of
physiological events which determine action.\textsuperscript{30} Lange advocated a
"somatic method" for most branches of psychology:

This method requires that in psychological inquiry we should as
far as possible keep to the corporeal processes, which are
indissolubly and by law connected with the psychical phenomena.
In applying it, however, we are by no means obligated to regard
the corporeal processes as the ultimate basis of the psychical
element . . . . Just as little, of course, must we allow
ourselves to be misled . . . into assuming here psychical events
without a physiological basis.\textsuperscript{31}

Lange did say that a science of mind (\textit{i.e.}, an empirical science of
the successions of ideas) may be pursued independent of any knowledge
concerning functions of the brain.\textsuperscript{32} However, the method of
introspection employed by those interested in creating such a science is
flawed, for it fails to eliminate the influence of preconceived views
and tendencies.\textsuperscript{33} Lange voiced strong criticism of British psychology
on additional grounds:

The distance between the English and the German procedures in
psychology may, in fact, be reduced to this: that the German
scholars apply all their powers of mind to attain sure and
correct principles, while the Englishmen are chiefly concerned
to make out of their principles whatever can be made. This is
as true for the association psychology as such, as for its
physiological foundations. Instead of improving the theory of
association in its extremely defective foundations and more
rigidly defining the method of inquiry, the recent writers give
us only broad developments and analyses, while the foundations
remain just as they were with their predecessors.\textsuperscript{34}

We shall hear similar criticisms levelled against the British
tradition in the next chapter. For now I will simply summarize the main
points Lange had to make concerning psychology. If psychology is to
rank among the sciences, he stated, it must eschew a metaphysical, i.e.,
circular, mode of explanation. Like any other scientific investigation,
it must involve the examination of phenomena and their relations. It is
unscientific to posit a soul to account for human thought or activity.
We must seek to refer actions and psychical functions to their organic
base, since this latter class of observations can be controlled and
confirmed intersubjectively. While it may be useful to specify
relations among mental phenomena independent of physical phenomena, the
usual methods by which this is done are inferior to other scientific
methods. In psychology, as in other sciences, we must carry the
mechanical mode of explanation as far as possible. The surest way of
doing this is through the use of the somatic method. These, then, are
the conclusions Lange reached following a thorough review of
developments in other sciences. The similarity between his conclusions
and those drawn by Tyndall and Huxley are clear. Before presenting
these latter conclusions, however, it will be useful to review
scientific evidence consistent with the view that behavior was not
directed by the soul.

Evidence Suggesting the Automaton Thesis

Since the seventeenth century there had been a great deal of
compelling indirect evidence for the mechanical view of human action.
Descartes' mechanical view of the body was partly inspired by a
hydraulic statue he had come across in a garden. The mechanical
masterpieces of the French—Vaucanson's mechanical flute player,
displayed in Paris in 1738, and the Droz's "writing boy" and "piano
playing girl"--captured the imagination of those interested in mechanical theories and the appropriateness of their application to humans./36/ La Mettrie in Homme Machine compared Vaucanson's machines with his own./37/ It is not at all surprising that people viewing such machines were led to seriously consider whether human action might be wholly mechanical, requiring the guidance and direction of neither consciousness nor will.

While these creations continued to stimulate interest in the nineteenth century, individuals upholding the mechanical point of view were able to draw on additional sources of support./38/ In France and Germany, significant advances were being made in physiological research. The reflex theory, which grew out of this research, suggested that much of human behavior was not directed by consciousness, but was controlled solely by the physiological conditions underlying it. At the same time, clinical observations of patients in mesmeric trances, both in England and abroad, demonstrated that purposive activities could be conducted in the absence of conscious awareness. Finally, during the second half of the century, evolutionary doctrines were transforming the notion of purpose by showing that more and more so-called purposive activities were based on instinct.

Reflex Theory

Association psychology, particularly as formulated by Hartley in the middle of the eighteenth century, provided a framework within which these physiological findings could be situated. Hartley's conception of "secondarily automatic" motor habits stressed the mechanical nature of
habitual action. A category of behavior was thus posited which required conscious guidance in its early stages, but dispensed with it in later stages. The associationist account, with its focus on habits, also emphasized the automatic character of most mental activities./39/

Within physiology, the development of reflex theory in the early nineteenth century played the largest role in enhancing receptivity towards the ideas of the automatists. Research conducted by Charles Bell, François Magendie, Marshall Hall and Johannes Müller on the structure and functions of the nervous system provided the groundwork of the view that much, if not most, of human behavior was guided by purely mechanical processes./40/

The first important discovery during the nineteenth century concerned the structure of the nervous system, more specifically, the structure of the spinal nerves. Charles Bell and François Magendie, working independently during the first quarter of the nineteenth century, showed that the two roots of the spinal nerves had distinct functions. One of these roots, the dorsal, contains only sensory fibers, while the ventral root contains only motor fibers. Bell was to take further steps toward the notion of a reflex arc in 1826 when he said, "Between the brain and the muscles there is a circle of nerves, one nerve conveys the influence from the brain to the muscle, another gives the sense of the condition of the muscle to the brain."/41/ Bell stressed that it is necessary for this nervous circle to remain intact for feeling and/or action to take place.
A further step toward the specification of the reflex arc concept was taken when Marshall Hall insisted on the necessary existence of a connection between incoming and outgoing pathways within the central nervous system./42/ Hall also made a distinction between the true spinal system and the cerebral system. The spinal system is the true seat of the reflex and is unaccompanied by psychic activity. The cerebral system, on the other hand, is the exclusive seat of sensation and volition./43/ Reflex action, therefore, is restricted to the spinal cord and the medulla. While Hall distinguished clearly between voluntary and involuntary functions, he noted that reflex acts may frequently resemble volitional acts. That is, some acts that are purely mechanical responses to stimulation may appear to be under the control of will since they display a high degree of design.

Johannes Müller made contributions which paralleled Hall's./44/ However, unlike Hall, he argued that reflex action is not restricted to the medulla and spinal cord but that it occurs in certain cerebral nerves, e.g., the optic and the auditory./45/ Furthermore, Müller regarded psychic activity (i.e., awareness of sensation) as a factor which may play an important role in the modulation of reflex action./46/

Following the work of Hall and Müller, reflex theory played a central role in most explanations of animal and human behavior./47/ Until 1870, however, most theorists who employed reflex action as an explanatory principle did not extend the range of this action to the cerebrum. Robert Young discusses this impasse and the
reasons for it. In the first place, Young points out, researchers prior to 1870 had never been able to produce either feeling or movement from direct stimulation of the cerebral hemispheres. This led them to regard the hemispheres as distinct from lower brain structures and devoid of characteristics necessary for mediation of reflex action./48/ Young also points out that this physiological evidence was consistent with the belief that the cerebrum was the seat of the higher mental processes and that it served the independent functions of coordinating and directing feelings, thoughts and actions./49/ This view, in turn, rested on the Cartesian doctrine that mind and body were distinct substances.

While Young's account seems to be accurate concerning most of the thinkers during this period, Thomas Laycock and William Carpenter are two notable exceptions./50/ As early as 1840, Laycock stated that the laws of reflex action could be extended to the brain since the ganglia which comprise the brain are but a continuation of the spinal ganglia./51/ And Carpenter, in 1852, asserted that there was no apriori reason why the cerebrum should be exempted from the law of reflex action./52/ Shortly after this he formulated his doctrine of unconscious cerebration to cover acts which proceed automatically and unconsciously when our attention (will) is diverted. The doctrine of ideo-motor action and emotional action formulated around the same time, extended reflex activity to include automatic acts elicited by ideas and emotions in addition to those elicited by physical stimuli./53/
While Laycock and Carpenter were exceptions to the dominant view of the period, their work indicates how compelling the paradigm of reflex action could be as an explanatory principle of animal and human behavior. With Laycock and Carpenter, we also see a blurring of the distinction between voluntary and involuntary activity that was to become more widespread during the second half of the nineteenth century. Reflex theory was to play a major role in shaping the view that human action had only the appearance of purpose and that it was as rigidly controlled and invariable as the movements of mechanical figures. The theory, however, was based on evidence that was not incontrovertible. A brief discussion of the sources of this evidence as well as alternative explanations that were posited is in order here.

Early work was carried out on a variety of decerebrated and decapitated animals including pigeons, turtles, hedgehogs, lizards, eels and frogs. Marshall Hall first observed purely reflex functions of the spinal cord on a decapitated triton. Spinal frogs were perhaps the most popular subjects for experiments, but dogs were employed in some studies and one researcher even carried out investigations on a freshly beheaded criminal.

With the exception of Hall's work, there were no extensive programs of experimentation in England. Despite the absence of a thriving indigenous research program, British writers kept up with research in other countries. The results of these experiments, however, were not clear-cut. While these studies demonstrated that reflex action takes place independent of the cerebrum, an intact spinal cord still appeared...
to be a necessity. Moreover, reflex acts were clearly coordinated and appeared to be purposive. One could maintain the view that consciousness and will are necessary for the control of such acts by simply asserting that sensation and volition are properties of the spinal cord as well as the cerebrum. This position was taken by Pflüger against Lotze in Germany at mid-century and by G.H. Lewes in Britain slightly later./60/ On such an account the reflex character of much human behavior is not denied, but reflexes are depicted as having a non-mechanical character. Both Pflüger and Lewes maintained that psychical processes play a role in the guidance of reflex activity. For Lewes, the implications of the alternative account are alarmingly clear:

If the animal is such an organized machine that an external impression will produce the same action as would have been produced by sensation and volition, we have absolutely no ground for believing in the sensibility of animals at all, and we may as well at once accept the bold hypothesis of Descartes that they are merely automata. If the frog is so organized, that when he cannot defend himself in one way, the internal mechanism will set going several other ways—if he can perform, unconsciously, all actions which he performs consciously, it is surely superfluous to assign any consciousness at all. His organism may be called a self-adjusting mechanism, in which consciousness finds no more room that in the mechanism of a watch./61/

The conscious automata thesis espoused by Huxley sixteen years later, stands as witness to the willingness of some thinkers to accept such implications. Lewes and Pflüger's view never became widely accepted, although it played a lively role in debates that followed./62/
Clinical Observations

Clinical observations also corroborated the thesis that much purposive behavior was not consciously directed, but proceeded from automatic activity of the mind. Within medical circles, clinical observations of patients with brain and spinal cord injuries provided evidence that consciousness was not a necessary concomitant of purposive activity. Furthermore, as mentioned earlier, demonstrations of trance phenomena, such as mesmerism and somnambulism became increasingly widespread so that wide sections of the population became familiar with varieties of automatic activity. Mesmerism, as a technique for and an explanation of the induction of hypnotic trances, was developed and established during the later part of the 18th century in Germany and France./63/ Despite the fact that its scientific foundation was thoroughly discredited, demonstrations of the phenomenon were so compelling that its popularity spread quickly through Europe./64/ The English were generally sceptical of the claims of the mesmerists, but the phenomenon became better known in the early 1840's due to the efforts of a Manchester physician, James Braid./65/ In Scotland, enthusiasm for mesmerism became so great that a "psychic epidemic" broke out in Edinburgh in 1851./66/

Mesmerism and related phenomena were often discussed in scientific/medical circles, but the response was mixed. Thomas Laycock is said to have received the inspiration for his theory on the reflex action of the brain after watching a young girl being mesmerized in 1837./67/ Henry Holland, one of the most fashionable physicians of the
period, expressed his concern about the quality of research on animal magnetism and related phenomena, pointing out that, "the most obvious sources of error are unseen or unprovided for, even such as vitiate the experiments made in their first stage of progress."/68/

William Carpenter, on the other hand, devoted considerable space to discussion of mesmerism and related phenomena in the fourth and subsequent editions of Principles of Human Physiology./69/ Observations of such phenomena played an important role in leading him to formulate the aforementioned doctrines of unconscious cerebration and ideo-motor action. It is worth taking a closer look at Carpenter’s accounts of these phenomena.

Carpenter discussed two categories of automatic activity, one being the effect of physical sensation; the other the effect of ideas and emotions. The first category included simple reflex activity and the composite movements we label instinctive. The second category covered many aspects of ordinary mental phenomena—the observed effects of attention as well as certain effects seen in the processes of memory, judgement, abstraction and reverie. In addition, it covered many extraordinary mental phenomena such as electrobioLOGY, dreaming, somnambulism, hypnosis and intoxication./70/ While these actions were called reflexive because they proceeded without the guidance of consciousness and the direction of will, their reflexive character was acquired, not original./71/ For Carpenter, the apparent purposiveness of these acts was indicative of a real purposiveness inherent in earlier forms of the acts./72/
In addition to the phenomena of automatic activity, clinical observations led medical/scientific thinkers of the period to posit close ties between physical structure and mental function. To a large extent this was due to the impact of phrenology on physiological thought./73/ Further evidence was supplied by medical men such as Benjamin Brodie who observed disruption of sensory and motor functions following injuries to the brain./74/ A more radical position was taken by Henry Maudsley, author of *Physiology and Pathology of the Mind* (1867) and editor of the *Journal of Mental Science* from 1862 until 1878. Maudsley shunned none of the implications of a materialistic philosophy and consistently asserted that the only way psychology would advance would be as mental physiology./75/ Such a position, formulated at a time when the role played by consciousness and will was being questioned, fueled the tendency to eschew the examination of consciousness in favor of a thoroughgoing investigation of the nervous system.

**Evolutionary Theory**

Other developments in biology were to have a profound influence on these debates. Darwin's publication of the *Origin of Species* (1859) and the later publication of *The Descent of Man* (1871) and *The Expression of the Emotions in Man and Animal* (1872) was to influence the course of this debate in two ways. First, and most specifically, evolutionary theory forced people to reconceptualize the nature of purposive activity. Secondly, it engendered various debates on the distinction between man and animals which had a bearing on the conscious automata.
debate.

While Darwin's *Origin* did not explicitly deal with the issues of evolution in man, he did remark in his conclusion that,

In the future I see open fields for more important researches. Psychology will be securely based on the foundation already well laid by Mr. Herbert Spencer, that of the necessary acquisition of each mental power and capacity by gradation. Much light will be thrown on the origin of man and his history. /76/

There is evidence that Darwin deliberately avoided a discussion of man in the *Origin* as being too controversial. /77/ Recent publication of Darwin's M and N notebooks show that he had devoted much thought to the subject as early as 1837 and that such thinking had an impact upon the development of his theory. /78/ Despite Darwin's caution, the implications of the evolutionary doctrine for man, immediately became a topic for popular and scientific discussion. /79/

A common form that such discussions took was an attempt to show that man could not be descended from animals because of special spiritual, intellectual or moral qualities. Certain thinkers maintained that while man may have undergone some form of physical evolution, it was inconceivable that the soul, the intellect or the moral sense could have evolved in such a fashion. Writers were willing to note that the instincts of animals "simulate our reason" but felt assured that the difference in term ("instinct" vs. "reason") would vouchsafe the difference in kind. /80/

In the *Descent of Man* (1871) Darwin publicly denied the validity of any such distinction between animal and man. In this work, the principles of natural selection and sexual selection are applied to man
to account for man's descent from some pre-existing form, as well as the manner of man's development and the nature of the differences among races of men. All the conditions necessary for the operation of natural selection are found to be present in man:

Man incessantly presents individual differences in all parts of his body and in his mental faculties. These differences or variations seem to be induced by the same general causes and to obey the same laws as with the lower animals. In both cases similar laws of inheritance prevail. Man tends to increase at a greater rate than his means of subsistence, consequently he is occasionally subjected to a severe struggle for existence and natural selection will have effected whatever lies within its scope.

Darwin did admit that there was some difficulty in accounting for the high standard of man's intellectual powers and moral disposition. With regard to the former he pointed out that: "the intellect must have been all important to him, even at a very remote period as enabling him to invent and use language, to make weapons, tools, traps, &c." and he added that "the higher intellectual powers of man, such as those of ratiocination, abstraction, self-consciousness &c., probably follow from the continued improvement and exercise of the other mental faculties."

The moral qualities observed in man develop from the social instincts, including sympathy, according to Darwin. The moral sense, which is unique to man, follows, firstly from the enduring and ever present nature of the social instincts; secondly from man's appreciation of the approbation and disapprobation of his fellows, and thirdly, from the high activity of his mental faculties with past expressions extremely vivid.
While Darwin employed the term "instinct" rather loosely, his discussion of instincts showed that a mechanical basis could be found for some highly complex activities. The fact that an act displayed design or was well coordinated could no longer be regarded as sufficient grounds for asserting that consciousness or volition played a role in its guidance. In *Expression of the Emotions in Man and Animals* (1872) Darwin explicitly traced the continuity between animals and men in the expression of various emotions. Here he concluded that

The far greater number of the movements of expression and all the more important ones are, as we have seen, innate or inherited; and such cannot be said to depend on the will of the individual.

Such an interpretation becomes particularly striking when we consider that facial expressions are taken to be the signs of underlying emotions and play an important role in communication. In addition, they have all the marks of purposive acts: they display design, are well coordinated, and the intentions of the individual concerned are generally regarded as playing an important role in when and how they are emitted. Yet according to Darwin, such acts are not purposive, but are inherited patterns of response to particular stimuli.

Alongside accounts such as this, attempts to describe the actions of spinal animals as purposive must have appeared quite flimsy. More importantly, Darwin's account of purposive activity suggested that terms like consciousness and will that had been central in psychological explanations must be considered excess baggage in any truly scientific account. Any such account must steer away from intentionalistic descriptions of behavior. Darwin wrote:
In the course of the foregoing remarks and throughout this volume, I have often felt much difficulty about the proper application of the terms will, consciousness, and intention. Actions, which were at first voluntary, soon became habitual and at last hereditary and may then be performed even in opposition to the will. Although they often reveal the state of mind, this result was not at first either intended or expected. Even such words as that "certain movements serve as a means of expression" are apt to mislead, as they imply that this was their primary purpose or object. This, however, seems rarely or never to have been the case; the movements having been at first either of some direct use or the indirect effect of the excited state of the sensorium.

With man, as with animals, action frequently follows from the promptings of instinct rather than from rational judgement. The mental faculties of man cannot be regarded as different in kind from those of lower animals although they differ in degree. One ought to account for human behavior in the same way that animal behavior is accounted for—-as the outcome of patterns of behavior which presently have, or in the past had, survival value for the species.

For those who took Darwin seriously, the old methods and theories of psychology could no longer be regarded as adequate. And for many who opposed Darwin, no scientific treatment of "life", "mind" or "morals" seemed possible. We shall return to the opposition between these two points of view after examining the view of science and of consciousness propounded by Tyndall, Huxley and others.

**Thesis Stated: 1874 Papers and Their Background**

The precepts of naturalism were adopted by a group of British thinkers, foremost among whom were John Tyndall and Thomas Huxley. The naturalist position entailed a certain view of causal relations between mental and physical events. For those who took the principle of
conservation of energy seriously it followed that as psychical processes lack physical energy, such processes could in no way interrupt, direct or divert physical processes. Although such a view contradicted everyday experience in which interactions of body and mind are apparently commonplace, there was one philosophical account of the mind-body relation which "saved the appearances" while avoiding interactionism. This doctrine contended that mind and body move along in parallel streams. Psychophysical parallelism was espoused by Bain, Lewes, Spencer and the naturalists Tyndall and Clifford. 

Tyndall's 1874 address to the British Association and Clifford's 1874 paper "Body and Mind," together with Huxley's 1874 conscious automata paper constitute the official presentation of the naturalist program to the British public. Ironically, it was only Huxley, cheered on by Douglas Spalding, who espoused the epiphenomenalism that led so many to react against naturalism. Tyndall and Clifford's contributions consist of reiterating the scientific impossibility of any interaction between mind and body, the necessity for science to reject all metaphysics and the positing of a materialistically inclined phenomenalism. I will examine the views of Tyndall and Clifford before turning to Huxley's address.

John Tyndall

Although Tyndall's Presidential Address to the Belfast meeting of the British Association raised a storm of controversy, he was merely reiterating the same materialistically oriented phenomenalism he had outlined earlier in several articles. In an 1867 address to a group of
working men at Dundee, Tyndall had asserted the doctrine that our knowledge is limited to phenomena alone:

the mind of man may be compared to a musical instrument with a certain range of notes, beyond which in both directions we have an infinitude of silence. The phenomena of matter and force are within our intellectual range... But behind and above and around all the real mystery of the universe lies unsolved./92/

In an address to the British Association in 1868, the implications of this phenomenalism for the investigation of consciousness were drawn. In the first place, he pointed out that science viewed the relations of phenomena in a purely mechanical fashion:

The formation of a crystal, a plant or an animal is a purely mechanical problem which differs form the problems of ordinary mechanics in the smallness of the masses and the complexity of the processes involved./93/

However,

Associated with this wonderful mechanism of the animal body we have phenomena no less certain than those of physics, but between which and the mechanism we discern no necessary connection./94/

While the facts of consciousness appear to transcend the mechanical order, Tyndall wrote that it is extremely probable that, "for every fact of consciousness, whether in the domain of sense, thought or emotion, a definite condition of motion or structure is set up in the brain."/95/

He suggested that such a correspondence between states of the brain and states of the mind might help in removing some of the methodological problems involved in the study of consciousness:

The relation of physics to consciousness being thus invariable, it follows that, given the state of the brain, the corresponding thought or feeling might be inferred, or, given the thought of feeling the corresponding state of the brain might be inferred./96/
It was Tyndall's view that all we can ever know about the connection between mind and body is that they are two streams constantly conjoined. However, he added that those who wish to pursue the study of consciousness in a scientific manner should find this conjunction methodologically useful.

In the Belfast Address he reiterated his views concerning the character of science and more explicitly traced out its implications for our view of life./97/ The first section of the address traced the history of the doctrine of atomism as held by the Greeks. Tyndall, following Lange, equated the development of this doctrine with the development of scientific thought. After the Greeks, he argued, science lay fallow due to the strangehold of the church on all intellectual thought./98/ During this period there was a tendency to eschew mechanical accounts and physical causation in favor of theological accounts and moral causation. These latter forms of explanation are, in Tyndall's view, non-scientific. Bishop Butler's account of the immortality of the soul was examined to demonstrate the non-scientific character of views that maintain that there is a creative or living power which operates above and beyond physical force. Against those who argue that consciousness merely plays on the body like a telegraph operator employs his key, Tyndall pointed out that consciousness cannot survive the destruction of its instrument. He asked, "What is there... in the human system that answers to this conscious survival of the operator when the battery of the brain is so disturbed as to produce insensibility, or when it is destroyed altogether?"/99/ The attempted analogy can not work; consciousness is not an independent
executor of functions.

In fairness to the views of Butler, Tyndall did concede that there was some difficulty in conceptualizing how consciousness might arise from the clash of atoms; how sensation, thought and emotion might arise from a purely mechanical act. He asserted, however, that to attempt to solve these perplexing issues would lead us beyond the legitimate boundaries of scientific inquiry. Furthermore, to reject the mechanical account is to reject the entire magnificent edifice of science.

Tyndall also discussed evolutionary theory as expounded by Darwin and Spencer with an eye to showing how modern science approaches phenomena which seem to require teleological explanations. Darwin's work, in which careful attention was paid to processes that display the highest degree of design was cited in order to show that it is the mind thus stored with the choicest materials of the teleologist, that rejects teleology seeking to refer these wonders to natural causes. They illustrate, according to him, the method of nature, not the "technic" of a man-like artificer.100/

Spencer's account of inherited experience was presented to account for the evolutionary development of man's intelligence. Tyndall wrote that man, like animals, "carries with him the physical texture of his ancestry, as well as the inherited intellect bound up with it."101/ It is this inherited intellect, Tyndall claimed, which provides the basis for man's faculty of understanding.

Evolutionary theory also teaches us to trace back the line of development in order to seek the origin of things. It was Tyndall's view that as the line of life is traced backward it approaches more and
more "to what we call physical condition." He said,

Abandoning all disguise, the confession that I feel bound to make before you is that I prolong the vision backward across the boundary of the experimental evidence and discern in that matter, which we in our ignorance, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the promise and potency of every form and quality of life./102/

It was probably this passage which drew the most fire from Tyndall's opponents. Yet Tyndall carefully avoided "rank materialism" by asserting the mystery of all that lies beyond the phenomena. Tyndall's underlying aim in this address was to warn people of the intellectual dogmatism and intolerance found in the Church and the consequences of such attitudes for science. He asserted that the proper sphere of religious sentiment is the region of emotion and that it ought not to intrude on the region of knowledge./103/ Science, he claims, has the sole and indisputable right to investigate all questions stemming from the understanding:

The impregnable position of science may be described in a few words. All religious theories, schemes, and systems, which embrace notions of cosmogony, or which otherwise reach into its domain, must, in so far as they do this, submit to the control of science, and relinquish all thought of controlling it./104/

William K. Clifford

This view of the proper domain of science was held by all three of the representatives of the doctrine mentioned here. In the paper "Body and Mind," Clifford asked rhetorically, "What is the domain of Science?" and quickly answered, "it is all possible human knowledge which can rightly be used to guide human conduct."/105/ In a more poetic vein he stated,

It is idle to set bounds to the purifying and organizing work of science. Without mercy and without resentment she ploughs up
Clifford focused on the question of whether a bridge can be constructed between physical facts (both organic and inorganic) on the one hand, and the facts of consciousness on the other. After reviewing what is characteristic of facts in each of these realms, he pointed out that the evidence suggests that physical facts and the facts of consciousness are parallel to one another, although not in one-to-one correspondence,

every fact of consciousness is parallel to some disturbance of nerve matter, although there are some nervous disturbances which have no parallel in consciousness, properly so called, that is to say, disturbances of my nerves may exist which have no parallel in my consciousness./107/

Moreover, these physical trains can be fully accounted for by mechanical conditions and the mind has no causal impact on them. Clifford wrote: "The physical facts go along by themselves and the mental facts go along by themselves. There is a parallelism between them, but there is no interference of one with the other."/108/ In Clifford’s view, it is sheer nonsense to speak of the will influencing matter for, "the only thing which influences matter is the position of surrounding matter or the motion of surrounding matter" and "the will is not a material thing, it is not a mode of material motion."/109/ Our bodies, then, can be regarded as physical machines which are automatic. Clifford noted that

An automaton is a thing which goes by itself when it is wound and we go by ourselves when we have food. Excepting the fact that other men are conscious, there is no reason why we should not regard the human body as merely an exceedingly complicated machine which is wound up by putting food into the mouth. But it is not merely a machine because consciousness goes with
He reiterated this point stating:

we are more than automata because we are conscious; mental facts go along with the bodily facts. That does not hinder us from describing the bodily facts by themselves and if we restrict our attention to them we must describe ourselves as automata./111/

In returning to the question of bridging the realms of mind and body, Clifford made several points. In the first place, if we accepted the doctrine of evolution and traced back the physical origins of life, we are obliged to assume, in order to save continuity in our belief, that along with every motion of matter, whether organic or inorganic, there is some fact which corresponds to the mental fact in ourselves./112/

Thus there is a thoroughgoing parallelism between matter and something like mind throughout the universe. Clifford used this fact, in conjunction with Helmholtz's representational theory of perception, in order to maintain that (noumenal) reality has a character similar to what we know as mind. He says,

My [mental] picture is made up of exceedingly simple mental facts, so simple that I only feel them in groups . . . . I am therefore to conclude that the real thing which is outside me and which corresponds to my picture is made up of similar things; that is to say, the reality which underlies matter, the reality which we perceive as matter, is that same stuff which being compounded together in a particular way produces mind./113/

Clifford went beyond the phenomenal realm to posit an underlying reality from which both matter and consciousness were derived./114/ The parallelism of mind and body is in this fashion "explained," for matter is merely the phenomenal form of a reality represented in mind.
Insofar as we are doing science, that is, insofar as our concern is with phenomenal objects, Clifford's position did not differ from Tyndall's. However, Clifford's philosophy of science does differ somewhat from Tyndall's. Both can be regarded as positivistic in rejecting metaphysics, although Clifford carried this positivism somewhat further than Tyndall. Clifford applied the analogy of evolution to knowledge, pointing out that science had arrived at no final truths and that we must regard all knowledge as having a probabilistic character. However, thus far, Clifford stated, the weight of evidence is in favor of the view that (1) there can be no consciousness apart from a nervous system and (2) consciousness cannot play a role in influencing physical processes. The doctrine of mind-stuff is equally tentative, but if supported would strengthen the case for (1), as the supposition of mind without brain would then be contradictory.

While Clifford was cautious about asserting that matter produces mind, Tyndall claimed that we could have no grounds for such a conclusion. Huxley however, threw his phenomenalist caution to the wind, and asserted outright that nervous processes produce conscious states. This view--coupled with the denial that consciousness can have any effect on nervous processes, a view he shared with Tyndall and Clifford--completed the shift from psycho-physical parallelism to epiphenomenalism.
Huxley's paper, which stimulated the greatest amount of controversy among those concerned with psychological matters, was presented along with Tyndall's at the Belfast meeting of the British Association. As with Tyndall's paper, intimations of the doctrine can be found in Huxley's earlier addresses. Before presenting a detailed account of Huxley's talk it is worth looking briefly at these earlier papers.

**Early Papers**

In his paper "On the Physical Basis of Life," (1868) Huxley advocated the materialistically inclined phenomenalism he acquired from Lange. While claiming that protoplasm is a compound of the inorganic materials carbon, hydrogen, oxygen and nitrogen, he asserted,

Protoplasm, simple or nucleated, is the formal basis of all life. It is the clay of the potter, which, bake it and paint it as he will, remains clay, separated by artifice and not by nature, from the commonest brick or sun dried clod.

While admitting that the terms of the proposition were materialistic, he claimed, à la Lange, "that I, individually am no materialist, but on the contrary believe materialism to involve grave philosophical error." And as solace for those frightened by the bogeymen of materialism and determinism, he asserted that matter is merely "a name for the unknown and hypothetical cause of states of our own consciousness." He added that the
dire necessity and "iron" law under which men groan... [are] Truly, most gratuitously invented bugbears... Fact I know, and Law I know; but what is this Necessity save an empty shadow of my own mind's throwing.
While Huxley disclaimed the metaphysical position of materialism, he followed Lange in contending that the adoption of "methodological materialism" will be beneficial to science:

With a view to the progress of science, the materialistic terminology is in every way to be preferred. For it connects thought with the other phenomena of the universe, and suggests inquiry into the nature of those physical conditions, or concomitants of thought, which are more or less accessible to us, and a knowledge of which may, in future, help us to exercise the same kind of control over the world of thought, as we already possess in respect of the material world, whereas, the alternative, or spiritualistic terminology is utterly barren and leads to nothing but obscurity and confusion of ideas./125/

To cap this off he said,

there can be little doubt that the further science advances, the more extensively and consistently will all the phenomena of Nature be represented by materialistic formulae and symbols. But the man of science, who, forgetting the limits of philosophical inquiry slides from these formulae and symbols into what is commonly understood by materialism, seems to me to place himself on a level with the mathematician, who should mistake the x's and y's with which he works his problems, for real entities--and with this further disadvantage, as compared with the mathematician, that the blunders of the latter are of no practical consequence, while the errors of systematic materialism may paralyse the energies and destroy the beauty of a life./126/

This paper created quite a stir./127/ In 1870, he delivered his address, "On Descartes' Discourse" which traced back the doctrines expounded in "Physical Basis of Life" to Descartes./128/ We already know that Huxley claimed that Descartes' physiology led straight to materialism./129/ In this address he traced out the implications of this view. Huxley wrote:

I hold, with the Materialist, that the human body, like all living bodies, is a machine, all the operations of which will, sooner or later, be explained on physical principles. I believe that we shall, sooner or later, arrive at a mechanical equivalent of consciousness, just as we have arrived at a mechanical equivalent of heat./130/
Huxley reiterated the creed which was to become very familiar to readers of his later work:

I am prepared to go with the Materialists wherever the true pursuit of the path of Descartes may lead them, and I am glad, on all occasions to declare my belief that their fearless development of the materialistic aspect of these matters has had an immense and a most beneficial, influence upon physiology and psychology. /131/

Caught up in the spirit of the doctrine, he continued:

Nay, more, when they go farther than I think they are entitled to do—when they introduce Calvinism into science and declare that man is nothing but a machine, I do not see any particular harm in their doctrines, so long as they admit that which is a matter of experimental fact—namely that it is a machine capable of adjusting itself within certain limits. /132/

The passages I have quoted should provide some indication of Huxley's skill as an orator and his cleverness as a rhetorician. These talents were called into further play in his 1874 paper, to which we now turn.

1874 Paper

Huxley introduced his paper by enumerating the ways in which Descartes had anticipated modern physiological doctrines. Various views on the nervous system, including his anticipation of the doctrine of reflex action, were cited. /133/ Most important, for Huxley's purposes, was Descartes' belief that many actions of living beings were mechanical; requiring the intervention of neither consciousness or volition. This, coupled with his belief that animals lack consciousness, led Descartes to the view, that animals are absolute machines . . . that they have no feelings; that a dog does not see and does not hear and does not smell, but that the impressions which would produce those states of consciousness in ourselves give rise in the dog, by a mechanical reflex process, to actions which correspond to those
... which we perform when we do smell, do taste, and do hear./134/

In the remainder of the paper, Huxley examined this hypothesis of animal automatism in the light of contemporaneous physiological evidence, revising and extending it where appropriate.

In support of the doctrine, he cited Goltz's work on frogs which demonstrated that highly complex and apparently purposive activities can take place in the absence of sensibility./135/ Further support was provided by the case of a French soldier who received head injuries during the Franco-Prussian War. While the soldier apparently recovered from the wound, periodically he would go into an "abnormal state" in which he is
to all appearances just the same man as before, goes to bed and undresses himself, gets up, makes his cigarette and smokes it, and eats and drinks. But he neither sees, nor hears, nor tastes, nor smells, nor is he conscious of anything whatever, and he has only one sense organ in a state of activity, namely, that of touch which is exceedingly delicate . . . His action is purely mechanical . . . [he] is in a condition absolutely parallel to that of the frog I "have just described./136/

The fact that very complex actions can be performed by such an individual in the absence of consciousness, Huxley argued, enhances the plausibility of Descartes' doctrine that animals are mere insensate machines and suggests that Descartes' doctrine may also be applicable to humans. Huxley, however, qualified Descartes' doctrine. Various considerations, he said, lead us to regard it as more likely that animals have consciousness than that they lack it. The principle of continuity and the doctrine that function follows structure, should lead us to conclude that

the lower animals, although they may not possess that form of consciousness which we have ourselves, yet have it in a form proportional to the comparative development of the organ of
consciousness, and foreshadow more or less dimly those feelings, which we possess ourselves./137/

While we may disagree with Descartes' conclusion concerning animals lack of consciousness, Huxley wrote, we cannot dispute the fact that their actions are mechanical. Therefore,

although we may come to the conclusion that Descartes was wrong in supposing that animals are insensible machines, it does not in the slightest degree follow that they are not sensitive and conscious automata./138/

and

although they are sensitive and although they are conscious, yet they act mechanically, and ... their different states of consciousness, their sensations, their thoughts (if they have any), their volitions (if they have any) are the products and consciousness of their mechanical arrangements./139/

Huxley recognized that the positing of consciousness in animals made it somewhat more difficult to maintain that their actions are wholly mechanical. If consciousness is present, why shouldn't it play a role in directing and guiding these actions?/140/ Here Huxley cited what was known about the nervous system in order to maintain that action can, indeed must, proceed in a wholly mechanical fashion even in the presence of consciousness. He wrote:

We are bound by everything we know of the nervous system to believe that when a certain molecular change is brought about in the central part of the nervous system that change, in some way utterly unknown to us, causes that state of consciousness that we term a sensation ... . The sensation, which has passed away leaves behind molecules of the brain competent to its reproduction "sensigenous molecules" so to speak - which constitute the physical foundation of memory. Other molecular changes give rise to conditions of pleasure and pain, and to the emotion, which in ourselves we call volition. I have no doubt that this is the relation between the physical processes of the animal and his mental processes. In this case it follows inevitably that these states of consciousness can have no sort of relation of causation to the motions of the muscles of the body. The volitions of animals will be simply states of emotion which precede their actions./141/
The last passage indicates the difference between Huxley's position and that held by Tyndall and Clifford. Parallelism was implicitly rejected by Huxley, for he believed we have evidence for a one way causal connection between body and mind./142/ Molecular changes in the nervous system produce the states of consciousness we call sensations. However these states of consciousness lack causal efficacy; they are incapable of producing any changes in the nervous system./143/

Huxley, thus far, had restricted the applicability of the doctrine to animals. However, as he pointed out to the audience, there will be those who will say,

that my intention in bringing this subject before you is to lead you to apply the doctrine I have stated, to man as well as brutes, and it will then certainly be further asserted that the logical tendency of such a doctrine is Fatalism, Materialism and Atheism./144/

He replied to such anticipated criticism noting that

logical consequences are very important; but in the course of my experience I have found that they are the scarecrows of fools and the beacons of wise men. Logical consequences can take care of themselves. The only question for any man to ask is - "Is this doctrine true or is it false?"/145/

He further asserted:

Undoubtedly, I do hold the view that I have taken of the relations between the physical and mental faculties of brutes applies in its fulness and entirety to man, and if it were true that the logical consequences of that belief must land me in all those terrible consequences I should not hesitate in allowing myself to be so landed./146/

However, Huxley had several safety nets already drawn out. His phenomenism enabled him to avoid materialism; a Hobbesian notion of freedom enabled him to avoid fatalism; and his "agnosticism" allowed him to avoid atheism./147/ These positions allowed him to qualify the above
assertion and he stated

now I beg leave to say that in my conviction there is no such
logical connection as is pretended between the doctrine I accept
and the consequences which people profess to draw from it. /148/

As we will see, not everyone saw these matters in the same light as
Huxley. Huxley's phenomenalism was echoed by a contemporary, Douglas
Spalding. /149/ Spalding had been a student of Bain who took issue with
the latter's account of animal instinct as the resultant of learning and
imitation. /150/ This dispute led him to conduct a series of studies on
animals in order to demonstrate that various behaviors they displayed
were unlearned—the outcome of instinct and/or maturational
processes. /151/

Spalding took exception to other views expressed by Bain including
the view of the mind-body relation expounded in Bain's 1872 work Mind
and Body. Spalding pointed out, in a review of that work published in
Nature, that Bain was inconsistent in his espousal of psycho-physical
parallelism. /152/ These inconsistencies, he wrote, were evident in
Bain's statement that voluntary movements "take their rise in Feeling
and are guided by Intellect." This statement, Spalding remarked, implies
the position of interactionism. Spalding asked, "In what sense can a
particular class of movements be said to take their rise in the mental
series which runs parallel to, without forming part of, the physical
series?" /153/ He demanded of those who hold such a view that they
show, if they can, that they have any better ground for their
opinion that voluntary movements take their rise in feeling and
are guided by intellect, than a superficial observer ignorant of
the construction of the steam engine might have for a belief
that the movements of a locomotive take their rise in noise and
are guided by smoke. /154/
Following Huxley's speech, Spalding quickly jumped into the fray and pointed out that Huxley's message was the same one he had been urging on the public for years./155/ For those who may have misunderstand the doctrine he provided the following précis:

All the conscious so-called voluntary actions of men ... are purely automatic, that is, ... consciousness, while it accompanies the workings of the animal machine, never stands in a causal relation to any movement whatever, ... no movement ever was the result of a state of consciousness, ... every movement is the result of physical antecedents which, being present, the movement must of necessity follow, and ... in this physical chain there is no break whatever./156/

He reiterated this précis in a review of Sully's *Sensation and Intuition* and remarked

That Prof. Huxley's bold advocacy of this view at the recent meeting of the British Association has not called out more angry criticism is surely a most hopeful sign of the times./157/

Spalding spoke too quickly, for criticism of Huxley, both angry and erudite, was shortly to arrive. Before turning to critiques of the position I should point out that both Huxley and Spalding were overstepping phenomenalist boundaries in claiming that bodily states produce conscious states. Both violated the phenomenalist account of causality which asserts only that there is an invariable sequence between neural events and conscious states. On such a account we have equal grounds for claiming that conscious states cause neural events, as we have for the converse. Each claimed that the neural events produce consciousness and rejected causation in the other direction (presumably because it would violate the principle of conservation of energy.)/158/ Tyndall recognized this violation of scientific principle:

it is, I believe, admitted by those who uphold the automaton theory, that states of consciousness are produced by the
marshalling of the molecules of the brain, and this production of consciousness by molecular motion is to me quite as inconceivable on mechanical principles as the production of molecular motion by consciousness. If therefore I reject one result, I must reject both. I however, reject neither and thus stand in the presence of two incomprehensible instead of one incomprehensible./159/

The public, however, showed itself to be more interested in reacting to these alarming results than in pondering incomprehensibles. The reactions to these papers were widespread and the resulting debates dealt with a broad range of issues. Philosophically oriented combatants focused on what ought to be regarded as the proper domain of science and how matter should be conceptualized./160/ As Huxley had predicted, the popular response focused on the ethical implications of the doctrine. There was widespread concern about the bearing of this thesis on the assumption of individual ethical responsibility./161/ Many of the issues raised had a bearing on the fledgling science of psychology.

The legitimatization of a non-interactionist view of mind and body raised a host of issues concerning the scope and proper method for the new science. The parallelism espoused by Tyndall and Clifford had already been adopted by many psychologists during the period./162/ However these thinkers still believed that it was legitimate, indeed necessary, to examine relations among mental phenomena. The reductionistic methodology advocated by Tyndall, Clifford and Huxley encouraged these thinkers to eschew the examination of mental phenomena in favor of an examination of objective, controllable, quantifiable neural events./163/
On Huxley and Spalding's epiphenomenalist position a strong case could be made against the possibility of a science of mind./164/ Since mental states were just the ephemeral by-products of bodily changes there could be no point in examining them since it would be comparable to the attempt to learn about the workings of a locomotive by studying only the noise and smoke it gives off./165/

Many individuals grappled with these problems in the debates which followed publication of these papers. In addition, issues were raised about specific phenomena which psychology had undertaken to investigate, particularly the phenomena of voluntary action and consciousness. It was in voluntary activity that the closest relations of mind and body were observed. The automata thesis made it impossible to speak of voluntary action in the manner in which psychologists had previously done (i.e., as feeling prompted action.) Yet the phenomenon of voluntary control, presumably exerted by will, was too compelling and too important to brush aside. The debate also raised questions as to whether distinctions could be drawn among various forms of involuntary behavior—instincts, reflexes, automatisms.

Both parallelism and epiphenomenalism carried implications for views of consciousness. Neither position denied that it existed, but both rendered it inefficacious. However, if consciousness had no function these thinkers were hard to put to account for its evolutionary development. Furthermore, if it is the case, as the parallelists claim, that mind is invariably paired with body, then some acts of the body of which we are not aware must carry with them a different form of mind.
Psycho-physical parallelism seems to open the way for a notion of unconscious functioning. With these issues in mind let us turn to a discussion of responses to the debate by William Carpenter, George Henry Lewes and William James.

Representative Responses to the Thesis

William Carpenter

The fourth edition of Carpenter's Mental Physiology (1876) contained a preface examining the doctrine of human automatism. Carpenter identified Tyndall, Clifford and Huxley as automatists on the grounds that they asserted that the will could have no effect on states of the body. Carpenter was, of course, a dualist and an interactionist who maintained that there is a category of volitional activity unique to man. As this activity presumably served to set man apart from other animals, Carpenter had little patience with those who denied that there can be any such activity. The arguments of the automatists, particularly those presented by Huxley, were carefully scrutinized in this preface.

Whereas Tyndall took Huxley to task for his claim that the body produced states of consciousness, Carpenter applauded it. Not only do bodily states produce states of consciousness, Carpenter argued, but certain states of consciousness produce movements. The will, aided by attention, serves an executive function, selecting from among the ideas present to the mind the particular ones that will issue in action.
Carpenter argued that the evidence we have for the efficacy of will is of a higher order than any evidence we could have for physical causation. It is the direct evidence of consciousness he wrote that testifies to the efficacy of will, whereas the efficacy of matter must be inferred from evidence. In all cases, Carpenter said, direct evidence is to be preferred to indirect.\textsuperscript{169/}

Obviously not everyone shared Carpenter's faith in the direct testimony of consciousness. For those who required further evidence he pointed out that the efficacy of the will is assumed in our linguistic practices and in much that underlies our social order. The meaning we ascribe to the terms "choice," "ought," "duty," "individual responsibility," and "self control," all rest upon the assumption that the individual has some power of determining thoughts and actions.\textsuperscript{170/} The lack of development and exercise of such a power in weak characters such as alcoholics, can only serve to strengthen our conviction that such a power is potentially within the reach of all.\textsuperscript{171/} Here Carpenter placed his finger on a core problem. Advocates of a scientific psychology had argued that it could improve ethics and provide aid in solving social problems. Yet here was a "science of man" that obliterated the very characteristics of mind that were regarded as necessary for morality and social progress.

Adopting another line of attack, Carpenter criticized the interpretation Huxley gave to his evidence for the automaton thesis. While certain actions such as the ones cited may no longer require the guidance of consciousness, Carpenter argued that that does not prove
that it was never necessary for their execution. In many of the cited
by Huxley, the automatic, activity is secondarily automatic, and
the fact that various actions have become so familiar to me by
habit as to be performed automatically, affords no real
contradiction to the testimony of my own Consciousness, that
when I was first trained (or was training myself) to execute
them, my Will issued the mandates which were carried into effect
by my muscles. /172/

It is clear that Carpenter, like many others who were alarmed by
the thesis, was concerned with the moral implications of Huxley's views.
Carpenter felt that we must to maintain certain standards of morality
and this can only be done by recognizing that each individual carries
within him a power of self-determination. For Carpenter, attention was
the vehicle of this power. We shall see that this construct played an
important role in the theories of other thinkers opposed to the
automaton doctrine. /173/

George Henry Lewes

George Henry Lewes selected the doctrine of animal automatism as
one of four problems (including reflex action) for further investigation
in The Physical Basis of Mind. /174/ Like Carpenter, Lewes rejected a
dualistic parallelism, but unlike Carpenter this position stemmed from
Lewes' rejection of dualism. Lewes opted instead for a monism in which
mental and the physical manifestations were regarded as two aspects of a
single underlying reality. /175/ This position led Lewes to criticize
the philosophical assumptions underlying the automaton thesis.
In the first place the rejection of dualism quickly dissolved a large number of issues which appear problematic, such as "How can matter think?" and "How can mind act on matter causing motion?" Mind and matter, according to Lewes, are merely modes of feeling classified differently. It was this classification system which, in referring some feelings to the objective realm and some to the subjective realm, led to apparent difficulties in specifying how "mind" and "matter" are related. Lewes argued that these difficulties are enhanced by science, which must work with the abstractions that result from these classifications. As these abstractions--"mind" and "matter"--differ in character, they require different methods of treatment. The abstraction we know as "matter" is amendable to a quantitative treatment, which is not appropriate for other abstractions. The biological sciences and psychology work with abstractions such as "life" and "mind," which are based on varied and fluctuating feelings and which, therefore, have primarily a qualitative character. These sciences must, therefore, be sciences of classification, not of measurement. Mechanical explanation is limited to the sciences of measurement.

Lewes employed this philosophy of science in order to criticize the line of reasoning taken by automata theorists. With these theorists, Lewes claimed,

mental facts of irresistible certainty [are] interpreted by material hypotheses of questionable value . . . and a higher validity is assigned to the material hypotheses than to the facts they are invented to explain.
If these thinkers would simply remember that they were dealing with abstractions, Lewes wrote, there would be no need for them to reify one set of facts at the expense of another. Body and mind are merely two aspects of the same process and neither domain has any superiority in explanatory status.

More specific criticisms of the doctrine followed, based upon Lewes' broader definition of consciousness and on his view of its location in the nervous system and the role it plays in reflex action. He began by summarizing Huxley's position, in the form of the following five theses:

(1) There can be no sensation without consciousness.

(2) There can be no consciousness without the cooperation of the brain.

(3) Sensation and consciousness are in some inexplicable way caused by molecular changes in the brain, following upon these as one event follows another, the causal link between motion and sensation being a mystery.

(4) All actions which take place unconsciously are reflex and reflex actions are the operation of an insentient mechanism; they are therefore as purely mechanical as those of automata.

(5) The animal body is a reflex mechanism; even when the brain co-operates with the other centres, and produces consciousness, this product is not an agent in determining action, it is a collateral result of the operation./179/
Lewes' objections to Huxley's view were directed specifically to Theses 1, 2, 4 and 5. In the first place, he argued, we need a broader notion of consciousness. Consciousness is but a special mode of sentience, which encompasses the entire feeling capacity of the organism./180/ Once we are aware of this broader notion of consciousness, it becomes absurd to maintain (as in Thesis 2) that the brain is its necessary substrate. Sentience permeates the entire nervous system./181/

This doctrine implies that no reflex act is ever entirely mechanical; all are sentient and so all are organical. Lewes concluded that as sentience is necessary for reflex action, sentience, (including its special mode consciousness) must have causal efficacy./182/

In the light of this argument he re-examined the evidence presented by Huxley. In neither of these cases (the frog and the French Soldier) is feeling wholly absent./183/ Lewes maintained that the feedback provided by the sensory mechanisms still operated and played a crucial role in guiding the performance of the so-called automatic actions. He wrote,

their actions exhibit the clearest evidence of sense guidance and the kind of volition which this sense guidance implies; and this is quite enough to separate them from actions of automata./184/

Here Lewes was identifying the essential role played by feedback mechanisms in the guidance of action. During the nineteenth century such feedback loops in behavior provided a clear distinction between the activity of living organisms and the actions of machines./185/ Lewes concluded that we must ascribe precisely the same degree of causal
efficacy to consciousness as we ascribe to matter.

We must declare consciousness to be an agent in the same sense that we declare one change in the organism to be an agent in some other change. The facts are the same, whether we express them in physiological or in psychological terms. The physiologist, having only the material aspect of the organism in view says, "A cerebral process initiates a motor process"; the psychologist says "A sensation determines action."/186/

Very few adopted Lewes' conception of consciousness. Many, however, were to agree with his conclusion that we must attribute efficacy to consciousness. We turn now to the best known proponent of this view, William James.

William James

William James' article "Are We Automata?" and the chapter in the Principles of Psychology based on this article are probably the best known responses to the automaton theorists./187/ James claimed that the automatists' postulation of an absolute chasm between mind and body, rested solely on aesthetic grounds. On different aesthetic grounds, he asserted, we might maintain that everything in the world is interlocked in bonds of action and reaction./188/

James urged this perspective on his readers, bolstering its attractiveness with a priori and a posteriori evidence. Why, he asked, might consciousness be useful to the organism? His reply was based upon two assumptions: (1) that the organic substrate of the brain is unstable and indeterminate and (2) that consciousness involves selective and suppressive functions. He employed these assumptions to argue that consciousness and the brain could interact in order to serve the organism's best interests. His argument is worth reviewing.
James maintained that the human brain, as a physical machine, is characterized by an inherent instability. This instability has benefits, as evidenced by the ability of higher animals to adapt effectively to changing environments. On the other hand, such sensitivity to minute changes in the environment, renders the action of the brain indeterminate. The natural law of the brain is one of caprice./189/

Under such conditions we must wonder how the organism is ever able to function in its own best interests, which it must do in order to survive. Enter consciousness. Consciousness "loads the dice"--to use James' phrase--of the physical machine thus increasing the brain's efficiency and ensuring its survival. Consciousness, therefore, may have some utility for the organism./190/ James also argued that the functioning of an active, selecting consciousness, ought to increase the efficiency of the process of natural selection. Consciousness may aid in decreasing the amount of time needed for natural selection to take place./191/

James' real case against the automaton theorists was not built on the above arguments, but instead upon "fragmentary probabilities supported by the study of details."/192/ He argued that there are numerous experiences that attest to the fact that consciousness is distributed so as to be beneficial to the functioning of the organism. In the first place, consciousness is at its most intense level when nerve processes are retarded or hesitant, and it is at a minimum level when nerve action is rapid or certain./193/ In addition, our feelings
of pleasure and pain seem to be distributed in a manner that suggests that they are efficacious. For the most part, pleasures are associated with consequences beneficial to the organism, and pains with consequences detrimental to the organism. Such an arrangement seems unlikely to have developed by chance and, therefore, suggests strongly that these feelings do have efficacy./194/

Finally, James discussed the phenomena of vicarious functioning which he interpreted as providing evidence that our actions are guided by feelings of purpose. He pointed out that if we throw out parts of a machine it becomes an entirely different machine, no longer capable of performing the same functions. On the other hand, when we remove parts of the brain, it exhibits a wonderful power of self adjustment. For a short time it may function in a completely "abnormal manner," but after awhile the altered "machine" recovers its old modes of functioning. Such adaptivity appears inexplicable on mechanical principles./195/

James did not maintain that his arguments were conclusive against the automaton theorists. But neither, he said, are their arguments conclusive in favor of that doctrine./196/ James, like Carpenter and Lewes, appealed ultimately to common sense, which obstinately refuses to believe consciousness irrelevant or unimportant to the rest. It is there for a purpose, it has a meaning. But as all meaning, relevancy and purpose are symbolised to our present intelligence in terms of action and reaction and causal efficacy, Common Sense expresses its belief in the worth of Feeling by refusing to conceive of it out of these relations./197/

With regard to the truth value of the automatist's conception, James wrote:

I hold that we are incurring the slightest error by still regarding our conscious selves as actively combating each for
his interests in the arena and not as impotently paralytic spectators of the game. /198/

The responses of these three authors are important for several reasons. First of all, they indicate that the pronouncements of Tyndall, Clifford and Huxley created enough of a stir to evoke rebuttals from some of the foremost intellectuals of the period. Secondly, these rebuttals considerably weaken the case made for the thesis, particularly the form of the argument developed by Huxley. Third, all imply that science has limits, that scientific concepts provide only one way of looking at the world, and that the concepts themselves may shift in meaning. All three imply that there are good reasons to opt for a world view that retains the notions of purpose and value.

All three of these thinkers argued that immediate experience provides us with convincing evidence of the efficacy of consciousness. All three of them went beyond this assertion, pointing out weaknesses in the evidence presented by Huxley and presenting alternative evidence. Carpenter contended that the activity cited by Huxley was not original, but acquired automatic activity and he maintained that volition played an important role in the acquisition of such activity. Lewes argued that this activity is not wholly mechanical because it is carried out with the aid of sense guidance. James, focused on an alternative account of action and presented evidence suggesting that consciousness does play a role in directing bodily events.

The fact that these three thinkers quite likely would not have agreed with one another's view, indicates that a wide range of responses to the thesis existed.
Summary

The conscious automaton thesis as presented in the writings of Tyndall, Clifford, Huxley and Spalding presented an alarming prospect. As William James described it:

The theory maintains that in everything outward we are pure material machines. Feeling is a mere collateral product of our nervous processes, unable to react upon them any more than a shadow reacts on the steps of the traveller whom it accompanies. Inert, uninfluential, a simple passenger in the voyage of life, it is allowed to remain on board, but not to touch the helm or handle the rigging. /199/

This view of mental functioning was rejected outright by Carpenter, Lewes and James. Carpenter argued that we have first-hand evidence of the causal efficacy of the will and that such efficacy is presupposed by common morality. Lewes argued that feelings play a crucial role in the guidance of all action, including so-called automatic actions. And James turned the evolutionary tables against the automaton-theorists. He pointed out that a valid principle of evolution states that characteristic that survive must have some functional value. And he argued that there is a great deal of evidence for the adaptive value of consciousness.

Carpenter's response bears most closely on the thesis of this dissertation. Fundamentally he was arguing that "scientific" evidence does not always have a privileged status. In some cases the direct evidence of consciousness must be regarded as a higher authority. Furthermore, scientific accounts must yield if they clash with important assumptions underlying acceptable and accepted social practice. According to Carpenter, the assumption that individuals have the power
to determine thoughts and actions underlies morality. He clearly believed that common sense morality ought not be sacrificed to the supposed exigencies of a mechanistic science./200/

It is here that the implications of the automaton thesis for the Utilitarian-Associationist program become clear. An essential part of this program was establishing a science of ethics that could serve as the basis for a doctrine of individual moral responsibility. These thinkers, including Bain, argued that a scientific psychology must underlie the development of such a theory. To be scientific psychology must be fully deterministic, i.e., it must identify all the conditions determining thought and action. Now, unlike the automaton theorists, Bain denied that consciousness was inert and uninfluential. He wrote:

Consciousness is a requisite of acquired powers; by it we are learners from experience, and not mere machines performing an ingrained and routine part... intensified consciousness hastens permanent impressions and the education resulting therefrom./201/

On the other hand, Bain depicted will as "a machinery of detail."/202/ Like others in the Utilitarian-Associationist tradition, Bain virtually emasculated the will in his account of volition. The individual only appears to determine thoughts and actions; the true determining conditions are past experiences embedded in the nervous system. It was this clash between Bain's account of will and the requirements of morality that brought associationism and utilitarianism into the fray resulting from the conscious automaton thesis.
Lewes' contention was somewhat different. He denied that we could draw a clear distinction between voluntary and involuntary forms of behavior and argued that both types of action involve "consciousness." In addition to highlighting the difficulties of distinguishing between voluntary and involuntary actions, Lewes' view considerably broadened the traditional (i.e., Utilitarian-Associationist) account of consciousness. This traditional view regarded consciousness as the "having of sensations," accompanied by the direct awareness that we have the sensation. Lewes' notion of sentience included the full range of consciousness from unconscious to subconscious to full consciousness./203/ Furthermore, this new view necessitated the abandonment of the atomistic account of the acquisition of knowledge held by those in the Utilitarian-Associationist tradition. Lewes said that acquisition can not be described in terms of the accumulation of the discrete bundles of sensation that we may become consciously aware of. Not all stimulation is conscious stimulation; and feeling and nervous excitation are not local but general in their effects. Lewes compared consciousness to "a mass of stationary waves." He wrote:

If the surface of a lake be set in motion, each wave diffuses itself over the whole surface, and finally reaches the shores, whence it is reflected back towards the centre of the lake. This reflected wave is met by the fresh incoming waves, there is a blending of the waves, and their product is a pattern on the surface. This pattern of stationary waves is a fluctuating pattern, because of the incessant arrival of fresh waves, incoming and reflected./204/

Lewes continued,

Whenever a fresh stream enters the lake (i.e., a new sensation is excited from without), its waves will at first pass over the pattern, neither disturbing it nor being disturbed by it; but after reaching the shore the waves will be reflected back towards the centre, and there will more or less modify the pattern./205/
In Chapters 7 and 8 we will see that other critiques led to a similar rejection of the atomism of the associationists and to a new, more wholistic view of mental functioning.

Like Carpenter, James questioned the privileged status of the scientific account proffered by the automaton theorists. By emphasizing other aspects of evolutionary theory, he was able to produce a plausible argument in support of his view that consciousness did have causal efficacy. But the real thrust of his argument lay in his defense of common sense views of the efficacy of consciousness against the scientific view. The automaton thesis, with its disavowal of the possibility of purpose and limitations upon morality called forth a reaction against science itself. Carpenter, James, and even Lewes, to some degree, treated scientific explanation as merely one of many possible accounts of human thought and action, and opted instead for common sense. Ironically, the neo-Kantian phenomenalism which first inspired Tyndall and Huxley, paved the way for this new view of the limits of scientific explanation.

For a number of reasons the debate died out in the early 1880's. The central proponents had issued their statements, and the central opponents had replied. The physiological and clinical evidence was somewhat ambiguous and could be cited in support of either side of the argument. Moreover, physiology and psychology were growing further apart as neurophysiology became more specialized, and there was a slightly reduced tendency to speculate upon the psychological bearings of physiological doctrines.
The debate resurfaced in the 1890's in a somewhat different form. Here the thrust of the attack was on the assumptions underlying the program of scientific naturalism. James Ward and several of the Oxford Idealists who had gathered around T. H. Green spearheaded this attack./209/ No longer was it a matter of simply rejecting the automaton thesis because of its scientific or moral implications. The automaton thesis was criticised as one aspect of a broader program attempting to produce a science of man. Ward argued that associationism and utilitarianism were the best known forms of the naturalist program in Britain and rejected both./210/ We will see that the reaction against the automaton thesis developed into a reaction against all forms of scientific naturalism including that propounded by the Utilitarian-Associationist tradition.

In describing the implications of the debate it will be useful to bear in mind that the response to the thesis varied according to the group involved. In the sections that follow, I will describe three aspects of this response. First, I will look at the popular response and reaction to the thesis, for it is here that the moral implications of the thesis were the focus. Second, I will briefly describe the impact of the debate upon developments in physiology and in psychology. Finally, I will examine the philosophical reaction to the debate including questions concerning the possibility of a science of man and revisions to the concept and hegemony of science itself.
Implications of the Debate

Popular Response and Reaction

There was a broad range of response to the thesis. Many rejected it outright, based simply upon their moral outrage. Others carefully examined the evidence and concluded that it could not support the argument. Still others accepted the thesis, or aspects of it, and attempted to show that it did not conflict with moral beliefs. In this section I will focus upon some papers that examined the moral and religious bearings of the thesis.

A series of articles on the thesis appeared in the Contemporary Review during 1875 and 1876. These articles critically examined principles underlying evolutionary doctrine and concluded that the strict doctrine of human automatism was not, and could not be, fully supported by evolutionary principles. The principle of continuity and the doctrine of the inheritance of acquired characteristics were the special targets of their attacks. One of these articles, while critical of the evidence for the automaton theory, concluded that the doctrine had positive implications for our view of man. We will see this view reiterated in other papers written during this period.

In the first article, St. George Mivart examined the principle of continuity and concluded that there was a difference in kind between brute and man, instinct and reason. He argued that the form of unconscious purposiveness that we observe in instinct is of a wholly different order than the purpose we observe in reason. Mivart appealed
to introspection which, he wrote, reveals that rational beings have (1) self-consciousness, (2) reason, (3) free will and (4) language. All these characteristics, he insisted, are missing from the "brute soul."/213/

On the other hand, Mivart noted that "instinct can do things impossible to Reason," and that certain non-deliberate forms of human action do resemble the operation of instinct./214/ Despite this he rejected the view—held by Spencer and Lewes—that instincts are the residue of prior purposive actions, i.e., that they represent secondarily automatic action./215/ This doctrine would abolish the distinction between instinct and reason that Mivart felt was sacrosant. In addition, it led to a number of dangerous and counterintuitive views.

Mivart described some problems with Spencer's position:

As, according to him, "Reason" is a "failure of Instinct"—an "imperfect adjustment of 'inner relations' to 'outer relations'," it must tend more and more to disappear. But will and memory are also represented by him as transient accompaniments of an incomplete state of such adjustment; and even "feeling" must also disappear, when the adjustment becomes perfect along with memory and reason. The highest mental condition, then, according to Mr. Spencer, would be one in which volition, intelligence, memory, and even feeling, have all disappeared in favour of a "perfect adjustment." In other words, the most highly-developed human being would be an absolutely senseless and unconscious automaton./216/

This quote clearly identified dangerous aspects of such views. Moreover, Mivart also pointed out that the view of instinct as "lapsed intelligence" is counter-intuitive because it implies that a higher faculty—reason—becomes replaced by a lower faculty—instinct—in the course of evolution. The proper order of evolution, according to Mivart, involves the evolution of reason from the materials provided by
Mivart's article is of interest because it linked Lewes and Spencer with the automatists. As we have seen, Lewes opposed the theory in its strict version. However, I don't think that Mivart was that far off the mark in linking the views of these two thinkers with the thesis. By stressing instinct and habit as the true foundations of our behavior, each thinker provided a view of man as functioning optimally when functioning automatically. A similar charge could, and was levelled against Bain's psychology, as we will see.

Charles Elam, in a three part article on "Automatism and Evolution," examined the evidence for the automaton theory in particular, and for the fundamental principles of evolution in general. Although he did not focus upon the moral implications of the doctrine he argued that these were not insignificant. He wrote:

If this doctrine, as now held by a large and powerful section of the scientific world, does indeed, as it professes, afford the only possible solution of the various problems of ontology, then it follows naturally and of necessity, that matter is all-sufficient, and that man is an automaton, "without spirit or spontaneity." Then is our immortality a dream; volition, choice and responsibility are mere delusions; virtue, vice, right and wrong, are sounds without possible meaning; and education, government, rewards and punishments, are illogical and mischievous absurdities. Let us eat and drink, for to-morrow we shall be carbonic acid, water and ammonia.

Given such consequences, he asserted, ascertaining the truth of the evolutionary doctrine (upon which the automaton thesis rested) is an important matter. Elam then proceeded to examine the evidence—observational, experimental and rational—for the view that
"man is but the product of the molecular forces of matter" and the mere result of "the interaction of organism and environment through cosmic ranges of time."/220/ The conclusion he reached was that the scientific evidence for evolutionary theory was extremely ambiguous and, therefore, the doctrine could not be said to be supported by either observation or experiment. But, he noted, this conclusion is no different from that drawn by the automaton theorists themselves. Tyndall, for example, had written that

those who hold the doctrine of evolution are by no means ignorant of the uncertainty of their data, and they only yield to it a provisional assent. They regard the nebular hypotheses as probable, and in the utter absence of any evidence to prove the act illegal, they extend the method of nature from the present into the past. Here the observed uniformity of nature is their only guide. Within the long range of physical inquiry, they have never discerned in nature the absence of caprice. Throughout this range, the laws of physical and intellectual continuity have run side by side./221/

In other words, the principle of continuity provided the strongest evidence for the theory of evolution. Elam argued that this principle could not suffice for Tyndall's purpose. Although Tyndall attempted to "prolong the vision backward across the boundary of experimental evidence and discern in ... matter ... the promise and potency of every form and quality of life," his actual evidence could not stand up to close scrutiny, according to Elam./222/ Elam pointed out that Tyndall's boundary was marked by an organism, the protogenes, which does not clearly represent "the purely physical condition." Elam wrote:

The protoplasm of the protogenes is, organically at least, as active as that of any other organism; its formation from inorganic matter equally defies our efforts; its functions are as incapable of expression by any physical formula./223/

Despite Tyndall's proclamation to the contrary, the breach between
inorganic and organic matter remained. The only true support for his argument was his faith that developments in chemistry might one day be able to bridge the gap./224/

The remainder of the article consists of Elam's attempt to demonstrate his own view that "the appearance of the earliest organic forms was attended by phenomena which admit of no explanation by any combination of inorganic forces," by showing that this is an assumption necessary to account for the phenomenon of life./225/

Elam concluded that, as the doctrine of evolution is so inherently weak, that the doctrine of automatism may be relegated to the domain of all such "figments of the imagination," and man may trust implicitly to the consciousness which tells him that he is no mere machine; but a responsible free agent, with duties to perform to his God, his neighbour and himself; and a conscience to prick him if he performs them not./226/

In the final Contemporary Review article in this series, the Duke of Argyll, like Mivart, attacked the doctrine of the inheritance of acquired characteristics on the grounds that it implied that higher faculties come earlier and lower faculties later in the evolutionary order. Such a view inverted the true order of evolution, he wrote:

which is founded on the conception of an unfolding or development from the lower to the higher, from the simple to the complex, from the instinctive to the rational./227/

However, unlike Mivart and Elam, Argyll admitted the essential correctness of the mechanistic world view and wrote:

we need not fear or shrink from the admission that Man is a reasoning and self-conscious machine, just in the same sense in which the lower animals are machines which have made to exhibit and posses certain mental faculties of a lower class./228/

Argyll argued that the mechanism that exists is one of "coordination and
adjustment and, above all others, ... the special adjustments connected with organic life."/229/ The functioning of instincts display this power of coordinating and adjustment. At a higher level, self consciousness and reasoning display these same powers. However, Argyll, like Mivart, maintained that there are qualitative differences between instinct and reason and that man is the only possible being partaking of both. He wrote:

It is as if there were within us one Being always receptive of suggestion, and always responding in the form of impulse--and another Being capable of passing these suggestions in review before it, and of allowing or disallowing the impulses to which they give rise. There is a profound difference between creatures in which one only of these voices speaks and Man, whose ears are, as it were, open to both./230/

But instinct and reason alike share coordinating and adjusting functions. These characteristics, based as they are in a natural order, had important epistemological implications. He wrote:

No stronger assurance can be given us that our own faculties, when rightly used, are powers on which we can indeed rely. It reveals what may be called the strong physical foundations on which the truthfulness of reason rests ... it clothes with the like character of trustworthiness every instinctive and intuitive affection of the mind./231/

Unlike Mivart and Elam, Argyll argued that the automaton thesis had some positive implications. He wrote:

this doctrine of animal automatonism--the notion that the mind of Man is indeed a structure and a mechanism--a notion which is held over our heads as a terror and a doubt--becomes, when closely scrutinized, the most comforting and reassuring of all conceptions./232/

Such a positive assessment of the implications of the automaton thesis was not at all uncommon during this period. Of particular interest is a group of articles which claimed that doctrines associated with the automaton thesis (determinism and materialism) had positive
consequences for morality. As we will see, the "beneficial moral consequences" of these doctrines stand in clear opposition to the individualistic morality of the utilitarian tradition.

Two articles published in *Mind* in the late 1870's traced out such implications. L. S. Bevington in "The Personal Aspect of Responsibility" presented an argument to demonstrate that the heart of a true morality lay in transcending the personal./233/ Bevington's point of departure was the debates stimulated by the automaton thesis. She wrote that "the air is rife" with querulous discussions . . . touching 'mechanical' morality and that discouragement of individual virtue which is supposed to follow on a belief in the modern theory of the natural evolution in society./234/

Furthermore, she added:

When to the theory of social evolution we add the modern scientific views regarding the physical relations of consciousness, the logical resources of the belief in responsibility are further weakened, since such views undoubtedly tend to sweep aside as chimerical all ethical standards based on freedom of the will, reducing the loftiest and most far-reaching moral efforts to the irresistible reaction of a complex automatism./235/

Bevington's aim in the paper was the refutation of the view that morality is doomed on the world view of the determinists. Only the doctrine of individual or personal responsibility suffers on such an account, she wrote, and this doctrine never provided a sound basis for morality anyway. True moral action, she wrote, involved transcending the personal./236/ The true goal of morality is the perpetuation of human development which involves the evolution of society as a whole and the evolution of social or super personal impulses, emotions and tendencies in individuals./237/ Bevington wrote:
Just in proportion as the desires and purposes of the individual lead him to conform to social requirements, and to merge self, the person, in self, the social unit, can he obtain a virtual mastery over his conditions./238/

However, like the utilitarians earlier, Bevington believed that unsullied human motivation might not be adequate to this task and argued that some correction of human motivation might be required. Sounding quite utilitarian, she wrote:

in the artificial correction of this special instance of a naturally incomplete adaptation of our circumstances to our requirements lies the essence of all good and wise law-making, as also of the purification of public opinion, that most powerful of all social engines./239/

In a second article, "Determinism and Duty," also published in Mind, Bevington argued, in much stronger language, that determinism has positive moral value, i.e., that "the fatalism warranted by science may make or tend to make man a more efficient agent in the promotion of human welfare."/240/ Bevington wrote:

Only when we have admitted and realised that volition does invariably conform to law, can we consistently set about operating on it to as voluntarily to influence life and deed through its agency. Our belief in education, and in government by reward and penalty, indicates our practical belief in determinism, all that modern philosophy does is to prop practice by theory./241/

In keeping with its policy of encouraging experimental research, Mind published an investigation by Galton into the frequency of occurrence of his own acts of free will./242/ Galton wrote that for a period of six weeks he observed his own mind with respect to these acts. He noted that he

began my observations under the belief that I should be seriously embarrassed by their number and frequency and I spent much preliminary thought over different methods of dealing with otherwise overwhelming multitudes of data./243/

Galton continued,
Great then was my surprise in discovery . . . that the occasions were rare in which there seemed room for the exercise of Free-will. I ultimately reckoned that the rate of occurrence of such interesting cases, during the somewhat uneventful but pleasant months of a summer spent in the country, was less than one a day. /244/

Galton did qualify these results by noting that he was only reporting "the operations of my own mind," but urged others to undertake the same kind of investigation so that some generalizations can be drawn. /245/ And Galton argued that "the general results of my introspective inquiry support the views of those who hold that man is little more than a conscious machine, the larger part of whose actions are predictable." /246/ He added

As regards such residuum as there may be, which is not automatic and which a man however wise and well informed could not possible foresee, I have nothing to say, but I have found that the more carefully I inquired, whether it was into the facts of hereditary similarities of conduct, into the life-histories of very like or very unlike twins, or now introspectively into the processes of what I should have called my own Free-will, the smaller seems the room left for the possible residuum. /247/

It is clear that not everyone saw these doctrines as clashing with the requirements of morality. However, in rendering materialism and determinism compatible with morality these thinkers significantly revised the traditional notions of morality, both religious and utilitarian. Perhaps the most peculiar revision of religious morality was that provided by the staunch advocate of materialism, Henry Maudsley. Maudsley argued that "mind is an outcome and function of matter in a certain state of organization, coming with it, growing with it, decaying with it, inseparable from it." /248/ To vouchsafe morality, Maudsley simply posited a cerebral structure underlying moral feeling or conscience. Maudsley noted that we frequently observe that
moral feeling may be impaired or destroyed by direct injury of
the brain, by the disorganizing action of disease, and by the
chemical action of certain substances which, when taken in
excess are poisons to the brain./249/

And he concluded,

When we look sincerely at the facts, we cannot help perceiving
that it [moral feeling] is just as closely dependent upon
organization as is the meanest function of the mind./250/

Maudsley bemoaned the fact that materialism had acquired such a bad name
because of its purported moral implications. He attempted to expose the
bases of the prejudice against materialism and to demonstrate that it
provides a sounder basis for morality than religious
conviction./251/ Maudsley pointed out that (1) larger, more complex
brains display higher intellectual and moral functions and (2) that the
evolution of such a complex brain involves the slow accumulation of
experience across generations (i.e., the hereditary transmission of
acquired characteristics.)./252/ Maudsley argued that these doctrines
have important practical implications. First, in addition to
vouchsafing the progress of man, the principle of the inheritance of
acquired characteristics underlies the "working out of human degeneracy,
in carrying mankind downwards to a lower level of being."
This "fact" has clear moral implications. Maudsley noted:

It was no mere dream of prophetic frenzy that when the fathers
have eaten sour grapes the children's teeth are set on edge, nor
was it a meaningless menace that the aims of the fathers shall
be visited upon the children unto the third and fourth
generations; it was an actual insight into the natural law by
which degeneracy increases through generations--by which one
generation reaps the wrong which its fathers have sown, as its
children in turn will reap the wrong which it has sown./254/

According to Maudsley, materialism and evolutionary theory, together
with the assumption of a physical basis for the moral faculty provides
us with an alternative, scientific, explanation of the doctrine of Satanic agency and a basis for individual moral responsibility. Maudsley asserted that

a person may succeed in manufacturing insanity in his progeny by a persistent diseuse of moral feeling and a persistent exercise throughout his life, of those selfish, mean and anti-social tendencies which are a negation of the highest moral relations of mankind. He does not ever exercise the nervous substrata which minister to moral functions, wherefore they undergo atrophy in him, and he runs the risk of transmitting them to his progeny in so imperfect a state, that they are incapable of full development of function in them./255/

Maudsley concluded that this clearly implied individual moral responsibility and the need for a scientific ethics. He wrote:

Whether, then, man goes upwards or downwards, undergoes development or degeneration, we have equally to do with matters of stern law. Provision has been made for both ways; it has been left to him to find out and determine which way he shall take. And it is plain that he must find the right path of evolution and avoid the wrong path of degeneracy, by observation and experience, pursuing the same method of positive inquiry which has served him so well in the different sciences./256/

Like Bevington, Maudsley concluded that the individual's responsibility is not to better himself but "to promote the well-being of the social organization—that is, to make his life subserve the good of his kind."/257/ Again we see a clear shift away from the individualism which had been at the heart of the Utilitarian program.

The automaton thesis, with its associated cluster of doctrines (materialism and determinism) also had an impact in more narrow domains. Next I will turn to the scientific impact of the doctrine focusing upon some aspects of its impact on physiology and psychology.
As we have seen, reflex theory with its sensori-motor paradigm for the explanation of behavior, provided one of the main lines of evidence for the automaton thesis. Robert Young's work has shown that it was the research of J. Hughlings Jackson and David Ferrier (among British physiologists) that provided the basis for the extension of the sensori-motor paradigm to the cerebral cortex. Since the cortex was regarded as the seat of higher mental processes their work provided the basis for the extension of the sensori-motor paradigm to all forms of behavior. For example, a motor theory of thought could be based upon sound physiological principles only after 1873 when Ferrier confirmed Fritsch and Hitzig's findings of the excitability of the motor cortex. Physiologists were not long in drawing the conclusions of this discovery. In 1876 Jackson wrote: "Mental operations in the last analysis must be merely the subjective side of sensory and motor substrata."

While Robert Young evaluates this extension of the sensori-motor paradigm as scientifically progressive, he raises questions about its value in extending our understanding of the functioning of the mind. I have argued that Bain's physiology which predated but anticipated these developments did not shed much light on psychological functioning; Young argues that, despite their proclamations, Ferrier and Jackson's physiology also failed in this respect.
Bain was tied to this tradition in a variety of ways. As early as
1864 he had argued that the distinction between passive and active modes
of consciousness rested upon the nervous system's division into sensory
and motor functions./262/ For this reason he adopted the
feelings-of-innervation account of muscular sensibility, thereby
guaranteeing, if experimental research cooperated, a motor basis for our
active modes of consciousness./263/ What Bain was hoping to achieve was
an account of activity and purpose in terms of efficient causes.
However, as we will see, experimental evidence did not cooperate.

Following the presentation of the consciousness automaton thesis
there was an increased interest in psychological and physiological
accounts of attention and volition. Physiologists focused their efforts
on muscular sensibility and became increasingly critical of the
feelings-of-innervation account that underlay Bain's account of the
will./264/ Although much of the physiological evidence was ambiguous,
support was growing for the view that muscular sensibility was sensory,
not motor in character. It began to appear that Bain's "most vital
distinction within the sphere of the mind," the distinction between
passive and active modes of consciousness was indeed "bereft of all
physiological support."/265/ During the 1880's it became clearer that
the sensori-motor paradigm, while scientifically progressive in
physiology, was not paying off in psychology.

With regard to attention, the central task was the attempt to
identify the precise region of the cortex governing the operation of
attention. Ferrier, along with Wundt, located it in the frontal lobes,
although their theories were speculative./266/ Ferrier wrote:

The faculty of attention, with all that it implies in the sphere of intellectual operations, must be intimately related to the volitional control of the head and eyes in association with the centres of visual perception and ideation./267/

Others, such as Bastian, denied that it could be so localised./268/ In fact, it was not until the functions of the reticular formation were discovered some sixty years later that a truly promising line of research on the neurophysiological basis of attention got underway./269/ As we will see, among psychologists the focus of debate was the role of motor processes in attention, not the question of brain localization.

The work of Charles Sherrington shifted the focus of all these questions. First of all, he was the one who finally provided the experimental evidence necessary to demonstrate that muscular sensibility was sensory in character. Proprioceptive sensations were shown to provide the feedback necessary for muscular regulation. With Sherrington's demonstration, the feelings-of-innervation account collapsed./270/

Secondly, Sherrington shifted the focus of investigation on the reflex. He argued that synaptic functions play a critical role in determining action. Sensori-motor processes are not simply excitatory; inhibitory processes can also take place at the synapse or excitatory and inhibitory processes may interact./271/ Reflex action became a much more complex process on this view; behavior was depicted in terms of processes of coordination and integration of reflex patterns. The appealing simplicity of the sensori-motor view gave way to a view with
considerably more complexity, but not necessarily any more explanatory power regarding psychological matters. This new, more complex picture of neurophysiology was not incorporated into psychology until the early twentieth century.

Subsequent Developments in Psychology

Among psychologists the conscious automaton debate led to a reevaluation of the role of volition in action and thought. New conceptions of the nature of volition and voluntary action were presented and discussed. The selecting and directing functions of attention received a new emphasis in accounts of thought processes. Even among those adhering to traditional views, there was an increased tendency to stress the importance of consciousness and the necessity of employing introspective methods to reach an understanding of the human mind.

As we have seen, many of the opponents of the automaton thesis rested their case upon introspective evidence. Mivart wrote that "the slightest consideration of our own mental activity soon shows us that, in addition to our various feelings, we also 'think' and 'will'." The "method" of introspection was set in opposition to the materialistic or physiological method, both because they lead to conflicting results and because of concern about the moral nature of man. Such an opposition was implicit in the work of Bain, since he argued (1) that science must be deterministic, (2) that psychology must be as physiological as possible, and (3) that introspection is a central method of psychological investigation. The conflict between these
sources of evidence (deterministic science and introspection) must have been perceived by Bain, when the automaton thesis drew the line so sharply. Bain never made any direct comments upon the implications of Huxley's thesis for human functioning, although several later articles touch on related issues.

As we have seen, Bain denied that consciousness is an inert, uninfluential accompaniment of nervous processes, and argued that it is presupposed for any form of acquisition. Consciousness was simply inexpedient in the Utilitarian-Associationist tradition. Bain applied the principle of continuity in reverse and argued that we must attribute consciousness to animals.

It was also during this period that Bain shifted to an instrumentalist account of the role of physiological constructs in psychological theory and increased his emphasis upon the central role of introspection in psychological theory. Bain asserted that introspection was "the alpha and omega of all psychological enquiry."

Such a retreat from the commitment to physiological methods was not unique to Bain. Ward argued that psychology and physiology must be kept wide apart, pending adequate development of each science. Sully argued that introspection was the primary tool of the psychologist. Even Maudsley reversed his position and asserted that introspection was an essential method for psychology. The backlash against the vision presented by the "new psychology" affected a broad range of psychologists.
The nature of voluntary action became an important issue for psychologists during this period. Psychologists such as Ward, Sully and Stout were reformulating accounts of voluntary action so as to make them less mechanistic and somewhat less intellectualistic. The new emphasis upon conational processes extended also to the mental realm. Here attention was posited as a fundamental power subserving the selective and directing functions of thought processes. Controversies over the character and functions of attention will be presented more fully in Chapters 7 and 8. Here I would just like to point out that the stress upon the volitional character of thought led to revisions in the traditional view of consciousness. In the Utilitarian-Associationist tradition the receptive function of consciousness had been stressed. For James Mill, consciousness was merely "the having of sensation." Although Bain somewhat improved this account, he also emphasized the receptive functions of consciousness. The new emphasis upon the role of attention and the constructive functions of thought led to a new view of adaptive consciousness, which stressed its role as a buffer between the individual and the environment. The emphasis given to volitional processes during this period became a permanent part of the British psychological tradition. McDougall's hormic psychology, formulated in the early years of the twentieth century, made purposive striving the essential mark of all behavior.

Finally, in practical fields there was a shift away from the Mill-Bain view of character as a product of habit formation. Ward, Sully and several others in their generation emphasized the power of conscious reflection and choice of the individual instead of, or in
addition to habit. Ward, for example, wrote that too great an emphasis upon habit formation was likely to lead to the "fossilization of character."/284/ In education this meant a reduced emphasis upon habit formation, and an increased emphasis upon the development of volitional powers such as the power of attention./285/

Subsequent Developments in Philosophy

The reaction to the conscious automaton thesis and its related doctrines of materialism and determinism was part of a larger debate that examined the possibility of a science of man and questioned the traditional account of science itself. In 1882, T. H. Green's article "Can There be a Natural Science of Man?" appeared in Mind./286/ Green's central thesis in this work was that the moral action of man is of a different order than the the phenomena dealt with by the physical sciences. This difference, as we have seen, was felt by many during the late nineteenth century and was the basis of the objections to the automaton thesis. Green's aim was to provide an intellectual foundation for this conviction./287/

First Green identified the contemporaneous origins of the natural science of man. He wrote:

The theory of descent and evolution opens up a vista of possibilities beyond the facts, so far ascertained, of human history, and suggests an inquiry into the antecedents of the moralised man based on other data than the records which he has left of himself. Such inquiry, it is thought, will in time give us the means of reducing the moral susceptibilities of man to the rank of ordinary physical facts, parts of one system, and intelligible by the same methods, with all the natural phenomena which we are learning to know. Man will then have his ascertained place in nature, as perhaps the noblest of the animals but an animal still./288/
To this Green added an important caveat:

It is not at all intended to dispute the possibility of a valid natural science dealing with human nature in certain of its aspects. the point at issue is whether any such science can deal with the ultimate principle of knowledge and of morality in man./289/

Given the Utilitarian-Associationist attempt to create a science of man and given their program of basing epistemology and ethics upon psychology it is clear what is at stake in Green's examination. Green's argument was developed through a long and detailed account of Kant's position and its shortcomings, which I would just as soon circumvent. What he did subscribe to in the Kantian philosophy was the view that nature implies a self-distinguishing subject that is distinct from nature. Green wrote:

If by nature we mean . . . the connected order of knowable facts or phenomena . . . then nature implies something other than itself as the condition of its being what it is . . . . that something else . . . is a self-distinguishing consciousness./290/

This led Green to the conclusion that "man is not merely a phenomenon or succession of phenomena."/291/ Furthermore,

it is important to call attention to that kind of activity undoubtedly exercised by us, implied in all distinctively intelligent or moral experience . . . . If we reflect on what is contained in our knowledge, or in any conception or perception contributory to it, we shall see that the relation in which its constituents stand to each other is essentially different from the relation between stages of the process by which the knowledge or perception is arrived at./292/

He added that, "for this reason no knowledge, nor any mental act involved in knowledge, can properly be called a 'phenomenon of consciousness'."/293/
It is important to recognize the implications of Green's critique. He argued that self-consciousness played an essential role in the construction of knowledge. This implies that the investigation of the sources of knowledge can shed little light upon its current status in the individual mind. Psychology, if it restricts itself to an investigation of the sources of knowledge qua phenomena (i.e., associationism), cannot shed light upon "distinctively intelligent or moral experience."/294/ To account for such experience the activity of the self-conscious subject must be acknowledged, but this activity cannot be phenomenalized./295/ Green concluded, therefore, that a natural science of man is impossible. As we will see, James Ward followed the same line of reasoning, but concluded that we need to reject the phenomenalist and deterministic program of seventeenth century science.

Concurrent with these developments, certain other developments were taking place which led to a different view of the limitations of science. Kantian phenomenalism differed from Humean phenomenalism in asserting that a real world lay beyond the appearances. Although understanding was restricted to the phenomenal realm, Kant also posited pure reason and practical reason. The moral and aesthetic aspects of human experience were not reduced to phenomena by Kant, but rested on a foundation other than the understanding. I would suggest that the incorporation of neo-Kantian thought in Britain, (i.e., the work of Lange and Lotze) provided intellectuals with tools for formulating their conviction that science could not adequately treat central aspects of human experience.
Both Lange and Lotze distinguished between a realm of science and a realm of value. Each argued that mechanism was the most appropriate framework for the realm of science. And each argued that science could not capture important aspects of human experience. The influence of their views in Britain can be seen in a wide variety of individuals. /296/

I contend that the adoption of such views was facilitated by the conflicts engendered by issues involved in the conscious automaton debate. The view of man as a conscious automaton conflicted with the deeply rooted conviction that we are purposive, selective and moral beings. This conflict and the adoption of the notion of separate, and equally legitimate, realms of discourse led to a new emphasis upon the limitations of scientific explanation. Coupled with the idealist critique of scientific concepts as abstractions, these developments led, for a time, to a genuine epistemological pluralism, a view that different modes of explanation are appropriate for different aspects of human science. /297/

This pluralism collapsed with the rise of logical empiricism with its stress upon the hegemony of science as a route to knowledge, but aspects of this shift lingered on in conventionalist and instrumentalist views. /298/ I would argue that it is worth reexamining the sources of, and the rationale for, this pluralism since the problems it was designed to solve are still with us today.
NOTES FOR CHAPTER 6


5. New developments in physics and chemistry during the nineteenth century had done much to bolster the confidence of reductionistically inclined scientists. See Introduction to Part III, n. 2.


7. Turner, Between Science and Religion, p. 2. Turner includes among the naturalists T. H. Huxley, John Tyndall, Herbert Spencer, William K. Clifford, Francis Galton, Frederic Harrison, John Morley and George Henry Lewes. This is a somewhat diverse group of thinkers leading one to suspect that Turner's aim of depicting the diversity of reactions to scientific naturalism led him to overlook the diversity of naturalistic views proposed. While Turner does mention the agnosticism of some of the naturalists, he does not explore the philosophical basis
for this position. Ibid., pp. 21-22. I believe that it was rooted in Kantian phenomenalism, not Humean phenomenalism and that it implied the two-worlds view seen among naturalists and non-naturalists alike.


9. I suspect the description fits as it concerns Tyndall. Huxley and Spencer. Clifford, however, certainly did not subscribe to Dalton's atomic theory but instead posited a mind stuff that underlay matter. Nor did Bain necessarily hold such a view. Turner incorrectly cites Bain as the author of an 1853 Westminster Review article entitled "The Atomic Theory." Furthermore, Lewes argued that sentence—one form of which was consciousness—was a necessary component of all action. This was the basis of his contention that psychological and physiological phenomena could not be explained on purely mechanical principles.

10. It is true that William James wrote one of the classic rebuttals of the automata thesis and published it in the English journal Mind in 1876. It is also true that James maintained close ties with many British psychologists. However, this does not seem to justify focusing on him in a book on English social thought. Soffer's account of the development of psychology in Britain is riddled with minor inaccuracies which detract from the flow of the argument.

11. Although James' 1879 paper will be discussed it will be assessed as a contribution to subsequent debates in England.


13. She wrote

"A thoroughgoing empiricism might have accepted introspective evidence on an equal footing with physiological data, but a consistent determinism required psychologists to disregard the familiar experiences of volition, effort, unity of consciousness and ultimately consciousness itself as illusory." (Ibid.)

It is also clear that the reductionism of the program provided no aid in resolving these contradictions.

14. Ibid., p. 194. It is worth quoting the passage from Sidgwick in full:

"The belief that events are determinately related to the state of things immediately preceding them is now held by all competent thinkers in respect of all kinds of occurrences except human volitions. It has steadily grown both intensively and extensively, both in clearness and certainty of conviction, and in the universality of explication, as the human mind has developed and human experience has been systematized and enlarged step by step, in successive departments of fact, conflicting modes of thought have receded and faded, until at length they
have vanished everywhere, except for the mysterious citadel of the will. (The Methods of Ethics [London: Macmillan, 1874], p. 47)

Sidgwick's metaphor corresponds with one employed by Bain in his work On Character. Bain wrote: "The adherents of the older psychology are thus boldly challenged to surrender their citadel to the new methods [of phrenology]." Bain, On the Study of Character, Including an Estimate of Phrenology (London: Parker, Son and Bourn, 1861), p. 25. There is other evidence that Sidgwick read this work for it was here that Bain spoke of disinterested action as a "glorious paradox." See note Chapter 3, notes 152, 142. If I am correct this is one of the few indications that this work had any impact.

15. For example, both Mills had deterministic accounts of volition, although the determinism was one of mental conditions (motives) rather than physical conditions.


17. These thinkers argued that the basic unit of experience was the dynamic experience of resistance to muscular effort. Furthermore, they maintained the subjective experience of force (effort vs. resistance) provided direct knowledge of a cause actively determining an effect. The resulting dynamic notion of causality was considered a viable alternative to Hume's analysis by these thinkers.

18. The significance of Smith's work, however, extends well beyond this. It should be regarded as a contribution to recent revisions in our view of the nature of seventeenth century science and its impact on subsequent views of science.

19. The importance of Lange for the thought of this period is emphasized in John Theodore Merz, History of European Thought in the Nineteenth Century, 4 vols., 3rd ed. (London: William Blackwood and Sons, 1907-1914). Merz regarded Lange as the leader of the neo-Kantian movement in Germany. Lange's importance for British thought is corroborated in E. C. Thomas' preface to the English translation of History of Materialism (written in 1877):

"The History of Materialism was hailed upon its original publication in Germany, as a work likely to excite considerable interest. In this country, Professor Huxley suggested, in the "Lay Sermons, Lectures and Addresses" (published in 1870), that a translation of the book would be "a great service to philosophy in England". . . . And then, in the autumn of 1874,
attention was again specially directed to it by Professor Tyndall's acknowledgement of his indebtedness "to the spirit and to the Letter" of the work in his memorable address as President of the British Association at Belfast."

It was this address which inspired Thomas to undertake his translation of the work, which was published in three volumes in 1877, 1880 and 1881 respectively. F. A. Lange, History of Materialism and criticism of its present importance, trans. Ernest Chester Thomas, 3 vols. (London: Trubner and co., 1877-81). Lange's work was well received by British thinkers and went through numerous editions. Bertrand Russell wrote the introduction to the 1925 reissue of the work.


22. Ibid., p. 190.
23. Ibid.
24. Lange, History of Materialism, 2:337.
25. Ibid., 3:335-65. It is this view of independent realms of discourse, a view also maintained by Hermann Lotze, that permeated much thinking in Britain during the last quarter of the nineteenth century. This view enabled thinkers such as Tyndall and Huxley to argue for a mechanistic and deterministic view of man, while skirting many of the implications of such a view.
27. Ibid., 3:133.
29. Ibid., 3:168. In reviewing the work of Wundt's students, with Münsterberg specifically in mind, James Ward remarked that although Lange had shocked the world by dispensing with the soul, now modern psychology was attempting to dispense with consciousness altogether. Ward, "Modern Psychology: a Reflection," Mind 2 n.s. (1893):55.
30. Lange, History of Materialism, 3:156.
31. Ibid., 3:184.
32. Ibid., 3:193.
33. Ibid.

34. Ibid., 3:187. This comment corroborates my view that the Utilitarian-Associationist thinkers were interested in developing associationist psychology as the foundation for epistemology, ethics and a program of social reform.

35. Descartes, Treatise of Man (1662).

36. Mentioned in Lange, History of Materialism, 2:75 (Note 72).

37. Ibid.

38. According to Lange, these efforts were still under serious discussion in the mid-nineteenth century. He cites Helmholtz's, "Über die Wechselwirkung der Naturkräfte, Vortrag vom 7 Febr. 54," of which he says "the connection of these attempts with the progress of mechanics and with the expectation of what was to be achieved by them is very justly demonstrated." Ibid.

39. On Hartley, see H. C. Warren, A History of Association Psychology (New York: Charles Scribner's Sons, 1921; reprint edition New York: Johnson Reprint Corporation, 1967), pp. 157-60. Robert Young, in Mind, Brain, and Adaptation in the Nineteenth Century: Cerebral Localization and Its Biological Context from Gall to Ferrier (Oxford: Clarendon Press, 1970) contends that Cartesian dualism and associationist thought provided the categories within which studies on functions of the brain were interpreted during the nineteenth century and that this state of affairs was detrimental to the development of physiological psychology. I will touch on Young's criticisms of the physiology of the period at various points in my account.


41. Ibid., p. 120.

42. Ibid., p. 134.

43. Hall did maintain that volition may modify the acts of the reflex function, and he noted that these acts are frequently accompanied by sensation. Ibid.

44. Ibid., p. 141. Müller's work was to have an impact on the work of Alexander Bain. See Young, Mind, Brain, and Adaptation, pp. 115-16.

45. Ibid., p. 143. This accounts for a commonly observed reflex—the eye blink.
46. Ibid., pp. 142-43. Hall was to take with issue with Müllersaying that while sensation may accompany reflex activity, such activity is in no way dependent upon sensation. Ibid., pp. 142-43.

47. Ibid., p. 145. As we have seen, Bain argued that the passive and active modes of consciousness had their grounding in the distinction between sensory and motor functions. It was this belief that led him to adopt the feelings-of-innervation account of muscular sensibility. Bain employed this account to provide a "mechanical" explanation of our active modes of consciousness, including our control over thoughts and actions. See the discussion of Roger Smith's work in Chapter 3, section entitled "The Received View of Bain."

48. Young, Mind, Brain and Adaptation, pp. 210-11, 218-19. I have argued that Bain ignored these physiological facts and developed a motor theory of thought that he claimed was based upon sound physiology. See Chapter 4, section entitled "The Physical Embodiment of Mind."

49. See Young's account of Carpenter's interpretation of Ferrier'sfindings for a sense of just how powerful these beliefs were. Ibid., pp. 211-15.

50. A third exception, the German W. Griesinger, was identified by Fearing, Reflex Action, p. 237. Griesinger's writings had an impact on Henry Maudsley who discussed ideo-motor activity as a form of reflex activity in his Physiology and Pathology of the Mind (New York: D. Appleton and Company, 1867). Maudsley did distinguish among levels of the nervous system according to structure and function, in a manner which seems to imply the rejection of the possibility of reflex action in the cerebrum. Ibid., p. 54. He designated the grey matter of the hemispheres as the "ideational centre" and the grey matter of the spinal cord as "centres of reflex action." Anatomical, experimental physiological and pathological evidence was presented in support of this distinction. However, at the end of the chapter on the spinal cord he says:

"I have lingered thus long upon the spinal cord, because most of what has been said with regard to its functions may, with the necessary change of terms, be applied to the other nervous centres. A distinct conception of the nature and mode of development of the functions of the spinal centres is indeed the best, is the only adequate, preparation for an entrance upon the study of cerebral action; it is an indispensable pre-requisite to the right understanding of the higher displays of nervous function, and alone fixes the sure basis whereon to build a true mental science. (Ibid., p. 84.)

He cited two of Griesinger's papers in a note to this passage. Maudsley's statements may not contradict Young's account since his description of ideomotor activity as reflexive seem to be metaphorical (i.e., the heuristic application of an explanatory principle) rather than literal. In various statements he indicated that reflex activity is what takes place without voluntary control or
consciousness. It is these characteristics he seems to focus on rather than the underlying physiological mechanisms. However, in the third edition (1878) of the work, he cited a paper by Laycock ("Reflex, Automatic and Unconscious Cerebration," *Journal of Mental Science* 1876) as a source of information on the reflex action of the brain.


53. The doctrine of unconscious cerebration and ideo-motor action were discussed by Carpenter in *Principles of Human Physiology* 5th ed. (London: John Churchill 1855). These doctrines were first proposed in the 4th edition of that work (1853).

54. According to Young, it was only John Hughlings Jackson, a student of Laycock's, who extended the paradigm to the brain during the period prior to 1870. Young, *Mind, Brain and Adaptation*, pp. 204–9. After 1870, physiologists could draw on the work of Fritsch and Hitzig, as well as Ferrier, which demonstrated that the cortex displayed both sensory and motor functions.

55. In *Principles of Mental Physiology*, 4th ed. (New York: D. Appleton, 1900 [1876]), Carpenter discussed the excito-motor system as involving instinctive and reflex activity, as well as secondarily automatic activity (such as soldiers marching in their sleep). Furthermore, automatic activity of the cerebrum was evidenced in recollection, reasoning, judgement and various creative processes as well as in such abnormal mental states as somnambulism, mesmerism, spiritualism, and induced states such as intoxication and delirium. While Carpenter maintained that the controlling power of the will was the crucial element in volitional activity, his extension of the domain of non-volitional activity may have suggested that volitional activity is relatively unimportant and/or not radically different from non-volitional activity.


58. Marshall Hall, Johannes Müller, A. W. Volkmann, George Paton, Edward Pflüger, Friedrich Goltz and George Henry Lewes all carried out experiments with spinal frogs. Friedrich Goltz also carried out a series of studies on dogs from 1876-1892. *Ibid.*, pp. 166-67. Theodore Bischoff had carried out similar studies on a decapitated
criminal earlier in the century. Ibid., p. 152.

59. Young states simply that the English tended to show a preference for clinical rather than experimental evidence. Gerald Geison, in "Sir Michael Foster and the Rise of the Cambridge School of Physiology, 1870-1900," (Ph.D. dissertation, Yale University, 1970) discusses various factors working against the development of experimental physiology during this period. Among these were the widespread anti-vivisection sentiment, the impact of natural theology on the practice of anatomy and physiology and the structure of medical and scientific education in England during this period.

60. For a discussion of the Pflüger-Lotze controversy see Fearing, Reflex Action, chap. 11.


62. In the first place, this work obliterated many of the traditional distinctions between voluntary and involuntary activity. Lewes' view on the form of consciousness that accompanied reflex activity served to broaden the meaning of the term considerably. Fearing, Reflex Action, pp. 168-72. His views played a role in debates over the nature and function of consciousness in the late 1870's and 1880's, and helped provide an opening for the introduction of a notion of the unconscious.


64. In 1784 a commission was appointed in Paris to investigate Mesmer's claim of having discovered a new physical fluid. Prominent scientists served on this commission, including the chemist Lavoisier, the astronomer Baillie and the American ambassador to Paris, Benjamin Franklin. The commission reported that they could find no evidence of a magnetic fluid. While they did not deny the effectiveness of the technique they suggested that "imagination," enhanced by erotic attraction, was probably the basis of success. See ibid., p. 65.

65. Braid rejected Mesmer's magnetic fluid theory and proposed a new one based on brain physiology. He also is remembered for having coined the term "hypnotism". Braid published an account of his theory and the research he had conducted in 1843. James Braid, Neurhypnology or the Rationale of Nervous Sleep Considered in Relation with Animal Magnetism (London: John Churchill, 1843). In the same year an English surgeon, John Elliotson, published a report of the use of the mesmeric trance as a surgical anesthetic. See Ellenberger, Discovery of the Unconscious, p. 82.
66. Ibid.


68. Holland, Chapters on Mental Physiology (London: Longman, Brown, Green and Longman, 1852), p. 10. Holland also pointed out that such records "would, if verified by sounder proof, alter all our views of physical phenomena of the nature of man, and of the providence ruling in the world." This quotation should give some hints as to the source of Holland's concern.

Holland was the physician to six Prime Ministers and also served as Queen Victoria's physician. Ibid., p. 20. Holland emphasized the role of attention in Mental Physiology. William Carpenter dedicated Principles of Mental Physiology (1874) post-humously to Holland.

69. In the fourth edition of Principles of Human Physiology (1853), he devoted twelve pages to mesmerism and related phenomena and in the fifth edition (1855) seventeen pages. Although the "Outline of Psychology" was deleted from the sixth edition (1864), Carpenter devoted thirteen pages to these topics. When he published the expanded version of the "Outline" in 1874 as Principles of Mental Physiology, seventy-seven pages were devoted to these topics.

70. Carpenter gave detailed accounts of these phenomena illustrated with intriguing examples. His descriptions, no doubt, contributed to the public's fascination with such phenomena. See Carpenter, Mental Physiology, chap. 6, sec. 3 and chaps. 13-17.

71. These acts properly fall into Hartley's category of secondarily automatic actions. Carpenter felt justified in calling them reflexive, since he claimed that the same nervous mechanism underlay these acts:

"On all these forms of secondarily automatic activity it seems reasonable to infer that the same kind of connection between the excitor and the motor nerves comes to be formed by a process of gradual development, as originally exists in the nervous systems of those animals whose movements are primarily automatic." (Ibid., p. 75).

It is not immediately clear on this account, how he could have maintained the view that the cerebrum is also subject to the laws of reflex action, for he maintained that the cerebrum was anatomically distinct from the motor system. It appears that the reflex action of the cerebrum that emanated in movement was mediated by the sensory ganglia, which are in communication with the cerebrum. Apparently, each idea in the cerebrum had a sensory counterpart in the sensorium. By exciting particular ideas in the sensorium the cerebrum instigated automatic activity.
72. This interpretation was not made by all subsequent thinkers. We will see that Huxley cited similar evidence for his doctrine that we are nothing but conscious automata.

73. This story is told by Robert Young in *Mind, Brain and Adaptation*.

74. Brodie's work was published anonymously as *Psychological Inquiries* (London: Longman, Brown, Green, Longman, 1854).

75. As we shall see, Tyndall, Huxley and Clifford were much more cautious in their materialistic pronouncements. In 1900, Maudsley acknowledged that the "New Psychology" had made little progress and asserted that introspection must remain one of the central methods of psychology. Maudsley, "The New Psychology," *Journal of Mental Science* 46 (1900):24-22.


79. Few failed to extrapolate the theory to man. In many cases this was done in a manner designed to ridicule the entire doctrine. See Ellegård, *Darwin and the General Reader*, pp. 293-96.


85. *Ibid.*, p. 592. As we have seen, even Bain was forced to acknowledge a social instinct as the basis of one form of "moral" conduct and disinterested action.

86. See Robert Richards, "Influence of Sensationalist Tradition on Early Theories of the Evolution of Behavior," *Journal of the History of Ideas* 40 (1979):85-105. He describes how some of the inconsistencies in Darwin's doctrine of instincts (including the Lamarckian doctrine of
use-inheritance) show the impact of sensationalist accounts of instinct, which in turn reflected a desire to avoid postulating anything innate.


89. Ibid., p. 357.

89. A distinction can be made between those who are metaphysical dualists and those who are monists within this group. For the latter group, the parallelism was between two aspects of a single underlying substance. Lewes definitely falls into this latter group and Bain equivocates. Clifford's postulation of mind-stuff justifies his inclusion in this latter group. Tyndall made no statements about the nature of any underlying substance(s).

90. A paper could be written on the various ascriptions of the label "Automaton Theorist" during this period. Carpenter grouped Tyndall, Huxley and Clifford together as automaton theorists in the Preface to the Fourth Edition of Principles of Mental Physiology. Carpenter's criterion seemed to be that they denied interactionism, and thus the possibility of volitional activity. William James in "Are we Automata" listed Huxley, Spalding, Clifford and Hodgson (in Theory of Practice) as espousing the doctrine that "feeling is a mere collateral product of our nervous process." Ibid., p. 1. Individuals who escaped James' attack because they argued that feelings had causal efficacy included Spencer, Hodgson (in Time and Space), Carpenter and Bain.

Although James was correct, in the strict sense, in excluding these individuals, several of these thinkers became associated with the view under attack because they employed assumptions identical, or similar to those employed by the automaton theorists. Bain, for example, stressed the relevance of the sensori-motor paradigm for psychology. Bain, Spencer, and even Carpenter, in certain places, stressed the centrality of habit formation in the guidance of thought and action, instead of emphasizing the will's role in the conscious direction of thought and action. As we have seen, Bain described the will as "a machinery of detail," subserving habit formation and denied that volitional power was fundamental.

A second reason for focusing on Tyndall, Clifford and Huxley is that they deliberately went outside of intellectual circles for audiences. Tyndall frequently delivered lectures to groups of working men. The two lectures which led up to Huxley's automata address--"On the Physical Basis of Life" (1868) and "Descartes' Discourse on Method" (1870)--were delivered to Christian groups. Furthermore, each of these thinkers distributed their lectures widely. The reaction to the 1874 papers must be seen partly as a consequence of the successful dissemination of these views, rather than, or in addition to, their radical character in scientific circles.
91. Shadworth Hodgson had espoused the epiphenomenalist position somewhat earlier than these thinkers, but was not as effective in bringing attention to his views. Hodgson maintained that consciousness was efficacious in his work *Time and Space* (1865). However in *Theory of Practice* (1870), Hodgson maintained that states of consciousness do not have any effects upon the nervous system. See Perry, *Thought and Character of William James* (Boston: Little Brown & Co., 1935), pp. 615-17 for a brief account of the contrast between the views of James and Hodgson. The reasons for Hodgson's conversion of the doctrine are unclear. The epiphenomenalist position, however, seems to follow from his thoroughgoing phenomenalism, which is a more rigorous version than that held by Tyndall, Huxley and Clifford.


93. Tyndall, "Scientific Materialism," (Presidential Address to the Mathematical and Physical Section of the British Association at Norwich, 1868), reprinted in *Tyndall, Fragments of Science*, 2:85.

94. Ibid., p. 85.

95. Ibid., p. 86.

96. Ibid.


99. Ibid., p. 313.

100. Ibid., p. 315.

101. Ibid., p. 317. Tyndall noted that Spencer's doctrine overthrows

"Mr. [John Stuart] Mill's restriction of experience . . . [that] ignores the power of organizing experience furnished at the outset to each individual . . . [and] the different degrees of this power possessed by different races and different individuals of the same race."
and he quoted Spencer to the effect that the "European inherits from twenty to thirty cubic inches more of brain than the Papuan." Ibid. Bain also ascribed to the doctrine of inherited experience, although he qualified some of Spencer's views. See The Emotions and the Will, 3rd ed. (New York: D. Appleton, 1875), pp. 48-53.


103. Ibid., p. 318. Tyndall wrote: "our states of consciousness are mere symbols of an outside entity which produces them and determined the order of their succession, but the real nature of which we can never know." Ibid., p. 318. Here we see Kantian phenomenalism and the two worlds view of Lange, employed to avoid taking full responsibility for the implications of these views. Given the prestige of science, it is not surprising that others were willing to draw out the implications of these views.

104. Ibid. Tyndall's real concern seemed to be combatting the despotism of dogmatic religious systems through the purging and cleansing action of science. He did not deny that man had valid religious impulses but instead "set forth equally the inexorable advance of man's understanding in the path of knowledge, and the unquenchable claims of his emotional nature which the understanding can never satisfy." Ibid., p. 319.


106. Ibid. Clifford's scientific optimism clearly raises the possibility that science will not limit itself to the domain of the understanding.

107. Ibid., p. 726.

108. Ibid., p. 728.

109. Ibid.

110. Ibid., p. 729.

111. Ibid.

112. Ibid., p. 731.

113. Ibid., p. 732. Helmholtz's theory was also cited by Tyndall but he failed to draw out the implications that Clifford did.

114. Clifford says, "The actual reality which underlies what we call matter is not the same thing as the mind, is not the same thing as our perception, but it is made of the same stuff." (Ibid., p. 733) In a later article the doctrine of mind-stuff is presented as a solution to the problem of the nature of the Kantian thing-in-itself. W. K. Clifford, "On the Nature of Things in Themselves," Mind 3 (1878):57-67. Clifford's doctrine of mind-stuff had an impact on the writings of G.
J. Romanes. James attacked the doctrine in *Principles of Psychology*, 2 vols. (New York: Henry Holt, 1890), 1:chap. 6. Many commentators have noted that Clifford's mind-stuff looks suspiciously like matter:

"This panpsychism is nothing but a thinly veiled materialism, for Clifford's 'mind-stuff' a daring enough conception in appearance, is in fact a highly mixed metaphysical notion which on closer scrutiny shows itself as in no essential different from ordinary 'matter'," (Rudolf Metz, *A Hundred Years of British Philosophy* [London: George Allen and Unwin, Ltd., 1938], p. 124.)

115. Clifford may be one of the first to dismiss statements, such as "the will influences matter," on the grounds that they are nonsense, i.e., "a combination of words whose corresponding ideas will not go together." Clifford, "Body and Mind," p. 729. also maintained that we should believe only what we can prove.


117. See Tyn dall, "Apology for the Belfast Address" (1874), reprinted in *Fragments of Science*, 2:222.

118. In one sense Huxley was simply upholding common sense against the phenomenalism of Tyndall and Clifford. The every day process of perception attests to the production of mental states from physical sensations. Of course, such an appeal to common sense could be, and was, turned against Huxley, for we have similar convincing first-hand experience of the influence of mental states upon bodily events.


120. An earlier form of this paper was delivered as a Sunday evening "lay sermon" in Edinburgh on 8 November 1868. It was subsequently published in *Fortnightly Review* 5 n.s. (1 February 1869):129-45. In this article Huxley credits Hume with establishing the limits of philosophical inquiry. The relative contribution of Humean and Kantian phenomenalism to Huxley's thought deserve closer examination.


122. Ibid., p. 141. Huxley added: "This union of materialistic terminology with the repudiation of materialistic philosophy, I share with some of the most thoughtful men with whom I am acquainted." Ibid.

123. Ibid., p. 143.

124. Ibid., p. 143. Huxley's description of the common reaction to materialism is so vivid that I cannot resist quoting it. After stating that,

"As surely as every future grows out of past and present, so will the physiology of the future gradually extend the realm of matter and law until it is co-extensive with knowledge, with feeling and with action." (Ibid., p. 143)

he says,

"The consciousness of this great truth weighs like a nightmare I believe, upon many of the best minds of these days. They watch what they conceive to be the progress of materialism, in such fear and powerless anger as a savage feels, when during an eclipse, the great shadow creeps over the face of the sun. The advancing tide of matter threatens to drown their souls; the tightening grasp of law impedes their freedom; they are alarmed lest man's moral nature be debased by the increase of his wisdom." (Ibid., p. 143)

125. Ibid., p. 145.

126. Ibid.

127. Bibby reports that this article sent the issue of *Fortnightly Review* into seven editions. T. H. Huxley, p. 103. Huxley added the following note to the version of this essay reprinted in his *Collected Essays*:

"I cannot say I have ever had to complain of lack of hostile criticism; but the preceding essay has come in for more than its fair share of that commodity." (1:165)

He then referred the reader to the first chapter of Foster's *Textbook of Physiology*, which presumably provided further support of the doctrines presented in this essay. Ibid.
128. Collected Essays, 1:166-98.

129. See n. 22 above.

130. Ibid., p. 191.

131. Ibid., p. 192.

132. Ibid. The motion of man as a "self adjusting machine" did not appear in Huxley's 1874 address. Lewes later cited the fact that sensory feedback aids us in guiding actions as evidence against the automata theses.

133. Huxley, "Animals are Automata." Unless otherwise noted page numbers refer to the Nature version of this article. Other modern doctrines that Huxley traced back to Descartes include the view that the brain is the organ of sensation, thought and emotion (p. 362); that movement is effected by a change in the matter of bodies (muscles) (Ibid.); and that sensations result from motion in nerve substance (p. 363). In addition, he notes that Descartes formulated a physical theory of memory which "is essentially at one with all our present physical theories of memory." Ibid.

134. Ibid., p. 364.

135. Ibid. This discussion was based on a reading of Goltz's work and his own replication of some of these experiments. See "Animals are Automata," Fortnightly Review, p. 568, n. 1.


137. Nature, p. 365. Huxley, employing the same line of reasoning as Clifford, stated that although we can only directly observe consciousness in ourselves, the principle of continuity, "forbids one to suppose that any natural phenomena can come into existence suddenly and without some precedent, gradual modification tending towards it." Ibid. Huxley also pointed out that the structure which appears to be the organ of consciousness in ourselves—the cerebrum—is found in a less highly developed condition in lower animals. Huxley also stated that acceptance of his assumption that animals are sensitive is more likely to lead to their humane treatment. While this point has no bearing on the facts of the matter, it probably appealed to anti-vivisectionists in the audience.

138. Ibid., p. 365.

139. Ibid.

140. We will see that later criticism, particularly the critique of William James, was based on this point. For a consistent evolutionary theorist, every process that persists must serve some
survival value and therefore, must have some function.

141. Ibid., p. 365. In the Nature version, Huxley simply asserted that states of consciousness cannot cause motions. In the Fortnightly Review he presented evidence in support of this view, saying,

"The frog walks, hops, swims, and goes through his gymnastic performances quite as well without consciousness, and consequently without volition, as with it." (Fortnightly Review, p. 575.)

He bolstered this evidence with a compelling analogy:

"The consciousness of brutes would appear to be related to the mechanism of their body simply as a collateral product of its working, and to be as completely without any power of modifying that working, as the steam-whistle which accompanies the work of a locomotive engine is without influence on its machinery." (Ibid.).

It has been pointed out that this analogy does not achieve what Huxley might have hoped. While the steam is a byproduct of the machine it does have some "influence" on the machinery. If it weren't given off, the machine would blow up. While this does tell against Huxley's use of the analogy, it only serves to raise consciousness to the status of a flywheel for the body.

Huxley also increased the efficiency of the brain vastly by altering some nomenclature in the Fortnightly Review version. "sensigenous molecules" became "ideagenous molecules" in that version. (Ibid.)

142. Huxley says,

"It is experimentally demonstrable - anyone who cares to run a pin into himself may perform a sufficient demonstration of the fact - that a mode of motion of the nervous system is the immediate antecedent of a state of consciousness. (Ibid.)

143. While these thinkers all assert that conscious states are incapable of producing physical events, it is not clear whether they also believe them incapable of producing other conscious events. Shadsworth Hodgson seems to be the only thinker who explicitly held both positions.

144. Ibid., p. 366.
145. Ibid.
146. Ibid.
147. Huxley's denial of metaphysical materialism can be seen in his articles "On the Physical Basis of Life" and Descartes' "Discourse on Method." Lenin asserted that Huxley's "agnosticism serves as a figleaf for his materialism." Quoted in Bibby, T. H. Huxley, p. 63. A Hobbesian conception of freedom, with freedom meaning absence of external constraint was alluded to in the Fortnightly Review version of "Animals are Automata," pp. 575-76.


149. Spalding's work is discussed in Gray "Prerequisite to an Analysis of Behaviorism," pp. 367-71. Gray's article is blatantly biased against Huxley, Tyndall and Clifford, and misrepresents the version of materialism they held.

150. See J. B. S. Haldane "Introducing Douglas Spalding," British Journal of Animal Behavior 2 (1954):1 for a brief discussion of this work. The evidence of instinctive behavior in animals strained the explanatory framework of sensationalist doctrines. For an account of how this evidence was accommodated, see Richards, "Influence of Sensationalist Tradition."

151. The behaviors investigated included pecking in chicks, and fear of sparrowhawks in chicks. See Hearnshaw, British Psychology, pp. 89-90.


153. Ibid., p. 179.

154. Ibid. Gray contends that this employment of the locomotive analogy originated with Spalding. "Prerequisite to an Analysis of Behaviorism," pp. 371-72. He argues that Huxley's employment of it demonstrates that he borrowed the automata doctrine from Spalding. Actually the analogy predates both thinkers; it appears in Büchner's Kraft und Stoff. Of course the fact that both Huxley and Spalding employed the analogy can not demonstrate that they borrowed it from each other or from Büchner. The locomotive was a powerful symbol of industrial progress and it is not at all surprising that these writers should draw on it for the purpose they did.


156. Ibid. Spalding was responding to an apparent misunderstanding of the doctrine by A. R. Wallace. See Nature 10 (October 1874):502-503. This letter, in turn, was an attempt to clarify an apparent misinterpretation of the doctrine by another correspondent. Ibid., p. 438. With so much misunderstanding it is not surprising that Huxley chose to publish the Fortnightly Review version.
158. Many of these thinkers failed to note that the principle was violated by one-way causation. The logic of the inductive arguments Huxley presented is also faulty. He argued that conscious states are invariably paired with some activity of the nervous system. To complete this induction, according to Mill's canons, we would need to show that conscious states are invariably absent in the absence of nervous activity. But in destroying the nervous system, we are destroying the ability of the mind to indicate its presence.

The efforts of the Society for Psychical Research has a bearing on this issue. If evidence could be found of a disembodied consciousness, we could no longer maintain the absolute dependence of mental activity on physical activity. And if evidence could be found of such conscious states having an impact on physical events then the principle of conservation of energy would have been shown to have limited applicability.

159. John Tyndall, "Apology for the Belfast Address," 2:222. In his title, Tyndall is employing "apology" in its theological sense.

160. James Martineau attacked Tyndall along these lines, saying that he was overstepping the bounds of science in his pronouncements and that the properties he read off from matter were those he had previously read into matter. For Martineau, science investigated the order of things, the "how," while theology treats of their origin. Martineau's first comments on Tyndall were delivered in an opening address at Manchester New College, London, 6 October 1874 entitled, "Religion as affected by Modern Materialism." See also Tyndall, Fragments of Science, pp. 224-50. Tyndall's reply, "Materialism and its Opponents," was printed in Fortnightly Review 24 (November 1875):579-99. A rejoinder from Martineau appeared in two parts as "Modern Materialism: its Attitude Toward Theology," Contemporary Review 27 (1876):323-46; 522-48. Clifford took up issues concerning the definition of matter in developing his doctrine of mind stuff. Lewes examined the same issue with somewhat different results, as we will see.


Articles published later include: L. S. Bevington, "The Personal Aspect of Responsibility,"; L. S. Bevington, "Determinism and Duty," Mind 5 (1880):30-45; E. Montgomery "The Unity of the Organic individual," Mind 5 (1880):465-89. These articles display a variety of reactions. In some cases there was an outright rejection of the doctrine. In others the doctrine was reconciled with moral and/or theological precepts.
162. Including Spencer and Bain.

163. For Huxley on this point see above, n. 125. Bain did not eschew introspection, despite his allegiance to other aspects of the naturalist program.

164. It is not entirely clear that Huxley dismissed outright the possibility of a science of mind.

165. Of course we could learn something about the machine from the amount of steam it gives off, i.e., what discharge is required to maintain the system in some steady state. Of course we would probably learn a great deal more, more efficiently, by examining the engine.

166. There is some irony in the fact that Carpenter, who did so much to popularize the notion of automatic activity, was forced to take a stand against the doctrine. Carpenter's criticism of the doctrine appeared also in Contemporary Review 25 (1875):397-416; 940-462.


168. Ibid., p. xxvii.

169. Carpenter wrote,

"The direct Testimony of Consciousness as to any one of its primal cognitions, must be held, as it seems to me, of higher account than the deductions of Reason from data afforded by other cognitions, constituting, in fact, a "base of verification" to which all our logical triangulation must be worked back, if we desire to test its validity. And no fact of consciousness as to which Mankind in general is in accord, can be disproved save by the contradiction afforded by some other primary cognition of superior validity. (Ibid., p. xv)

As we have seen, this first-hand experience of the efficacy of will (or "purpose") presented problems for those who thought that psychology should be scientific but held that introspection was a central method. Here Carpenter placed his finger on the heart of an important problem. Advocates of scientific psychology had argued that it would clarify ethics and provide aid in solving social problems. Yet here was a "science of man" that denied the very characteristics regarded as necessary for morality and social progress.

170. Ibid., pp. xxiv-xxv; xliii-xl ix.

171. Ibid., pp. xxxix-xl iii.

172. Ibid., p. xxii.
173. Attention played an important role in the theory of James Ward which we will examine more closely in the next chapter.


175. Lewes, Physical Basis of Mind, pp. 351-52.

176. More properly, the problem stems from the way in which the classification system is employed. Lewes says, "Physical facts are mental facts expressed in objective terms, and mental facts are physical facts expressed in subjective terms." (Ibid.) Dualism developed on the basis of this differentiation of aspects because,

"Each group was personified and isolated. The one group was personified in Spirit - an existent in every respect opposed to Matter, which was the existent represented in the other group." (Ibid., p. 357)

This process of reification led to concepts of two substances opposed in all their properties. Given this situation, Lewes wrote, it is not at all surprising that there should be problems in relating the two.

177. Ibid., pp. 353-55. Lewes does not deny that mechanical explanation can be employed in the biological sciences. What he does assert is that it can never provide a full account of these problems,

"A complete theory of the mechanical relations of the organism, however, valuable in itself, would be worthless in the solution of a biological problem, unless supplemented by all that mechanical terms are incompetent to express." (Ibid., p. 355)

178. Ibid., p. 433. Lewes included as automatists Huxley, Laycock, Dr. Drysdale and Mr. Spalding. He also mentioned that Schiff had suggested the doctrine hypothetically in his Lehrbuch der Physiologie 1858, p. 212 and that Hermann mentioned it as entertained by physiologists (unnamed) in Physiology, translated by Gangie, 1875, p. 511.

179. Ibid., p. 441. These theses are presented and discussed in the chapter, "Is Feeling an Agent?" which had been published earlier in the Fortnightly Review. See n. 174 above.

180. Sentence is the subjective aspect of Sensibility which includes, "all psychical states, both those classified under sensation, and those under Thought," Ibid., p. 403. Consciousness, as a special mode of sentence, refers to psychical states,

"whereby we not only have a sensation, but also feel that we have it; we not only think, but are conscious that we are thinking; not only act, but are conscious of what we do." (Ibid.)
181. Ibid., pp. 443, 447.

182. Ibid., pp. 460-61. Lewes wrote:

"I conceive, therefore, that a theory which reduces vital activities to purely physical processes is self-condemned . . . . an organism is a peculiar kind of a mechanism, the processes in which are peculiar to it; and among those processes there is one which results in what we call Sensibility. This Sensibility is a factor which raises the phenomena into a different order." (Ibid., pp. 356-66.)


185. Lewes wrote that,

"the feeling which accompanies one muscular contraction is itself the stimulus of the next contraction; if anywhere during the passage the hand comes upon a spot on the surface which is wet or rough, the change in feeling thus produced, although a collateral product of the movement, instantly changes the direction of the hand, suspends or alters the course . . . Now this is precisely what no automaton can effect, unless for changes that are prearranged. A steam-engine drives its locomotive over the rails, be they smooth or rough, entire or broken; it whistles as it goes, but no whistling directs and redirects its path." (Physical Basis of Mind, p. 461).

Lewes would have more difficulty employing such an argument against today's machines.

186. Ibid., p. 458.

187. The automaton theory was examined in Principles of Psychology (New York: Henry Holt, 1892), chap. 5. I will be examining the arguments presented in "Are We Automata?" Mind 4 (1879): 1-22. James regarded Shadworth Hodgson's version of the theory, presented in Theory of Practice (1870) as the strongest case of the argument.

188. Ibid., p. 3.

189. Ibid., pp. 4-5.

190. James' account of how consciousness achieved this was given in ibid., pp. 6-14. For a modern reader James' analogies tell against his argument. He claimed that the indeterminacy characteristic of the brain is like the indeterminacy that prevails in the ovum. It is, he
"a matter of accident whether a woman's first child be a boy or a girl. The ovum is so unstable a body that certain causes too minute for our apprehension may at a certain moment tip it one way or another." (Ibid., p. 5)

The "accident" here is, of course, only apparent; a consequence of our ignorance of the underlying conditions. The same may be true of the apparent indeterminacy of the brain. James was aware that there might be some problems with his argument. He says,

"I moreover feel that the unstable equilibrium of the cerebrum which forms the pivot of the argument just finished may, with better knowledge, be found perfectly compatible with an average appropriateness of its actions taken in the long run." (Ibid., p. 21).

191. If consciousness selected those actions likely to represent an organism's best interests, and if these actions could be passed on to the next generation (after having become habitual), then the nervous system would become mechanically incapable of wandering from certain lines of interest. Ibid., pp. 15-16.

192. Ibid., p. 21.
193. Ibid., p. 16.
194. Ibid., pp. 17-18.
195. Ibid., pp. 16-17.
196. Ibid., pp. 21-22. James wrote:

"It is really monstrous to see the prestige of "science" invoked for a materialistic conclusion, reached by methods which, were they only used for spiritualistic ends, would be hooted at as unscientific in the extremes." (Ibid., p. 21)

It must be pointed out that Tyndall and Huxley's neo-Kantian phenomenalism enabled them to avoid subscribing to genuine materialism.

197. Ibid., p. 22.
198. Ibid.
199. Ibid., p. 1.

201. Bain, "On the Definition and Problem of Consciousness," Mind 3 (1894):356. Although this article was not written until the 1890's, Bain was expressing ideas that had run through his earlier writings.

202. Bain, Emotions and Will, 3rd ed. (New York: D. Appleton, 1875 [1859]), p. 344. Unless otherwise noted all references will be to the third edition of this work.


204. Lewes, Physical Basis of Mind, p. 414.

205. Ibid.

206. Two of the central participants had died by that time. Lewes died in November 1878 and Clifford died in March 1879.

207. For example, Lewes cited Huxley's frog and French soldier as cases which displayed the crucial role of sensory feedback (a form of sentence) in guiding conduct. Lewes, Physical Basis of Mind, pp. 445-50.

208. Robert Young argues that as experimental sensori--motor physiology became scientifically rigorous it turned away from questions concerning adaptive, biologically significant functions, i.e., it became psychologically insignificant. Young, Mind, Brain and Adaptation, pp. 246-47. Speculation about the psychological bearings of physiological doctrines did continue. However, prominent physiologists, such as Charles Sherrington, were doubtful about the value of neurophysiology for the study of mind. Hearnshaw, British Psychology, p. 81.

209. The work of Hugo Münsterberg was one of the factors leading to a resurgence of interest in the issue. Münsterberg accepted the conclusion that psychic activity could not be represented physiologically, but this led him to conclude that psychic activity must be eliminated from the science of mind. Münsterberg's arguments were directed against Wundt's doctrine of apperception, but applied equally to Ward's concept of attention. Münsterberg's work, Beiträge zur experimentellen Psychologie (1886) was discussed by Croom Robertson in Mind 15 (1890):234-45. Ward's "Modern Psychology: A Reflexion," Mind 2 n.s. (1893):54-82 specifically criticized Münsterberg as one of the psychologists who had concluded that mind processes that can not be correlated with brain processes ought to be "cast aside as dross or dreams." Ibid., pp. 54, 75-81. In his broader attack on naturalism, Ward also criticized the work of E. Haeckel. On Münsterberg's work see also Bruce Kuklick, The Rise of American Philosophy: Cambridge Massachusetts, 1860-1930 (New Haven: Yale University Press, 1977), pp. 196-214.

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Andrew Seth, a member of the group of Oxford Idealists, discussed Münsterberg's work in "The 'New' Psychology and Automatism," an address to the Edinburgh Philosophical Society, November 9, 1892; reprinted in Seth, Man's Place in the Cosmos and other Essays (New York: Scribner's Sons, 1897).


211. See n. 161 above. James Knowles was still editor of the Contemporary Review when this series of articles was published.


214. Ibid., p. 774.

215. The doctrine of "lapsed intelligence" asserted that instincts, along with other "automatic" actions, were, at one point in the organism's evolutionary history, intelligent or voluntary actions. Mivart protested that this theory forces us to admit that

"a conscious, deliberative, discriminative faculty must once have been exercised by wasps, bees and ants in all such actions as are now instinctive, and these creatures must once have possessed a rationality of which the course of ages has deprived them." (Ibid., p. 783.)

Mivart argued that this view cannot be accepted because their activities can be explained without assuming the existence of such faculties. Ibid., p. 784. In his criticism of these accounts, Mivart anticipated Lloyd Morgan's canon of parsimony.

216. Ibid., pp. 783-84.

217. Ibid., pp. 787-88. Mivart did not object to the materialism implied by the evolutionary argument because he felt that matter possessed "active powers" and "latent potentialities." Ibid.


219. Ibid., p. 544.

220. Ibid., p. 146.

221. Quoted in ibid., p. 736.

224. Ibid.
225. Ibid., pp. 739, 744-47.
226. Ibid., p. 146.
228. Ibid., p. 366.
229. Ibid., p. 367.
230. Ibid., p. 373. Argyll cited Tennyson's poem "Two Voices" as an accurate depiction of this duality of consciousness.
231. Ibid., p. 375. Here evolutionary theory is interpreted as providing support for an intuitionist epistemology. The range of interpretation given to evolutionary theory was indeed wide.
232. Ibid., pp. 374-37
234. Ibid., p. 245.
235. Ibid.
236. Ibid., pp. 248-49, 251.
237. Ibid., p. 249.
238. Ibid.
239. Ibid.
241. Ibid., pp. 41-42.
243. Ibid., p. 407. Questions like "is free-will normally distributed?" may have occurred to Galton.
244. Ibid.
246. Ibid., p. 412.
249. Ibid., p. 248.
250. Ibid., pp. 248-49.
252. Ibid., pp. 252-54.
253. Ibid., p. 254.
254. Ibid., p. 255.
255. Ibid., p. 256. Maudsley argued that the moral faculty, with its physical base, is particularly vulnerable since it is a more recent acquisition of mental development and therefore, "the first to go in mental dissolution." Ibid. Of course, on this view, once you are no longer producing children, you are free to degenerate without liability.
256. Ibid., p. 257.
257. Ibid., p. 260.
258. Young, *Mind, Brain and Adaptation*, chaps. 6, 7, 8.
259. Ibid., pp. 235-36. Despite this fact, Bain did formulate a motor theory of thought prior to 1873. See Chapter 4, section entitled "The Physical Embodiment of Mind."
261. Young, *Mind, Brain and Adaptation*, pp. 246-48. Young writes: "The problem that Ferrier's work left for the twentieth century was that of retaining scientific rigour, while regaining contact with biologically significant functions." (Ibid., p. 247.)
262. Bain, *Senses and intellect*, 2d ed. (London: Longmans, Green, Longman, Roberts, Green, 1864), p. 92; 3d ed. (New York: D. Appleton, 1868). Unless otherwise noted all references will be to the third edition of this work. Young makes a strong case for Bain's ties to this tradition. He argues that experimental sensori-motor psychophysiology was based upon the concepts of Bain and Spencer. Young, *Mind, Brain and Adaptation*, p. 246.


269. See Myra O. Smith, "History of the Motor Theories of Attention," *Journal of General Psychology*, 80 (1969): 243-57. Smith points out that improved knowledge of the physiology of the nervous system led to a shift from central to peripheral motor theories. In other words, as the feelings-of-innervation account was abandoned by theorists, including McDougall and Washburn, argued that kinaesthetic excitation plays an integral role in attentive processes. *Ibid.*, pp. 252-55.

270. Hearnshaw, *British Psychology*, p. 78. Sherrington later identified two distinct systems of muscular innervation: one responsible for maintaining muscular tension and postural attitude (tonic system) and one concerned with action and movement (phasic system). Hearnshaw wrote:

Sherrington himself was quick to see the implication for psychology that all movement takes place against a background of posture and tonic contraction; attitude is as significant as action, psychologically as well as neurologically." (Ibid., p. 80.)

272. Hearnshaw reports that Sherrington expressed doubts concerning the value of neurophysiology for the study of mind. Ibid., p. 81. Nevertheless, Sherrington's accounts of the synapse and reciprocal innervation influenced McDougall's early work in physiological psychology.

273. Mivart, "Instinct and Reason," p. 764. Others concluded that these introspected "facts" could not be reduced to physiological processes. This led some thinkers, such as Ward, to eschew physiological reductionism while others, such as Münsterberg, cast aside such problematic aspects of mind. Andrew Seth also belonged to the first group of thinkers. He wrote: "Volition is the action of a subject, and as such can not be phenomenalised." See "The 'New' Psychology and Automatism," p. 113.

274. As we have seen, Bain perceived the conflict with regard to the feelings-of innervation doctrine. He chose to "save the appearances" by giving priority to the introspective evidence. See n. 265 above.


276. Ibid., p. 356.

277. Ibid., pp. 356-57. Bain pointed out that there were continuities between animals and humans with respect to (1) cerebral structure, (2) the conditions under which pleasure and pain are manifested and (3) the agencies that elicit pursuit and avoidance.

278. Bain, "Respective Spheres of Introspection and Psychophysical Experiment," p. 42.


282. For Ward and Sully's views see, Chapter 9, section entitled "Will, Self and Attention," below. Stout's view is presented in "Voluntary Action," Mind 5 n.s. (1896):354-66. Alexander Shand, a graduate of Cambridge and close friend of Stout and McDougall published a series of articles on volition including, "An Analysis of Attention," Mind 3 n.s. (1894):449-73; "Attention and Will: A Study in Involuntary Action," Mind 4 n.s. (1895):450-71 and "Types of Will," Mind 6 n.s. (1897):289-325. I say "somewhat less intellectualistic" because most of these thinkers argued that cognition was prior to conation; i.e., that thought processes influence the course of volition.


285. See Chapter 10, below.

286. T. H. Green, "Can There be a Natural Science of Man?" *Mind* 7 (1882):1-23;161-85,321-48. These articles were the first part of Green's uncompleted work *Prolegomena to Ethics*. Green died suddenly in March 1882 and the work was published posthumously.

287. A note appended to the final part of this series by A. C. Bradley describes Green's intentions extremely well. Ibid., p. 348

288. Ibid., pp. 3-4.

289. Ibid., p. 161. Interestingly, Green addressed this caveat to "believers in 'anthropology'" not to psychologists.

290. Ibid., p. 173.

291. Ibid., p. 177.

292. Ibid.

293. Ibid., p. 178.

294. Ibid., p. 177.

295. Ibid., p. 185.

296. These include Huxley and Tyndall as discussed above, as well as James Ward, Andrew Seth, Bernard Bosanquet, Edward Caird and others.


298. Here the tie between Lange and H. Vaillinger's *Philosophy of 'As If'* is important. See Passmore, *A Hundred Years of Philosophy*, p. 98.
CHAPTER 7

DEBATES OVER ASSOCIATIONISM:
I. BACKGROUND TO THE DEBATES

Review of Associationist Doctrines

During the early nineteenth century associationism became the cornerstone of a program of individualistic social reform. The early utilitarians including Jeremy Bentham and John Stuart Mill, attacked aristocratic attitudes, demanded law and property reforms and argued that a rationalistic ethics could harmonize the hedonistically based interests of separate individuals. They maintained that a progressive society could be engineered if the moral disciplines were placed on a scientific basis. An opposition to all forms of a priorism was implicit in such a scientific approach, and this opposition became the hallmark of utilitarian thinkers. All the contents and all the processes of the mature mind were to be accounted for as products of experience. It was unacceptable to posit such entities as an ego or self, an independent will, a moral sense.

The adoption of empiricism as the philosophical underpinning of a program of social reform led these thinkers to regard psychology as the fundamental science. And since they were opposed to the positing of innate powers, an associationistic psychology was adopted. It was their view that all our knowledge is derived from particular sensations and ideas and that all our complex ideas and mental processes result from
the combination of such particulars through association. Since association was the sole means by which our knowledge was built up, the specification of the principles of association assumed a great importance within the tradition.

In the work of James Mill, John Stuart Mill and Alexander Bain, we have seen new developments in the continuing tradition of associationism. In this chapter I will examine reactions to and critiques of that tradition. While I am primarily interested in the debates that took place in *Mind* during the 1880's and 1890's it is important to show that there was a continuous tradition of opposition to associationism as employed by these thinkers. These opponents did not simply criticize particular formulations of laws of association, although some suggested alternative formulations. More often they attacked the very foundations of the program—the atomistic empiricism, dogmatic *a posteriori*ism, and the assumption that investigations of the human mind could shed light upon philosophical questions. Most of these thinkers were interested in reformulating philosophical disciplines, especially logic and ethics, and were less concerned with the impact of their critique upon psychology. Nevertheless a few individuals—most notably James Ward—produced a critique of empiricism and associationism and then proceeded to formulate an alternative psychology.

The purpose of this chapter will be to delineate the continuous tradition of opposition to empiricism and associationism and to depict how such critiques led to the formulation of an alternative view of mind. Before turning to these critiques it will be useful to review the
Utilitarian-Associationist program as developed by James Mill, John Stuart Mill and Alexander Bain.

James Mill

The work of James Mill clearly displayed the desired relationship between social reform, ethics and education, on the one hand, and psychology or a science of the human mind, on the other. It was Mill's view that the reform of education was an integral part of the reform of society and that the reform of education must be guided by a science of the human mind. The first step in any program of social reform must be to develop this science. As the foundation of his account of mind, Mill adopted David Hartley's views, purged of physiology. Both John Stuart Mill and Alexander Bain regarded this neglect of organic phenomena as a mistake, one which they sought to remedy in their own accounts of the human mind.

According to James Mill, a science of the human mind must be analytic, decomposing mental states and processes into their constituent elements. Underlying this methodological dictum was the atomistic assumption that all our knowledge is derived from particular sense experience. Mill's experientialism was even more radical than Locke's for he denied that there was any innate power of reflection. The sole fundamental characteristic of the mind was receptivity. There was no independent ego or self and there was no independent will. Knowledge consisted of groups and sequences of sensations and ideas formed by association. Sensations occur in an orderly fashion so that ideas—which are copies of sensations—occur in an orderly fashion.
Such order is preserved with the aid of association, so that we can be confident that our ideas mirror reality. To ensure that the order given in reality is preserved in our mental trains, Mill asserted that there was only one principle of association—association by contiguity. Sensations of ideas that are paired spatially or temporally become conjoined so that afterwards the presentation of one calls forth the other.

As this account may suggest, Mill also regarded the science of the human mind as a foundation for an empiricist philosophy. He denied that there was a process of association by resemblance (the principle of similarity). Thus he avoided positing a power in the mind to detect such resemblance, and eliminated the possibility of appealing to such a power for metaphysical purposes. However it was the secondary principle of frequency which had the broadest philosophical bearings. Association by contiguity was a function of the vividness of the sensations or ideas and of the frequency of pairing. When such elements are paired frequently they become tightly bonded, according to Mill. The resulting associations are virtually indissoluble. This subsidiary principle was employed to provide an empirical account of so-called necessary truths and an account of the origins of belief.

Mill's account of the intellectual powers was completely associationistic. He denied that there was any ego or self and defined consciousness as "the having of sensations." Mill provided a hedonic and associationistic account of the active powers (pleasure, pain, motives and will). These powers arise because all sensations have a hedonic
aspect. The pleasurable or painful aspect of sensations provide the springs of human action. Mill asserted that will is merely a peculiar state of consciousness that precedes action. Furthermore, this state of consciousness arises from the associations between sensations and ideas. In this manner, Mill sought to provide a mechanistic account of voluntary action or the will's control over bodily action.

This account of voluntary action provided a model for Mill's account of voluntary thought. An obvious problem for associationistic accounts of mental processes is to account for the deliberate and directed character of much of our thinking. Naturally, Mill maintained that there was no distinctive power, no ego or self, guiding our thought processes. Instead he argued that deliberate thinking is guided by an adjunctive idea dwelling alongside of the sequences of thought. This idea exerts its influence to determine the direction taken by the trains of ideas. Mill also insisted that we cannot directly control attention for it is solely a function of the pleasurableness of sensations and ideas. It is only by varying the pleasurableness of these elements that we can control attention.

Mill's descriptions of specific phenomena followed directly from his associationistic account of the mind. Memory involves the recurrence of previous states of consciousness. Mill asserted that an act of remembering involves reviving an idea of one's past self alongside of an idea of one's present self and running through all the connecting sequences of ideas. Even Mill recognized that this description violated our phenomenal experience: remembering is a much
more efficient process than it could ever be on such an account. However, Mill suggested that the sequences of ideas pass through our minds so rapidly that we later forget that they served the necessary bridging role. Such an account is, of course, post hoc. The problem of obliviscence or of apparent gaps in the continuity of consciousness was one addressed by John Stuart Mill. He concluded that to bridge such gaps we must either posit a self-conscious ego or maintain that the requisite continuity was provided by the physiological substratum. Alexander Bain adopted the latter of these two alternatives.

Imagination, according to James Mill, was nothing more than the combination of ideas into new sequences. The imaginative process is no different for the poet than it is for the merchant. The differences we perceive in the imaginative products of poets and merchants are due solely to differences in the content of the ideas and to the goals of each. That is, for the merchant the formation of new sequences of ideas is directed toward some end, whereas for the poet the sequence is its own end. Mill's account of imagination brings to mind Bentham's assertion that poetry is equivalent to pushpin in any hierarchy of values.

John Stuart Mill

John Stuart Mill adopted his father's opposition to all forms of a priorism, although his justification of a posteriorism was considerably more sophisticated. In addition he advocated an analytic approach for psychology which he regarded as the foundation for all the moral sciences (morals, politics and education).
While he regarded experience as the basis for all knowledge his view of experience was far less narrow than had been his father's. He argued that organic phenomena and cultural factors must be taken into account as circumstances shaping the human mind. Although he adopted the atomistic assumption that all knowledge comes from sensation, he argued that individuals may differ in their susceptibility to sensation. While he was opposed to the a priorism inherent in phrenology, he admitted that differences in bodily structure may play a role in shaping experience. Later in his career, he acknowledged that instincts may play a similar role in human behavior to that which they play in animal behavior.

Mill hoped that a subsidiary science of ethology could be established to determine how cultural factors influenced behavior. Although this hope was never realized, it is clear that he felt such factors played an important role. While Mill made few direct contributions to psychology, we can discern his position on empiricism and associationism in his critical comments upon the work of others. His comments upon his father's work are particularly valuable as he was not interested in undermining the doctrine, but in strengthening its weak points.

As mentioned above, Mill contended that organic phenomena must be taken into consideration in any account of the human mind. He argued that association by resemblance was as fundamental a process as association by contiguity. He pointed out that his father's account of contiguity as the revival of associated ideas presupposed the operation
of resemblance. In Mill's view there must be two basic principles of association.

Mill regarded his father's principle of indissoluble association as one of his most important contributions. Its value to John Stuart Mill is clear for he was concerned with providing an empirical account of so-called necessary truths in mathematics and logic. However he denied that it could be employed to account adequately for the origins of belief. According to Mill, principles of association could not provide a full account of this state of consciousness. He concluded that there is an inexplicable component in belief, beyond the mere combination of sensations and ideas.

Mill did not provide a detailed analysis of volition, but in several respects he deviated from his father's account. In the first place he argued that the earlier account was too intellectualistic, that desire is not merely an idea of pleasure, but can directly serve to initiate action. While he accepted the associationist account of the mechanism of attention, he injected it with a further power. Attention, he said, can increase the intensity of ideas thereby amplifying their impact upon subsequent trains of ideas.

Finally, he posited a power of self-determination in the individual, arguing that we have the power to modify our own character. Mill did not propose that an ego or self directed this process; he followed his father in objecting to the postulation of such entities. However such a power of self-determination did presuppose a reflective component in consciousness. John Stuart Mill argued, against his
father, that consciousness is not simply "the having of feelings." He maintained that the mind is aware of itself as past and future and that this awareness is an integral aspect of consciousness. It is this inexplicable awareness that distinguishes memory from imagination, that is, knowledge representing reality from fantasy. However, Mill acknowledged that this awareness cannot be accounted for on associationist principles. Despite having identified one critical weakness of the associationist account, he did not resort to the postulation of an ego as a solution to the problem.

Mill was critical of other aspects of his father's account. As we have already noted, associationists have difficulty in accounting for gaps in consciousness; the skips and jumps we experience between apparently unconnected ideas. John Stuart Mill discussed this problem openly and examined a number of possible solutions, including the postulation of a self or ego and the assumption of unconscious mental processes. Neither of these alternatives would have been acceptable to his father. While Mill did not advocate a specific solution to this problem, his discussion of the matter shows his willingness to openly face problems with the associationist account.

As we have already mentioned, Mill's examination of associationist psychology was guided by a desire to strengthen the a posteriori account of mind. While carefully examining the account he identified a number of weak points, without really providing remedies. Mill's successor, Alexander Bain, attempted to fortify the account at several of these weak points.
Alexander Bain

Alexander Bain reiterated the view that applied disciplines—the tools of social progress—should be based upon the findings of psychology. He maintained that education, politics, ethics and law are derived from psychology, as are grammar and rhetoric. While Bain held that psychological results have a bearing upon philosophical matters, he also asserted that certain so-called philosophical problems, such as the nature of belief, the origin of conscience and the nature of free will, could only be treated adequately by psychology. In Bain's view, psychological analysis was not just a necessary first step, it sometimes could provide the full account.

Like the earlier associationists, Bain claimed that all our knowledge is built up from particular sense experience. Like J. S. Mill, Bain rejected the view that there are no differences between individuals at birth. However, in so doing he did not reject experientialism, but redefined experience as extending beyond the experience of the individual. While admitting that there are such things as inborn capacities, he maintained that these were the product of inherited experience.

Bain also emphasized the role of physiological conditions underlying mind. As we have seen, he sometimes appealed to these physiological underpinnings to shore up the weakest points of the associationist doctrine. For instance he gave phenomenalism a new twist by asserting that sensations have a muscular component. This muscular
component was then employed to provide a more thoroughly mechanistic account of bodily and mental volition. Bain followed James Mill in asserting that the same processes underlie bodily and mental volition. By positing a muscular component in sensation which continues to reside in the corresponding idea, Bain felt that he had solved the problem of how ideas can instigate action. The muscular component in ideas also served to provide an account of mental attention as the parallel of bodily attention.

Bain's account of the intellect contrasted with earlier accounts. James Mill had posited receptivity as the sole fundamental characteristic of the mind. John Stuart Mill found it necessary to posit a reflective component in consciousness. Bain was not willing to go as far as John Stuart Mill had, but saw problems with James Mill's account. He therefore cited three fundamental properties of the mind: discrimination, agreement and retentiveness. The first of these is a slightly revised version of James Mill's receptivity while the last two underlie the operation of principles of association.

Bain, like John Stuart Mill, maintained that there were two fundamental principles of association: contiguity and similarity (resemblance). His interest in creative genius and the problem of scientific discovery frequently led him to assert that association by similarity was the more important of the two principles.

Bain formulated two further principles of association. His principle of compound association described how emotion and volition influence intellectual functions. With the help of this principle he
was able to improve James Mill's account of how adjunctive ideas function to guide association. The principle of constructive association described the conditions governing creative thought in both its intellectual and imaginative forms.

Although Bain was willing to admit new elements of experience into his account, he remained as opposed to the hypostatization of mental functions as James Mill had been. I have already mentioned his rejection of John Stuart Mill's conclusion that there is an irreducible and inexplicable element in belief and in our consciousness of self. John Stuart had claimed that our awareness of self as past and future played an important role in memory. Such awareness enables us to distinguish between memory and imagination, that is between ideas representing reality and those that are simply fantasy. To vouchsafe the veracity of memory while avoiding the postulation of an irreducible component of consciousness, Bain offered an organic account of memory. Retentiveness was posited as a fundamental property of the mind and the physiology of ideation was said to be identical to the physiology of sensation. Bain's organic account of memory did help explain certain psychological phenomena, such as the fact that cramming is not an effective learning device. Nevertheless this account of memory later became one of the targets of James Ward's critique.

In sum, we have seen how these three thinkers employed empiricism and associationism as the basis for applied sciences and as an indispensable aid in providing answers to philosophical questions.
Critiques of Associationism

The reactions to associationism that we will be describing in the remainder of this chapter were, to a large degree, reactions to the empiricist precepts of these philosophers. However, as empiricism and associationism were inextricably linked in the writings of the Mills and Bain, a critique of one served to indict the other.

The individuals whose critiques we will be presenting in this chapter—William Hamilton, James Martineau, Shadworth Hodgson, T. H. Green, F. C. Bradley, Henry Sidgwick and James Ward—were all aided in formulating their critiques by study of German philosophical and theological thought. It may be useful to identify some common threads running through their critiques before turning to each one individually. First of all, they all pointed out that the degree of relation that exists among objects of consciousness could not have arisen from the contingent pairing of atomistic units such as those—described by the associationists. Consciousness has a unity and an internal relatedness that belies any building block account of its origin. The function of consciousness is, in large part, to integrate the objects presented to it, not to passively register combinations of impressions presented in experience.

Second, they argued that the fundamental process involved in mental growth was not the associational one of the building of complex units out of simple elements. Instead it involved a process of differentiation within the total continuum of consciousness, a process revealing increasing diversity and complexity among the objects of
conscience. Furthermore, consciousness was selective and thereby able to guide this process of differentiation.

In the third place, the integrating and selecting functions of consciousness suggested another problem with the empiricist account: the inadequacy of their phenomenalistic account of the subject or self. On these alternative accounts, it is necessary to postulate a non-phenomenal subject, an ego which performs these integrating and selecting functions. The notion of an attentive subject became important in these new accounts.

Fourth, several of these thinkers criticized the overly intellectualistic accounts of the associationists. They argue that the role of emotional factors must be taken into consideration in any adequate account of mental functioning. The notion of "interest" as an emotional factor governing mental attention played a role in several of the accounts we will describe.

Finally, almost every one of these thinkers insisted that psychological and philosophical investigation must occupy distinct realms. This was seen most clearly in the denial that the laws of association could have any bearing upon logic. These thinkers clearly demarcated questions concerning the origins of ideas (or judgments) from questions concerning their validity.

To summarize, most of the critics of associationism regarded consciousness as more dynamic in nature than had the associationists, and attributed that dynamism to the activity of the subject.
Furthermore, these critics insisted upon demarcating psychology from philosophy.

Early Critiques of Associationism

The first wave of reaction to the associationist doctrine appeared between 1840 and 1865 in the writings of William Hamilton, James Martineau and Shadworth Hodgson. While these individuals are usually overlooked in histories of the British associationist tradition, they formulated many of the same arguments that were later so devastating to empiricism and associationism. Furthermore, the writings of each stimulated responses from other well-known figures. Hamilton's views stimulated a reply from John Stuart Mill, Martineau's objections were noted by Bain, and Hodgson's views informed William James' critique of associationism. A brief examination of each of their critiques should help us dispel the notion that the reaction against empiricism and associationism in the 1870's and 80's was simply the outcome of an invasion by German thought in the late nineteenth century.

William Hamilton

William Hamilton appears to have been the first British writer to have adopted the tripartite division of mind into cognition, feelings (or emotion) and conation (or will). As we have seen, Alexander Bain followed Hamilton in this convention and claimed that it led him to a broader conception of mental functioning. Despite the potential in this broader conception of the functions of the mind, Hamilton focused almost exclusively upon the processes of cognition. Six faculties of cognition
were differentiated: perception, the conservative faculty (memory), the reproductive faculty, the representative faculty (imagination), the elaborative or discursive faculty and the regulative faculty. The first four of these played important roles in the subjective operations of our minds. Hamilton's account of their operation was tantamount to an outline of an alternative non-associationistic psychology, and for this reason is worth examining.

In the first place, Hamilton claimed that in perception we "first obtain a general knowledge of the complex wholes presented to us by sense, and then, by analysis and limited attention, obtain a special knowledge of their several parts." This contradicted the view of associationists, such as James Mill, who maintained that "we first obtain a particular knowledge of the smallest parts to which sense is competent, and then, by synthesis, collect them into greater and greater wholes."/5/ In perception, Hamilton claimed, the dissociating consciousness plays an important role, prior to any operation of association.

Hamilton's account of the role played by association in the reproductive faculty differed significantly from that given by James Mill. Mental life was depicted as a highly interconnected whole, both in its conscious and latent aspects. This conception underlay his formulation of the law of redintegration which asserted that "those thoughts suggest each another, which had previously constituted the same entire or total act of cognition."/6/ Hamilton regarded this formulation as effecting a reduction of association to a single law.
However, he also addressed the issue of how thoughts might acquire their position within this totality. Here he offered a reformulated version of the principles of contiguity and similarity; a version which subsumed both under his law of redintegration. Hamilton wrote:

to the same entire or total act belong as integral or constituent parts, in the first place, those thoughts which arose at the same time or in immediate consecution; and in the second, those thoughts which are bound up into one by their mutual affinity. Thus, therefore, the two laws of Simultaneity and Affinity are carried up into unity in the higher law of Redintegration or Totality, and by this one law the whole phenomena of association may be easily explained.77

One important thing to note about this redescriptions of the reproductive faculty is the emphasis placed upon the interrelatedness of ideas and their interdependencies. This unified view of consciousness was proposed as an alternative to the considerably more fragmented view offered by the associationists.

Furthermore, Hamilton's doctrine of latent mental modifications gave a completely different character to his descriptions of the processes of reproduction. Like the associationists, Hamilton asserted that man is always conscious as long as the necessary processes of discrimination are taking place. Attention, a process which plays an important role in perception, is also merely a form of consciousness, i.e., concentrated consciousness. However, Hamilton also postulated latent mental modifications which are potential forms of conscious states. It was with regard to these latent mental modifications that Hamilton spoke of unconscious cerebration. Unconscious cerebration occurs when the effects required to bring these modifications to consciousness do not pass the threshold of consciousness. The
conservative faculty or memory is the repository of such latent mental modifications. According to Hamilton, no state of consciousness is ever obliterated. It may become latent, but it retains the potential of being restored to consciousness. Retrieval of objects from memory involves activating a latent state or feeling, so as to bring it above the threshold into clear consciousness.

This doctrine helped account for some recondite phenomena of reminiscence, as when an idea pops into our head which is unrelated to anything that preceded it. Hamilton postulated linkages below the threshold of consciousness, linkages which could mediate even the most bizarre sequence of thoughts. The power of this account was not lost on J. S. Mill who reported it as one hypothesis that might account for certain anomalies observed in recollection. /8/

In addition to reformulating the laws of association, Hamilton sharply limited their range of applicability. Following Kant's precedent, Hamilton distinguished between objective (logical) and subjective (psychological) trains of thought and asserted that the laws of association apply only to the latter. Logic does not deal with such contingent aspects of thought, but only with the necessary forms of thought. /9/

Of the issues discussed here it was Hamilton's insistent upon the inadequacy of association to account for necessity which drew John Stuart Mill's greatest wrath in his examination of Hamilton's philosophy. Mill pointed out apparent inconsistencies in Hamilton's various formulations of the laws of association and briefly addressed
his view of perception. Mill noted, in each case, the unfortunate emphasis given to such obscure notions as unity and totality. But Mill was much more severe concerning Hamilton's arguments on logic, accusing him of carelessness for not having seriously examined the principle of inseparable association, the principle employed by the empiricists to generate complete ideas and necessary truths. Since this debate had greater philosophical than psychological relevance, I will not examine it more closely. What is worth noting here is Hamilton's attempt to distinguish between psychological and philosophical realms, a distinction almost entirely overlooked by members of the empirical tradition.

Hamilton's doctrines presented an alternative to the picture of mental functioning provided by the associationists. While it is difficult to trace their influence in any detailed way, it is worth noting that almost every one of the later thinkers discussed in this chapter referred to Hamilton's work, and several seem to have formulated their own ideas in response to his. The next individual whose view we will examine, James Martineau, did not acknowledge any great debt to Hamilton, but the similarities in their views are striking.

James Martineau

James Martineau was a Unitarian minister who exerted some intellectual influence upon William Carpenter. Early on Martineau had adopted Hartley's necessitarian and utilitarian doctrines, views that were consistent with current Unitarian thought. Later in life, under the influence of the writings of German theologians, Martineau
became dissatisfied with the determinism and associated views of the utilitarians.

In his critique of these views, developed in courses taught by him in the 1830's, Martineau went straight to the heart of these doctrines and attacked the phenomenalist view of causation. He employed Mill's Analysis and Brown's Lectures as foils for the development of a new view of causation, a view he regarded as necessary for the postulation of freedom of choice. His fundamental argument was that our idea of causality is not derived from observation of constant conjunction among phenomena (as the empiricists would have it) but is an abstraction from the idea of self-conscious will./13/

Intellectual influences upon Martineau included the aforementioned German theologians, Victor Cousin and the Scottish thinkers, Reid and Hamilton. Martineau's interest in the latter two thinkers, developed, "no doubt, due to their critique of sensationalistic and skeptical theories of knowledge. Martineau commended Reid for asserting that the starting point of knowledge is self-knowledge and he noted that Hamilton was the first of recent philosophers to have escaped the tyranny of Bacon./14/ While Martineau endorsed Hamilton's recognition of an opposition between mind and nature and between ego and non-ego, he objected to Hamilton's claim that we cannot know the external world./15/

Martineau was opposed to much of contemporaneous philosophical and psychological thought. He strongly objected to the Comtean positivism that was in vogue in Britain during the 1850's and 60's and objected to Comtean tendencies within psychology./16/ For example, he objected to
the popular physiologizing of psychology commenting that,

I have no expectations of psychological results from merging mental philosophy in the study of organic functions . . . . Nor can I find that any results whatever have been attained by the physiological school entitling them to turn around so contemptuously on the old psychologists. Whatever becomes of comparative physiology in its future triumphs, it will never destroy the fundamental importance of the ancient "self-knowledge."

Five years later he wrote:

The cerebral phenomena are in an immeasurably darker state than the mental, and are even indebted to these for every hypothetic clue by which the fancy of physiologists could find a way through their relations.

We will see that similar objections to the physiologizing of psychology were voiced by James Ward twenty years later.

Martineau's objection to the determinism of utilitarian viewpoints manifested itself in his critique of John Stuart Mill's view of self-determination. He wrote that while he initially had been excited by Mill's doctrine, closer examination had revealed that it differed little from other utilitarian formulations. In Mill's view, he stated, self-formation is undertaken so as to fulfill our obligations to other men, rather than to fulfill our obligations to a purer will or as the result of communions with a higher being. In this criticism, we see a hint of Martineau's opposition to naturalistic ethics, in which "man [is] treated as a natural product moulded by surrounding pressures on his sentient sensibilities." Martineau's critique of Mill clearly drew force from his own religious values and beliefs.
The year after Martineau published this critique of John Stuart Mill, his critique of Alexander Bain's *Senses and Intellect* and *Emotions and Will* appeared. Like the earlier critique, this one was motivated by philosophical, ethical and religious concerns. In this essay he continued his demolition of the sensationalist view of reality and causality. Reiterating Hamilton, he pointed to the fundamental distinction between mental science and natural science: "Mental Science is self-knowledge: Natural Science, the knowledge of something other than self."/21/ Moreover, self-knowledge is based upon self-consciousness, an active reflective form of awareness entirely different from sentience or the passive recipient form of consciousness described by the sensationalists./22/

It is the critique of associationism appearing in this essay which is of most interest to us here. Martineau recognized the central epistemological role played by the principles of association within this tradition, and described their function in the following fashion:

"Given the rudiments of any brute,"—so it seems to state its problem,—"to construct the perfection of any angel." The five senses and ganglionic spontaneities are briskly stretched upon the Jacuard-loom; the cards, perforated according to theory, are hung upon the beam: And after a few chapters of cheerful weaving, the divine form is finished off; and you have the satisfaction not only of admiring it but of knowing exactly what its reason, love, and goodness are made of, and how put together./23/

While the associationist approach appears to afford a great deal of intellectual satisfaction, Martineau found that a closer examination of the approach revealed a number of problems. While its goal was to account for the origins of knowledge, it drew its evidence from the introspection of the mature consciousness. Martineau suggested that the
associationists ought to admit that their theory is purely conjectural and that it cannot really be put to a test./24/

Serious as this charge was, it represented just the first of many problems Martineau found with associationist doctrines. He noted that there was little agreement among these writers as to what exactly the 'building blocks' of experience were: "that which is called one impression by Hartley is treated as half-a-dozen or more by Mill."/25/ Martineau also regarded this as a relatively minor problem, since he denied that any such units could serve as the building blocks of our experience. Echoing Hamilton, he claimed that our ideas of complex objects are psychologically prior to any ideas of their constituent elements. He insisted that the associationists' strategy of "making our objective knowledge begin with plurality of impression and arrive at unity, ... [is a] complete inversion of our psychological history."/26/ He stated:

Experience proceeds and intellect is trained not by association but by Dissociation, not by reduction of pluralities of impressions to one, but by the opening out of one into many; and a true psychological history must expound itself in analytic rather than synthetic terms./27/

Martineau also pointed out that Bain's own principles require that a knowledge of the whole precedes a knowledge of the part. A plurality could not be given in the first act of perception because, as Bain asserted, all perception has its origins in discrimination. Some sense of difference must be present for the growth of the intellect, according to Bain. Martineau correctly pointed out that the requisite differences cannot be provided by the original effect of a single object.
Bain took this objection seriously enough to frame a reply in the second edition of *Senses and Intellect* (1864). In this note, Bain conceded that dissociation must precede association in the very earliest phases of experience. He admitted that some experience is necessary for us to perceive objects as compounds of qualities. But, Bain asserted, this does not require much time:

As soon as we have a past to refer to, however limited, we separate every compound sensation into its elements. If the first sensation that combined light and warmth [i.e., fire] be vague and unanalyzable, two or three experiences where these occur in different connections, would lead to a commencement of the disentangling consciousness:

and he continued,

we can see that the mind after an experience, longer or shorter, must arrive at the state representing our habitual conduct in the matter, namely, that every complex sensation is instantaneously taken to pieces by filing every separate ingredient on its own thread.

This, of course, is not what Martineau would have described as the "habitual conduct" of the mind. He did not regard dissociation as a special function of the mind, operating only in its earliest stages, but as the mind's characteristic mode of operation throughout its experience.

A secondary criticism leveled by Bain concerned Martineau's claim that objects are initially presented in their full complexity or as "residuary simplicities" of consciousness (e.g., the ideas of substance, cause, space). Bain contended that in the first instance such ideas are simply vague and unanalyzable and therefore reveal nothing about the nature of the world.
Martineau had also claimed that to account for the differentiating, dissociating ability of the mind, it was necessary to postulate a self-conscious, reflecting subject. Furthermore, a critical examination of Mill's work had shown the necessity of postulating freedom for this subject. This conception of an active, reflective subject underlying mental experience also highlighted a fundamental distinction between the psychological and the natural sciences. Psychological sciences deal with subjective experience, while natural sciences deal with objective experience. This distinction stemmed from, and bolstered Martineau's opposition to Comtean influences in psychology.

We will find that many of Martineau's arguments were echoed in the work of James Ward. However, before turning to the second wave of reaction against associationism we will examine the critique of associationism presented by Shadworth Hodgson, a critique William James was to refer to as the best appearing in the English language./31/

Shadworth Hodgson

Shadworth Hodgson was a somewhat obscure figure whose doctrines are frequently difficult to understand. Nevertheless, his work is worth examining because he contributed new themes to the attack upon associationism and because of his influence upon William James.

Hodgson, like Hamilton and Martineau, objected to the sensationalistic atomism underlying empiricist theories of knowledge since Hume. Like Hamilton and Martineau, he emphasized the continuity of the stream of consciousness, a conception of consciousness altogether
different from that provided by the empiricists. Hodgson stated:

Once the conception arose of consciousness being one connected series, lengthening itself each moment, and growing out of its former self and out of its previous content, as a plant out of its seed, so that moments of consciousness are not separate objects, calling up each other in virtue of similarity or contrast, but organic parts of one living whole, when one's attention was called off from what representations are as images of objects in perception, and fixed on what they are as members of a subjective series of consciousness, as containing feelings and not as containing qualities... then the enquiry was directed into its proper channel, and the process of lengthening of the chain of consciousness in redintegration was exhibited in a manner favorable to investigation./32/

Hodgson did not fully accept Hamilton's doctrine of redintegration and it was in commenting critically upon Hamilton's doctrine in *Time and Space* (1865) that Hodgson developed his own critique of empiricism./33/ While he maintained that Hamilton's notion of redintegration was more adequate descriptively, he criticized it as an explanation of association. While he agreed with Hamilton's claim that all objects of consciousness have affinity with one another, he felt that Hamilton's principle failed to account for why one train of thought is followed rather than another. An appeal to linking notions such as resemblance or cause or simultaneity would not help in Hodgson's view, as no account is given of why one of these, rather than any other, becomes the link in any particular case./34/ According to Hodgson, the inadequacy of Hamilton's account is especially clear in the case of the spontaneous redintegrations that form the patterns appearing in involuntary thought.

In revising this account of the process of redintegration, Hodgson claimed it was necessary to consider more fully the role played by emotional factors in cognition. Traditional associationist accounts, he
stated, have been at fault in overemphasizing intellectual factors.  It is emotional factors that provide the missing links of association by virtue of their effects on the attention of the subject:

Pleasure in presented objects, interest in represented objects, is that which occupies the attention, and causes that part of the object to which it is attached to linger in consciousness and to exclude the other parts of it from consciousness.

and he pointed out that "the interest felt in the antecedent object determines what its form shall be, and consequently how the next moment shall differ from it when it arises out of it."

Hodgson was not willing to give ultimate power to attention as guided by interest. He pointed out that habit also played an important role in deriving the sequence of impressions. These two factors, habit and interest, were depicted as working cooperatively to determine the flow of the stream of consciousness. At one time habit might play the governing role, at another time interest. Furthermore, in Hodgson's account, each of these governing principles may be regarded as the manifestation of a more fundamental operating factor governing spontaneous redintegration—pleasure. Interest, according to Martineau, was simply the representation of pleasure and pain, while habit involved the pleasure of the "sense of ease and facility."  "Pleasure," Hodgson claimed, "is the determining power of the movement of objects in spontaneous redintegration."  Unlike Hamilton and Martineau, Hodgson claimed that we must refer to brain processes in order to provide an intelligible and complete account of the laws of spontaneous redintegration.
Hodgson also distinguished between spontaneous and voluntary redintegration. Voluntary redintegration was depicted as purposive, as involving not only interest but also the anticipation of a result. New governing principles are operative here, since redintegration is under the conscious volitional guidance of thought. Furthermore, this class of voluntary redintegrations is

the highest and most important class, and under this class fall all reasoning processes, all action and conduct of reasoning beings, and all happiness of which such beings are capable.

While voluntary processes of redintegration are a distinctive and important class of thought processes, Hodgson emphasized that such processes are not independent of the laws of spontaneous redintegration. He wrote:

The conscious volitional guiding of thought can create nothing but can deal only with representations or perceptions which are already, perhaps only in their elements, present in the web of the redintegrations waiting to be woven anew into this or that pattern.

By contrast, in voluntary redintegration, he said,

we keep rejecting the representations which the latter [spontaneous redintegration] keeps offering to our notice, if they do not appear conducive to the end we have in view. The question which we propose to ourselves to answer; and the perceived non-conduciveness of the rejected representations becomes our guide in fixing at last on representations which are conducive.

To summarize, Hodgson charged that accounts of spontaneous association or redintegration require supplementation if they are to have any explanatory force. Hodgson supplemented the theory with an account of pleasure as the source and spring of all spontaneous redintegration and insisted that an account of brain action is needed before we can consider the theory complete. Hodgson also distinguished
between spontaneous and voluntary redintegration, the latter being a far more purposive process. It is in voluntary redintegration that the purposive selective function of self-consciousness is clearly seen. However, Hodgson insisted that voluntary redintegration is not independent of the processes of spontaneous redintegration.

We have seen previous thinkers claim that associationist principles cannot provide us with much philosophical insight. Hodgson suggests that they are of far more limited value; that they can only provide us with a partial account of psychological phenomena. We will see this point reiterated in the second wave of reaction against associationism.

Later Critiques of Empiricism and Associationism

The second wave of critiques of empiricism and associationism derived additional force from the resurgence of interest in German philosophy. Following 1865, Kant and Hegel were read more widely in Britain particularly among an influential group of philosophers at Oxford. T. H. Green's advice to "close your Hume and Mill and open your Kant and Hegel" heralded this new age in British philosophy.

T. H. Green

T. H. Green's critique of empiricism was stimulated by concern over the practical as well as theoretical implications of the doctrine. Green was an evangelical liberal with a strong social conscience and a keen awareness of social problems. Like the early Utilitarian-Associationists, he regarded the world as rational and
progressive and attempted to formulate a philosophy that could provide a foundation for social reform. He regarded the utilitarian approach as impoverished because it rested upon empiricism and ethical hedonism. The utilitarian approach, for example, denied that man was independent of nature—that is, had freedom—and could not provide a justification for the value of self-sacrifice. The fact that this approach permeated popular philosophy alarmed Green, and he concluded that a thoroughgoing critique of empiricism and ethical hedonism was necessary in order to set philosophy and practice back on the correct course.

Green regarded Hume as the last great philosopher in the British tradition, because he had traced out all the negative implications of the empiricist assumptions. He maintained that Hume had clearly demonstrated that the Lockean analysis of the sources of our knowledge established nothing but the impossibility of knowledge. Green felt that if the British could be made to realize this, as their German counterparts had one hundred years earlier, a way might be cleared for a fresh start in philosophy. With this end in mind, Green together with T. H. Grose reissued an edition of Hume's Treatise of Human Nature in 1874—an edition which contained two long critical introductions by Green. Green's critique is both long and complex, so only certain points will be reviewed here. The major thrust of his critique is aimed at the sensationalistic atomism in the empirical tradition. His argument demonstrated that the associationists could not be consistent in adopting sensationalistic atomism and still account for the knowledge that we have.
Green asserted that the doctrine that all our knowledge originates in isolated sensations, is the central tenet of the empiricist school. However, he noted that there is an equivocation in the way empiricists describe sensations. On the one hand they are depicted as states of consciousness, or mere feelings; on the other hand, they are regarded as things or qualities of things, having a reference beyond themselves and therefore "representing reality." But if they are the latter, they are more than feelings. They must be regarded as conceptions or judgments and, as such, they presuppose relations. That is, it is necessary to assume a relation between this idea and other discrete ideas or a relation between this idea and something external, i.e., the 'cause' of the idea. But if such relations are presupposed at the outset, then the assumptions of empiricism are violated at the outset. Thus, Green argued, there is a fundamental incoherence in the empiricist doctrine.

We can trace the same line of argument more directly in his criticisms of Hume. Hume, Green argued, was a far more astute thinker than Locke, because he saw the difficulty of attempting to account for our relational knowledge while presupposing only isolated sensations acting upon a passive subject. Relational knowledge underlies such fundamental concepts of thought as substance, attribute, identity, cause and effect; therefore, any adequate epistemology must account for such relational knowledge. Now Hume recognized this problem and sought to solve it by treating these concepts as something other than knowledge—that is, as habitual propensities generated spontaneously by the association of ideas. However, Green claimed that Hume did not
recognize just how extensive the problem was. He pointed out that if empiricists were to be consistent in their account of the mind, they must regard it as the ground of bombardment by independent sensations—"internal and perishing existences"—that bear no relation whatsoever to one another. On such an account it is not even possible to speak of the succession of ideas, or resemblance between ideas, even though these are the lynchpins of associationist psychology. Nor can we admit any idea of time or space or substance, because such ideas represent collections of sensations and, in Green's words "how can a perpetual flux be collected?"

Thus the empiricists, including Hume, are required to assume the existence of some relations among impressions and ideas, despite the fact that such assumptions are not consistent with their avowed approach. Green claimed that in so far as empiricists are successful in accounting for our knowledge, their success rests upon having read relations into experience. Green concluded that even empiricists tacitly acknowledge that our knowledge of the world has a relational character. He added that the relational character of knowledge results from the fact that experience, or the real, is related.

Green's critique led him to propose an alternative conception of the mind. Since he concurred with Hume's claim that relations are the product of mind, he posited a relating, integrating, self-conscious subject as the condition of all knowledge. To ensure the objective character of such relational experience and to account for the limited and fallible character of our knowledge, he postulated an external
consciousness—God—in which individual consciousnesses participate.

In sum, Green maintained that the character of experience differs from that recognized by the empiricists—it is explicitly relational in character. Because experience has a relational character and because relations are the product of mind, Green concluded that a self-conscious subject must be presupposed in any adequate account of knowledge.

Green's criticism of the empiricists did not end here. He also charged them with conflating two essentially distinct questions:

one metaphysical, What is the simplest element of knowledge? the other physiological, What are the conditions in the individual human organism in virtue of which it becomes a vehicle of knowledge? /55/

Green asserted that the empiricists attempted to answer the first question by means of the second, and that this fallacious approach led them to the conception of isolated sensations as the elements of knowledge, and the view of mind as a wax tablet upon which these sensations are impressed. Green granted priority to the first question, concluding that what is real is related and therefore presupposes a relating subject. The starting point, therefore, for his examination of the second question was radically different from that of the empiricists.

Green's critique was directed at the ethical doctrines of the Utilitarian-Associationist school as much as its epistemological doctrines. He maintained that the self-conscious subject is not in time and thus is independent of natural law. Therefore, no natural science of man can ever be the basis of practical art. /56/
Green held that practice, whether moral or political practice, must always be guided by ideal ends. While he denied that pleasure was an adequate ideal end, he did not specify others. Moral practice and self-realization must go hand-in-hand and in the course of self-realization suitable ideal ends will be postulated. Green's moral theory was also a social theory, and he tied individual development to social development by insisting that man is inherently a social being. Remember that the utilitarians had to appeal to additional factors—legislative and social sanctions, as well as the acquired emotion of sympathy—to account for altruistic behavior. In contrast, Green insisted that such behavior was a natural outcome of the process of self-realization. He argued that as man grew in character, he would become more and more concerned with the needs and desires of others and seek to improve their lives as well as his own.

Green's critique of empiricism was broad and detailed. The points I have emphasized are similar to the earlier criticisms raised by Hamilton, Martineau and Hodgson. Green's ideas have been introduced not because they had a direct impact upon associationism, but because he initiated a movement which became a strong counterforce to empiricism and associationism in the 1880's and 1890's. F. H. Bradley, Henry Sidgwick and James Ward were not members of this movement, but each drew upon the assumptions employed by Green in their criticisms of empiricism and associationism.
F. H. Bradley was an Oxford philosopher, influenced by T. H. Green, but with different views on a number of issues. Like Green, Bradley objected to the deterministic ethical implications of the Utilitarian-Associationist psychology. Unlike Green, he was a Tory and a somewhat reclusive figure. Like Green, he objected to the conflation of philosophical and psychological questions among the empiricists. However, at least in his early work, he was more concerned with the impact of such confusions upon logic than with their impact upon ethics or metaphysics. Nevertheless, like Green, Bradley dealt with this problem by insisting upon the need for a sharp demarcation between philosophical and psychological inquiries.

In his Principles of Logic (1883), Bradley distinguished between logic and psychology with reference to their subject matter. Logic, he said, was not concerned with ideas merely as mental facts nor with the contingent laws governing their manifestations. It was the content or the meaning of ideas that concerned logic; the other aspects of ideas fell within the domain of psychology. While the radical character of such a proposal may not be obvious today, Bradley's stance directly challenged the psychologicist approach to logic adopted by the British empirical tradition and manifested most clearly in John Stuart Mill's System of Logic. In this work, which was widely employed as a Logic text in universities during this period, Mill asserted that "Logic...is the science of the operations of the understanding which are subservient to the estimation of evidence," and that
a right understanding of the mental process itself, of the
conditions it depends on, and the steps of which it consists, is
the only basis on which a system of rules fitted for the
direction of the process can possibly be founded./60/

In contrast, it was Bradley's view that inferences and judgments
can never be regarded as concatenations of particular ideas. Both
inferences and judgments contain ideal contents or meanings which
presuppose concepts with a universal and general character. Ideas, as
mental images of impressions, simply lack the requisite universality.

Bradley's critique of inductivist logic rested upon a critique of
the sensationalistic atomism underlying empiricism. Sensations or
impressions, he argued, cannot be the ultimate units of our knowledge
because they are isolated, unique, and fleeting entities. The basic
units of knowledge must persist and must have a generality beyond these
discrete impressions. It is such universal ideas, and only such
universal ideas, that are capable of being united in association.
Bradley wrote "association marries only universals."/61/ Bradley
insisted that neither the bare particulars of the empiricists, nor their
purported principles of connection, can have any relevance for the
logician./62/

Bradley acknowledged that the analysis of knowledge may appear
different when undertaken from the perspective of the psychologist. He
repeatedly pointed out that he was not denying the reality of
association as a fact, but only denying that the account offered of this
fact is satisfactory for logic or psychology./63/ Principles of
association may be employed to account for our mental functioning, but
they must be employed only in their proper sphere. Nor is the orthodox
account of these principles—the account provided by the Mills and Bain—sacrosanct. In Principles of Logic, Bradley devoted a chapter to the critical examination of their account of these principles, an account he regarded as

not only questionable but false. And, beside being false, it is incompatible with any tolerably accurate theory of reasoning. For the universality and identity, which we saw were necessary for every inference, do not exist in the theory of "Experience."/64/

Bradley asserted that the fundamental principles of association—that "mental units which have coexisted cohere and mental units which are like recall one another"—are nothing but fictions./65/ The problem, as Bradley saw it, stems from the fact that the units of association are particular existences or "individual atoms," whereas all intellectual reproduction presupposes common identity. Bradley maintained that "no particular ideas are ever associated or ever could be. What is associated is and must be always universal."/66/

To be more specific, he pointed out that the principle of contiguity could never operate upon such "individual atoms" because it assumes that something that has perished could be resurrected. He wrote:

These particulars... have got no permanence; their life endures for a fleeting moment... they can never have more than one life, when they are dead they are done with. There is no Hades where they wait in disconsolate exile, till Association announces resurrection and recall... no miracle opens the mouth of the grave and calls up to the light a perished reality, unchanged by the processes that rule in nature. These touching beliefs of a pious legend may babble in the tradition of a senile psychology, or contort themselves in the metaphysics of some frantic dogma, but philosophy must register them and sigh and pass on./67/
This criticism, in itself, was not devastating because, as Bradley was well aware, there were few individuals during this period who claimed that contiguity alone can account for association. Instead, most asserted that contiguity must be supplemented by a principle of similarity. This supplementary principle ensured that the cue which reinstates a former impression need not be identical to the original conjoined impression, only similar.

Bradley, however, argued that this addendum could not save the principle of contiguity. In the first place, as shown above, we can never restore a past impression or even the exact feeble image resembling this impression. Assume, for the sake of argument, that we have had an impression B along with impression C which have become conjoined in experience. Now a sensation A excites by similarity an image b. On the orthodox account, this should suffice to restore c. But does it? Bradley stated, "Never." On such principles the pairing of B and C repeatedly must yield particular pairs of images b₁-c₁, b₂-c₂, b₃-c₃. Now the presentation of A may call up, by similarity, an image b₄. But as Bradley pointed out, this is not what we want. For we want an image b₄-c₄; and contiguity is invoked to present us with c₄. But it is invoked in vain. For as yet c₄ has never existed and in hypothesis it is to be made to exist by means of contiguity. On the other hand, b₄ has never been contiguous to anything at all. . . . What is called up by association has never been contiguous; and what has been contiguous cannot be called up./68/

And if this critique were not sufficient, Bradley then asserted that "Association by Similarity is a downright fiction . . . . and it involves besides metaphysical assumptions which I confess stagger
me."/69/ He pointed out that the relation of similarity cannot exist until two things are before the mind and capable of conveying the impression of resemblance. Then he asked "But what meaning can we attach to the calling up of an idea by similarity? If the relation does not exist until the idea is called up how can the idea be called up by the relation?"/70/

Furthermore, he said, since what is called up is non-existent, we must believe in a relation between the existent and the non-existent. In Bradley's words, "could anything be more insane than this wild metaphysic?"/71/ Bradley did not rest contented with this critique but examined such adjunct doctrines as Bain's principle of primitive credulity and Mill's law of obliviscence. He assessed these doctrines as fictions, albeit imaginative fictions.

Bradley also offered an alternative account of association. In place of the principle of contiguity he offered the following law of redintegration: "Any part of a single state of mind tends, if reproduced, to re-instate the remainder; or Any element tends to reproduce those elements with which it has formed one state of mind."/72/

Such redintegration differs from contiguity because it does not involve cohesion between psychical units, but instead involves connections between universals:

What operates in the first is a relation between individuals. What works in the second is an ideal identity within the individuals. The first deals with the what, and the second with the what. The first unites facts, and the second mere content./73/
Bradley employed the example of an association between castor oil and sickness in order to illustrate the workings of this law:

The first conjunction of castor-oil and sickness has no longer the smallest existence as fact. But it gave rise to a connection of elements in the mind, which elements are now an idealized part of the content of this perished fact. The new presentation of castor-oil is a fact which is certainly not the old fact, yet it has a content which is partly the same. The presence of this identical universal supplies the antecedent to the hypothetical connection of elements in the mind, and this then passes from hypothesis into actual fact . . . . the real identity of this castor-oil with that castor-oil recovers ideally, and in a universal form, another element of the original context. And, so far as mere reproduction goes, nothing but the universal could ever be called up. It is the fresh presentation which adds detail to the reproduced element. This new perception re-particularizes the universal and does so in a way that will not be the old way, and in many cases will be strikingly different. But such re-particularization . . . is not association, and is not reproduction./74/

In sum, the mental elements entering into association are abstractions from the particulars we experience. In any reproduction of previous experience, only the abstraction is brought forth by the forces of association, because it is only the abstraction that is identical in each case. The details we perceive are not the product of association but involve an elaboration of the abstraction that is the product of association.

Bradley, with characteristic thoroughness, pointed out that his own doctrine could have problems since it is subject to the criticism that "No two states of mind can have anything in common; for, if so, they would be the same and that is impossible." On this rock of obstinate metaphysical prejudice our explanations are broken."/75/ It appears that any account of the principles of association is likely to clash with some such obstinate metaphysical prejudice. If this is the case,
how can one decide which account is the true one. Bradley offered two suggestions. First, one might undertake metaphysical enquiry for oneself, rather than taking any assertion on trust. If so, he stated, "I feel sure that any conclusion you do come to, will not be quite the same with the orthodox doctrine as handed down in England."/76/ For those not willing, or able, to undertake such an investigation, he suggested eschewing metaphysical beliefs:

Is it not possible to study the facts of psychology without encumbering oneself with beliefs or disbeliefs as to the ultimate nature of the mind and its contents? You cannot have metaphysical disbeliefs without corresponding beliefs, and, if you shrink from becoming a professional metaphysician, these beliefs must be dogmas. Would it not be better to study the facts and to let metaphysics altogether alone?/77/

Bradley pointed out that various other sciences had adopted such an approach. In these sciences the principles which explain the facts are regarded as working hypotheses instead of ultimate first principles. The merit of such principles is assessed in terms of their usefulness in enabling us to deal with phenomena, not in terms of how accurate they are as statements of fact. Bradley stated that

there is no reason why we should not use doctrines which, if you take them as actual statements of fact, are quite preposterous. For the psychologist, as such, is not interested in knowing if his principles are true when taken categorically. If they are useful ways of explaining phenomena, if they bring unity into the subject and enable us to deal with the fresh facts which arise, that is really all that, as psychologists, we can be concerned with. Our principles are nothing but working hypotheses. We do not know and we do not care if they turn out to be fictions when examined critically./78/

Of course if we accept this analysis, Bradley's criticism of the laws of association loses much of its force. Furthermore, his law of redintegration becomes nothing more than a potentially more convenient hypothesis. Any metaphysical objections to the orthodox or the revised
account become irrelevant. But Bradley felt that "we might perhaps thus advance the study of the subject in a way which now seems quite impossible." And he added, "if we did not make much advance in knowledge, we should save ourselves at least a good deal of bitterness."/79/

Nevertheless, he recognized that there are overwhelming obstacles to the implementation of this suggestion. First, "it is supposed that the psychologist must be a philosopher. He is supposed to think himself so, and he is not likely to accept a lower place."/80/ Second, this requires that the psychologist confine himself within certain limits, shunning metaphysics. However, "if he is not a metaphysician he will not know what those limits are."/81/ And there is a final obstacle, this one derived from the side of metaphysics:

The student of metaphysics may form an opinion as to the real nature of physical phenomena. And knowing, as he thinks, the truth about these facts, he will be led to insist on a psychological interpretation which is strictly true./82/

In other words, the conflation of metaphysical and psychological issues results from the boundless enthusiasm of metaphysicians as well as from the ignorance and the presumptuousness of psychologists. All such tendencies must be restrained if psychology, as an empirical science, is to steer clear of metaphysics. Bradley did not underestimate the difficulties in the way of maintaining such a course. But he did continue to insist upon a clear demarcation between psychology and metaphysics throughout his life, maintaining that, "I do not know a single metaphysical question which can be ruled out of psychology on principle, if any single one is let in."/83/ Because he
felt that phenomenalism was the position that most successfully confined itself to "the mere course of psychical events . . . happening within a single organism, and the laws of coexistence and sequence between these events", he maintained that "phenomenalism is the one rational attitude in psychology."/84/ This claim may help clarify why, despite common opposition to the empiricists, Bradley and James Ward were at odds in discussions of association and related matters. As the roots of their disagreements were metaphysical, a brief account of Bradley's metaphysics is called for.

It was Bradley's view that discursive thought must inevitably do injustice to reality because it abstracts from and therefore fragments reality. In Appearance and Reality (1893), Bradley employed this insight in a critique of all systems of discursive thought--including science--and developed his overall metaphysical conception./85/

In the first part of Appearance and Reality, Bradley demonstrated that all the fundamental organizing concepts of thought--the notions of relation, of substance of quality, of change, of cause, etc.--are self-contradictory; they reduce the world of discursive thought to a realm of mere appearances. Science, therefore, does not provide us with information about reality but only with information about appearances. Within the realm of appearances science may function adequately, but scientists must realize that their investigations can provide no keys to the ultimate nature of things.
Bradley's analysis can be illustrated by examining what he has to say concerning the constructs of the self. We have already seen that this construct was central to most of the thinkers critical of empiricism and associationism. Bradley's position is quite different. Any such construct of the self, he claimed, is riddled with contradictions. If the self is defined in terms of what is not-self (i.e., the external world) then this not-self must have some meaning. However, it is not clear that it can have any meaning apart from the self. On the other hand, if the self is that which is revealed by self-examination, then it must be both subject and object at the same time, and this is impossible. All in all, the various constructs of self are contradictory and therefore the self cannot refer to something given ultimately in experience./86/

Bradley posited two realms of experience apart from this self-contradictory realm of appearances. Underlying the realm of appearances is a realm of pure feeling, of immediate experience. Unlike Green, Bradley was not willing to claim that relations are given in immediate experience. Bradley's "realm of pure experience" contains no relations./87/ It is a realm of pure diversity as there can be no conceptions of things with distinct qualities existing in relation to one another. However, this realm of pure experience does have a unity. This unity is destroyed when discursive thought transforms pure experience into a realm of appearances.
Transcending the realm of appearances is the realm of absolute experience or reality. Bradley depicted this realm as the opposite of the realm of appearances in every respect. The absolute transcends all self-contradiction and therefore constitutes a consistent and harmonious experience. Like the realm of immediate experience, it is unified. Bradley's conception of the absolute is, to my mind, a rather mystical one, as is the path by which one might attain it. /88/

Bradley was developing his metaphysical views during the period he was writing about psychology. However, after 1893 he focused almost exclusively on metaphysics. His metaphysical system contrasts sharply with his rather pedestrian account of psychology as a phenomenal science. Bradley's account of psychology also contrasts with that of a contemporary, James Ward, despite their sharing many common assumptions. However, before describing Ward's system and his disagreements with Bradley we will examine the critique of empiricism formulated by Ward's mentor, Henry Sidgwick.

Henry Sidgwick

While Green and Bradley were both Oxford men, Henry Sidgwick was associated with Cambridge throughout his lifetime. /89/ Like many in his generation, Sidgwick came from an evangelical background. He was a liberal with a strong social conscience who was greatly influenced by the writings of John Stuart Mill. However, Sidgwick did not remain a disciple of Mill. /90/ Like Green and Bradley, his critique of empiricism was based upon insights gained from his study of German philosophy. Unlike Green and Bradley, he found more of value in Kant
than in the post Kantians./91/

Like Green, Sidgwick's major contributions were to ethical theory. His *Methods of Ethics* was first published in 1874 and went through six editions./92/ Unlike Green, he did not wholly abandon hedonism in his ethical theory. However, he did deny that a hedonistic standard of values could be justified on the basis of psychological data. In a further departure from the traditional utilitarian account, he asserted that we must appeal to intuition in the guidance of conduct./93/ It is the first point that is of most interest here, since Sidgwick's insistence upon separating normative questions and matters of fact served as the basis for yet another critique of empiricism.

Sidgwick's attack upon empiricism differed qualitatively from that of Green and Bradley. In the first place, he did not reject empiricism in a wholesale fashion. His criticisms focused upon what he felt to be the weak points of the tradition, i.e., the attempt to build an epistemological and an ethical system from psychology. For these reasons, among others, Sidgwick's critique had the greatest immediate impact of those we have examined thus far./94/

In two articles published in the early 1880's, Sidgwick examined the claim that the investigation of the origins of our thought is of central importance for philosophy./95/ He stated that such a claim was unfounded—that the empirical investigation of mental phenomena did not, and could not, lead to conclusions of any importance for metaphysics or ethics. Like Kant, Sidgwick insisted upon the distinctness of questions concerning origins and questions concerning validity.
In "Historical Psychology" Sidgwick evaluated the contribution of empirical investigations to the solution of three important philosophical questions: (1) What is the nature and mutual relation of mind and matter?; (2) How do we ascertain the validity of universal propositions underlying Mathematics and Rational Physics?; and (3) How do we ascertain the validity of principles of duty underlying moral reasoning?

In no case, he concluded, do we find the answers to these questions by examining the conditions under which these mental phenomena are produced. Scientific evidence cannot decide between materialism and idealism. Nor could the experience of particular space ever be the basis of universally true propositions. Finally, the examination of the origins of conscience could have no bearing upon its authority.

Let's look at this final point a bit more closely, since it was central to Sidgwick's critique and had implications for Bain's own account of morality. Sidgwick stated that while the sources of tastes and distastes may be interesting, they shed no light on the validity of the dictates of the conscience. Similarly, the sources of troubles and satisfactions of the conscience--the anticipated rewards or punishments for certain behaviors--can only be of peripheral interest. Such findings can never indicate whether the anticipations truly represent future reality, nor whether our actions ought to be determined by the prospect of such pleasures and pains. In short, Sidgwick concluded that psychology can shed no light on questions of morality./96/
In 1883 Sidgwick published "Incoherence of Empirical Philosophy" in *Mind*. In this article his critique of the historical approach to knowledge was broadened into a critique of empiricism./97/ Sidgwick reiterated his earlier claim that the scientific investigation of our ideas "will not determine anything of fundamental importance either as regards the materials of our actual knowledge or as regards the mode of constructing knowledge out of them."/98/ Empiricism, which rests upon the assumption that we have trustworthy particular knowledge, is not competent to demonstrate that assumption. The incoherence of empirical philosophy stems from two facts: (1) the validity of immediate cognitions cannot be readily ascertained, and (2) cogent inference is not possible on strictly empirical grounds. Sidgwick concluded that for empiricism to work, we must appeal to non-empirical principles. Not only must we have faith in immediate knowledge, but in order for such knowledge to have any relevance to science it must be bolstered by further faith in the trustworthiness of memory and the trustworthiness of testimony./99/

Sidgwick's point was that empiricism cannot provide a consistent approach for science and for philosophy. Nevertheless, he made it clear that he was not attacking the methods of particular sciences. He stated:

> It is possible to combine a practically complete trust in the procedure and results of empirical science, with a profound distrust in the procedure and conclusions--especially the negative conclusions--of Empirical Philosophy./100/
To summarize, Sidgwick insisted upon a sharp demarcation between questions of origin and questions of validity. Matters of fact have little bearing upon epistemological and moral questions. Sidgwick's reiteration of the Kantian distinction between the genesis and the validity of knowledge was to have a broad impact upon British philosophy. Sidgwick's arguments stimulated Bain to clarify the tenets of empiricism, and in so doing Bain incorporated some of Sidgwick's points. Bain's more sophisticated account of empiricism will be described below.

We have seen that three important thinkers—Green, Bradley, and Sidgwick—all insisted upon the need for a sharp demarcation between psychological and philosophical enquiry. Each had different reasons for making such a point, but they reached similar conclusions. And in reaching these conclusions they were challenging a fundamental tenet of the Utilitarian-Axociationist program. Each asserted that the empirical investigation of mind, or psychology, did not, and could not, provide a foundation for philosophy.

The critiques of these three thinkers sharply limited the bearings of associationist psychology. Bradley, for example, was willing to grant that associationism could provide an adequate account of mental phenomena, while emphasizing that the phenomenal realm was merely the realm of appearances. However, others such as James Ward, took the critique of atomism much further, and concluded that associationism could not even provide an adequate account of the origins of mental phenomena. It is to Ward's critique that we now turn.
James Ward

James Ward was neither a disciple of T. H. Green, nor a member of the Oxford movement, but he expressed a similar opposition to the doctrines of the empiricists and associationists. Ward had studied near Birmingham for the ministry, in Germany with Hermann Lotze, and at Cambridge with Henry Sidgwick. Neither of Ward's intellectual mentors, Lotze or Sidgwick, was an associationist.

More than any of the other individuals we have discussed, Ward provided both a critique of associationism and an alternative program of psychology. In a series of papers published during the 1880's, Ward presented his view of the tasks psychology should undertake. Psychology, he argued, must examine experience from the standpoint of the conscious subject. Previous accounts of consciousness, which had attempted to dispense with the construct of a real subject, had only succeeded in demonstrating how essential that construct is for an acceptable rendering of the facts. From this standpoint one can see that "in every concrete 'state of mind'... there is the presentation of an object, or complex of objects, to a subject." Mental objects, which include sensations, perceptions, memory images, intuitions, concepts, notions—anything, in short, possessing the properties of reproduction and association—are not to be regarded as isolated elements. Within conscious experience they are related to one another, as well as to the subject having the experience. Here Ward was applying the critique of atomism to the psychological realm.
For Ward it was the relation between objects and the subject—the presentation—relation—which was of central importance. He regarded it as the indispensible condition of consciousness and attention. Because of this relation, attention has a two-fold character. While it can be a function of the intensity of objects, it can also operate to determine that intensity. The power the subject has of distributing attention onto mental objects is the sole psychical activity of the subject, but it can accomplish a great deal. The movements of voluntary attention are governed by interest and they play a crucial role in differentiating and elaborating mental objects./108/ They serve, in the first instance, to introduce clarity and distinctness into an originally undifferentiated presentational continuum.

Mental growth, in Ward's view, involves a process of unfolding, a segmentation of what was originally continuous. This was the same process that Martineau had earlier called dissociation. Ward asserted that motor development follows a similar course. Movements, or motor objects, arise from a process of differentiation within a backdrop of vague and diffuse emotional movements./109/ Such a picture of mental and motor development contrasted sharply with the associationists' view of a process of accretion or aggregation of elements which were, at the outset, independent and distinct./110/ Thus, it should be apparent that Ward's attack on associationism followed directly from his account of mind. The isolated elements which the forces of association glue together in consciousness are, on this view, mere abstractions:

From the physical standpoint and in ordinary life we can talk of objects that are isolated and independent and in all respects distinct individuals. The screech of the owl has then nothing to do with the brightness of the moon: sound and light, owl and
moon--any one may go and leave no gap in the order of things to which the others belong. But for me they are parts of one whole, not merely because special attention to one diminishes the intensity of the others, but also because as attention passes from one to another it passes over no void, and because the representation of one entails that of the others too./111/

Again Ward was reiterating an assertion we have encountered previously, that is, that conscious experience has a unity and a relatedness that exists at the outset. Ward added that it is through movements of attention that objects within the presentational continuum acquire the distinctness necessary for any processes of association to take place. The similarity of this account to the views expressed by James Martineau is striking. However, it is important to note that Ward did not contend that association played no role in mental development. He simply maintained that its role is more limited than the associationists would have us believe, and that its operation must be subordinate to the activity of attention./112/

Ward echoed earlier thinkers in several other respects. He clearly distinguished between psychology and epistemology, and maintained that psychology was concerned solely with the genesis of ideas, while epistemology must be devoid of everything historical./113/ While he argued that "the treatment of Psychology which is known as that of subjective idealism is most likely to prove logically coherent," he also maintained that the merits of subjective idealism as a philosophical position must be assessed independent of results in psychology./114/

Ward also insisted that the distinctive standpoint of psychology signalled its separateness from physiology, and presented two arguments for this position. In the first place, he stated, the difference in the
standpoints of the two disciplines must be acknowledged and respected or confusions will surely arise. Furthermore, if physiology is ever to shed light on psychological processes, (and Ward admitted that this was a distinct possibility) a prior enumeration of such psychological processes must be available. Such an enumeration must be achieved by adopting an exclusively psychological standpoint. At this stage of psychological and physiological inquiry, Ward argued, both disciplines will profit from being kept well apart from one another./115/ Unlike Green, Ward did not argue that physiological interpretations of psychological phenomena deprive man of his innate worth. Like Bradley and Lotze, Ward regarded science as involving abstractions that must, of necessity, fragment reality. He stated that:

There is a wide [sic] difference between the face of nature, which is also the reality of nature--so far as reality stands for meaning and worth--and the decompositions, whether logical or material, which aid our curiosity when we try to press our way beyond ....... a chill disappointment is sure to seize us if we imagine that the reality is what we have reached by analysis and dissection instead of being what we left behind./116/

Ward's fundamental dispute with associationist accounts concerned whether mind was capable of imagining and acting freely apart from the constraints of association. Ward was also highly critical of Bain's physiologizing of psychological phenomena. He specifically attacked Bain's organically derived account of mental attention, claiming that it was based on unsound physiological assumptions. Furthermore, he argued that such a physiological account led Bain to overlook many psychological facts of memory./117/ Ward criticized the associationist account of perception and denied that a separate principle of association by similarity was necessary./118/ Most of these points were
raised in a series of papers that were direct attacks on the associationist position. These papers and the replies of Bain will be presented in the next chapter.
NOTES FOR CHAPTER 7

1. There is a tendency to reduce the late nineteenth century attack on empiricism to a general religious reaction against scientific materialism. While this is part of the story, there were multiple reasons for the attack including the fact that empiricism and associationism were not internally consistent and had problems fulfilling their own goals.


6. Ibid., 2:238

7. Ibid. Hamilton offered a somewhat different account of these laws in Dissertations on Reid. There he listed two general laws, along with several special laws of association. See Thomas Reid, Philosophical Works, with notes and supplementary dissertations by Sir William Hamilton (Hildesheim: George Olms, 1967 [1846]), 2:913-17.

8. See above Chapter 2, section entitled "John Stuart Mill's Psychology."


11. Ibid., pp. 251-56. Mill's concern is understandable, for his logic is deprived of all merit if Hamilton's criticism should stand.

Martineau also played a role in the institutional history of psychology during the late nineteenth century. In 1866 he was defeated by George Croom Robertson in a bid for the Chair of Mind and Logic at University College, London. Martineau's defeat can be attributed to persistent lobbying on the part of Alexander Bain and George Grote—the Utilitarian-Associationists on the selection committee. See Introduction to Part II, section entitled "University College, London."


15. Ibid.

16. Martineau's sister Harriet was a staunch "advocate" of Comtist thought, a fact that created considerable strain in their relations.


24. Ibid.

25. Ibid., p. 515.

26. Ibid., p. 516.

27. Ibid., p. 517. The isomorphism between Martineau's critique of empiricism and his critique of associationism is clearly laid out in the following passage:

"precisely those ideas,—of Substance, of Mind, of cause, of Space—which this system treats as infinitely complex, . . . are in truth the residuary simplicities of consciousness, whose stability the eddies and currents of phenomenal inversion of the real mental order has exercised, we think, an injurious influence on the whole logic and philology of the Association Philosophers." (Ibid., pp. 517-18.)

28. This reply has been interpreted as indicating how greatly Bain had distanced himself from earlier associationists. Note F is often cited to defend Bain's position against criticisms along the lines raised by Martineau. I would argue instead that Note F represents Bain's attempt to salvage his account from an important and potentially devastating critique. Furthermore I feel that Bain was only partially successful in this attempt.

29. Bain, Senses and Intellect, 2nd ed., p. 635

30. Ibid.


33. This work contained detailed references to Hamilton. Nevertheless, Hodgson claimed his Kantian intellectual ancestry stemmed from the works of Solomon Maimon and Samuel Coleridge, not Hamilton. There is also some evidence of a connection between Hodgson and J. F. Ferrier who was the author of Institutes of Metaphysics (Edinburgh: William Blackwood and Sons, 1854). This connection merits further investigation.


35. This criticism could apply with equal force to Hamilton. Hodgson did note that Thomas Brown and James Mill had come close to recognizing the important role of emotions.
36. Ibid., p. 265.

37. Ibid., p. 266. Subsequent thinkers, including William James and James Ward gave interest a large role to play in their accounts of association. Whether this construct serves to explain how the subject can play an active role in association and whether this construct represented an advance over the pleasure-pain mechanism proposed by Bain are questions we will address in subsequent sections of this chapter.

38. Ibid., pp. 274-75.

39. Ibid., p. 276.

40. Ibid., pp. 278-79. Hodgson asserted that neither the spontaneous nor the voluntary activity of consciousness could be explained as the result of the action of the brain alone for to do so would imply that consciousness is a "mere foam, aura, or melody, arising from the brain but without reaction upon it." Ibid., p. 280. In this work he advocated a dual-aspect monism, but in Theory of Practice (1870) he adopted the very position of epiphenomenalism that he was here denying.

41. Hodgson stated that

"the interest is the efficient, the anticipation the final cause of the remainder of the reintegration. Anticipation in an interest makes the interest a final as well as an efficient cause; interest in an anticipation makes the anticipation an efficient as well as a final cause . . . volition . . . is interest in an anticipated object, is a final cause which has become efficient . . ." (Ibid., pp. 284-85.)

42. Ibid., p. 285.

43. Ibid., p. 291.

44. Ibid., pp. 290-91.

45. See Introduction to Part III, section entitled "New Social and Political Philosophies."


49. Ibid., p. 16
50. Ibid., pp. 13-20.
51. Ibid., p. 162.
52. Ibid., pp. 174-75.
53. Ibid., p. 173.
54. Ibid., p. 178.
55. Ibid., p. 19.

56. This argument was spelled out most clearly in a series of articles published in Mind entitled "Can there be a Natural Science of Man?" Mind 7 (1882):1-29, 161-85, 321-48 and in the posthumously published Prologomena to Ethics, ed. A. C. Bradley (Oxford: Clarendon Press, 1883).

57. The main figures in this movement are represented in a volume commemorating Green, Essays in Philosophical Criticism, Andrew Seth and R. B. Haldane eds. (London: Longmans, Green & Co., 1883). They included Seth and Haldane, Bernard Bosanquet, W. R. Sorley and Henry Jones among others.


59. This is the problem Bradley addressed in The Principles of Logic (London: Kegan Paul and Trench, 1883). Later in Appearance and Reality (London: Swan Sonnenschein & Co., 1893) he developed his own distinctive metaphysical system, a system that I will not examine closely here.


61. Bradley, "Association and Thought," Mind 12 (1887):358. See also Bradley, Principles of Logic, p. 278. Here Bradley was reiterating Green's claim that discrete events could never become bonded together by the power posited.

62. The broader implication here is that they lack relevance for all philosophical inquiry.

63. Ibid., pp. 273-74. As we will see, it was necessary for others, such as James Ward, to trace the implications of the critique of atomism for Psychology.
64. Ibid., p. 273.
65. Ibid., pp. 277-78.
66. Ibid., p. 278.
67. Ibid., p. 280.
68. Ibid., p. 293.
69. Ibid., p. 294.
70. Ibid., p. 295.
71. Ibid., p. 296.
72. Ibid., p. 278.
73. Ibid., p. 298.
74. Ibid., pp. 282-83.
75. Ibid., p. 314. He added, "It would be useless to point out, as we have already pointed out, to the disciple of Experience that his own theory has been wrecked on this same iron dogma." (Ibid., p. 315)
76. Ibid.
77. Ibid.
78. Ibid., p. 316. This view of science was a fairly new one being proposed in different quarters during this period. F. A. Lange proposed a similar view in his work History of Materialism and he gave credit to Lotze for many of his insights. Valhinger's Philosophy of As If was written during this period. Although it was completed by 1877, it was not published until 1911. The history of the doctrine of "working hypotheses" merits further investigation.
79. Ibid.
80. Ibid. Bradley felt that little could be done to remove this obstacle since it resulted from a long tradition of close relations between philosophy and psychology. He stated "I would give him the name of philosopher for his asking but I could not admit him as a student of first principles." Ibid., p. 317.
81. Ibid. Bradley claimed that all scientists are infected with the fatal temptation to think that one's central principles are ultimate facts. However, he said, psychologists are more prone to the problem than other scientists because

"The subject brings with it a special temptation . . . . the same great minds that devote themselves to physics, to
chemistry, or to biology, do not take up psychology. ... then again the psychologist is probably a dabbler in metaphysics. [But] A little metaphysics is not enough to show that his so-called principles are fictions." Ibid.

82. Ibid. This obstacle arises due to a natural desire to replace fictions with truth. Bradley added that "...if he looked closer, he would see that human beings cannot get on without mythology." Ibid., pp. 317-18.


85. In the account which follows my cursory examination of Appearance and Reality was guided by the account of this system in John Passmore, A Hundred Years of Philosophy, 2d rev. ed. (New York: Basic Books, 1966). Any errors in my account are, of course, my own responsibility.

86. Ibid., pp. 61-64.

87. Ibid., pp. 61-62.

88. Ibid., pp. 65-68.

89. Sidgwick was educated at Rugby and at Cambridge. After taking his degree he served as a tutor and as a lecturer on various subjects in Cambridge. In 1876 he was appointed Praelector of Moral Philosophy at Trinity College; in 1883 he was elected Professor of Moral Philosophy there. A. S. Sidgwick and E. M. S. Sidgwick, eds., Henry Sidgwick: A Memoir (London: Macmillan, 1906). Sidgwick, unlike Green and Bradley, played an important role in the institutional beginnings of psychology. He was actively involved in reforms of the Moral Sciences Tripos and served as President of the Psychical Research Society for many years. This latter interest led him to be elected president of the second International Congress of Psychology held in London in 1892. Ibid., pp. 513-516. In 1892 he took over financial responsibility for Mind from Alexander Bain and remained in charge of it for it until 1900 when the "Mind Association" was established to carry on the journal. Ibid., p. 512.

90. Ibid., pp. 36; 129-58 passim.

91. Sidgwick's negative assessment of the post-Kantians is made clear in letters to his friends. In July 1870 he wrote to Roden Noel from Berlin:

"The Germans say that all the Hegelian teachers (tolerably numerous) are old men. Of the young men the few who take to philosophy regard the post-Kantian philosophy as (at best) a
valuable and suggestive forecast or imagination of the work of philosophy; but for what they actually believe, go back to Kant. The post-Kantian philosophy is a heaven. After Hegel the work stopped because of the confusion of tongues." (Ibid., pp. 232-33.)

For other similar comments on the post-Kantians see Ibid., pp. 150-51; 230; 237-38.

92. Sidgwick and Green were contemporaries who became acquainted with one another at Rugby. They were never close friends although each kept in touch with the work of the other. Green was by far the more influential teacher, gathering large numbers of students around him. The Memoir contains a poignant comparative assessment of their careers, as teachers, written by Sidgwick in 1884. Ibid., pp. 394-96.

93. C. J. Dewey "'Cambridge Idealism': Utilitarian Revisionists in late Nineteenth-century Cambridge," The Historical Journal 7 (1974): 63-78. Sidgwick had concluded that the felicific calculus would, in many cases, fail to point to conduct truly consistent with the social good. However, in asserting that intuition or conscience must be appealed to, he was restoring to ethics the very construct Utilitarians had been adamant about excluding. This concerned Sidgwick and he sought to temper the role of intuition by positing philosophical reason as an adjunct. Ibid., pp. 71-72, 76-78.

94. Sidgwick was not a member of the opposition like Green and Bradley. He actively involved himself in institutional developments related to psychology and was acquainted with Bain, Ward, Sully and other individuals important to psychology during this period.


96. Sidgwick, "Historical Psychology," pp. 359-60. Note that this criticism bears directly on Bain's account of the development of conscience.

97. This article was taken as a challenge by Bain. He delegated the task of formulating a reply to an associate, but ended up writing it himself. See Chapter 8, section entitled "Bain on Empiricism" below.

98. Sidgwick "Empirical Philosophy," p. 537

99. Ibid., pp. 542-43.

100. Ibid., p. 543.

102. This, of course, left psychologists with the problem of what role psychology was to play if it was not to provide the foundation of epistemology and ethics.

103. Ward's work indicates just how widespread the interest in German thought had become. Many individuals in Ward's generation—e.g., George Croom Robertson and James Sully—sought instruction in German philosophy as a corrective to the empiricism and associationism then dominant in Britain.


105. Ward, "General Analysis," pp. 369-70. Ward argued that there were precedents in other sciences for accepting such a central organizing construct. The psychological construct of the subject, he maintained, is as necessary to the representation of the facts, "as that of Substance in Physics, and perhaps that of Design in biology." Ibid., p. 371.

106. Ibid., p. 367.

107. In order to possess the properties of reproduction and association, mental objects must be discriminable. This criterion led Ward to claim that feelings are not mental objects. They cannot be presentations, and thus cannot, in and of themselves, enter into associations. According to Ward, feelings are added to or incorporated within presentations. Bain had argued that feelings are elements that can become associated and his account of the emotions rested upon this premise. Ward denied this premise. Ibid., pp. 376-77, 380-82. Ward's analysis led him to conclude that feeling cannot be the sine qua non of consciousness. Ward, "Psychological Principles (II)," pp. 472-75.

108. Ward distinguished two forms of attention—non-voluntary and voluntary. Non-voluntary attention is a function of the intensity of an object and it results in a change of feeling. Voluntary attention, on the other hand, is prompted by a change of feeling and it results in a change in the intensity of the sensory or motor object.

109. Ward, "General Analysis," pp. 384-85. This possible origin of movement was discussed by Bain but rejected in favor of his concept of spontaneity.

110. Ward, "Psychological Principles (II)," p. 478. Ward criticized the mental chemistry approach to the analysis of mind because it assumed that the ultimate elements—sensations or ideas—are capable of existing in isolation. Ibid., p. 470.
111. Ibid., p. 479

112. Ward also argued that association and reproduction presuppose continuity in experience because the association of distinct and isolated mental objects is impossible. Ibid., pp. 477-78.


114. Ibid., 163-64, 168-69. Despite the differences in the approaches they propose for psychology, Ward and Bradley draw similar distinctions as can be seen here. Ward insisted that on his view no metaphysical baggage—such as notions of the soul—need accompany the psychological construct of the subject.


116. Ibid., p. 57.


CHAPTER 8

DEBATES OVER ASSOCIATIONISM:

II. DEBATES IN MIND

In the 1880's and 1890's debates over the value and limitations of the laws of association appeared in the pages of *Mind*, the journal of psychology and philosophy founded by Bain. These debates involved interchanges between Ward and Bain, and between Ward and Bradley, as well as comments by Ward on the work of others adopting associationist views (e.g., Wundt). I will examine these debates, first looking at the exchanges between Ward and Bain and then at the somewhat more specialized differences between Ward and Bradley.

James Ward versus Alexander Bain

Following publication of Ward's classic *Encyclopedia Britannica* article, "Psychology" (1886), Ward and Bain discussed their differences in a series of articles appearing in *Mind*. This series of exchanges is worth examining for several reasons. In the first place, both parties were forced to state what they regarded as the proper relationship between psychology and philosophy and between psychology and physiology, and Bain made certain concessions on these points. Second, Ward's critique of the passivity of the associationist account led Bain to make some concessions toward a more active view of mind. Third, while Ward did not emerge as the undisputed victor, his criticisms made it difficult for subsequent
British psychologist-philosophers to maintain a thoroughgoing associationist account of the mind./4/ Finally, in attacking the physiological assumptions underlying Bain's associationism, Ward cleared the way for a truly psychological, and non-associationistic, account of perception and memory./5/

Ward's Critique

As we have already seen, Ward's psychology differed from Bain's in several respects. Ward's central assertion was that psychology must examine conscious experience only from the standpoint of the individual subject, i.e., conscious experience as it is experienced. Ward differed from many of the empiricists in denying that such a standpoint entailed the restriction of psychological methods to introspection alone. He asserted that psychology is neither necessarily, nor primarily, an introspective science, and stated that

There is nothing to hinder the psychologist from employing materials furnished by his observations of other men, of infants, lower animals, or the insane; nothing to hinder him taking counsel with the philologist or even the physiologist provided always he can show the psychological bearing of those facts which are not directly psychological./6/

On the other hand, this standpoint ruled out an entirely physiological approach to psychology. Ward insisted that physiological facts and psychological facts have completely different characters and that physiological facts alone can never suffice as an account of psychological facts./7/ Ward held that at some future date it might be possible to coordinate psychological and physiological facts, but that at the present time, each science was too underdeveloped for the attempt to be fruitful. Indeed, Ward argued that the potential benefit stemming
from such a coordination in the future, is a good reason for psychologists to focus upon developing a coherent account of psychological phenomena independent of physiological "correlates."/8/

**Against Psychological Atomism**

When we adopt the proper standpoint, Ward argued, it becomes clear that we cannot study sensations, feelings or ideas in isolation, as the associationists have done. Ward insisted that we must distinguish between feeling and reflective feeling, consciousness and self-consciousness. These distinctions entail the assumption that experience presupposes the existence of a subject. Psychological objects (sensations, feelings, and ideas) are related to one another (and their various elements) and to the subject or ego./9/ It is this latter relationship that provides the series of psychological objects with its character—the unified character of a continuum. In a very real sense, Ward here was reiterating the earlier idealists' insistence that experience has a relational character, a character imparted by the thinking subject.

On such an account, the mental chemistry approach of the associationists is simply wrongheaded. Neither perception nor thought can be accounted for on such a view. For example, the associationists' account of perception assumes that a striking feature presented in sensation serves to call up—by the principle of similarity—the residual impressions associated together in the past by the principle of contiguity. Ward objected to this account, maintaining that

Assimilation [or perceptual recognition] involves retentiveness and differentiation [through the movements of
attention] ... and prepares the way for re-presentation; but in itself there is no confronting the new with the old, no determination of likeness, and no subsequent classification. The pure sensation we may regard as a psychological myth; and the simple image, or such sensation revived, seems equally mythical ... . The $n$th sensation is not like the first; it is a change in the presentation-continuum that has itself been changed by those preceding; and it cannot with any propriety be said to reproduce these past sensations for they never had the individuality which such reproduction implies. Nor does it associate with images like itself, since where there is association there must first have been distinctness, and what can be associated can also, for some good time at least, be dissociated.\textsuperscript{10}

Ward contended that the relations existing among psychological objects was not taken into account by the associationists. He maintained that even the representation of simple qualities (e.g., red, hard, cold) in complex objects is influenced by their relation with other complex objects in the presentational continuum \textit{and} by the relation of these objects to the subject.\textsuperscript{11}

The associationist account of the relation between impressions and ideas is also inadequate, according to Ward. He claimed that there are no ideas answering to simple or isolated impressions: what are revived in memory and imagination are percepts, not unlocalized sensations and movements .... ideas as such are from the first complex and do not begin to appear in consciousness apart from the impressions which they are said to reproduce till after these impressions have been frequently attended to together, and have been more or less firmly synthesized into percepts or intuitions.\textsuperscript{12}

The mental synthesis that plays an essential role in the development of complex percepts has a non-associationist character. For example, the percept comprising the sight, taste, and feel of an orange, is a complex, but unified, whole. Ward denied that the sight of an orange reinstated the ideas of its taste and feel, as the associationists claimed. On the contrary, he asserted that the entire
unified complex is present when any part of it is. When we see an orange, the color constituent may dominate and when we eat an orange, the taste constituent dominates, but in both cases the entire complex is present. Ward pointed out that it is only with great difficulty that we can represent the color or the taste as distinct existences.

Ward's conclusion regarding the relation between impressions and images was that "images altogether are distinct from the presentation-continuum and cannot with strict propriety be spoken of as revived or reproduced impressions." His account of the formation of the representation-continuum indicates that association has become a secondary principle of mental development. The development of the memory-continuum does not result from the aggregation of impressions and ideas, as the associationists would have it. Instead it develops through a process of differentiation and integration in which attention plays the central role. Ward described the memory continuum as

a series of representations integrated by movements of attention out of the differentiations of the primary or presentation-continuum . . . . These movements of attention, if the phrase be allowed, come in the end to depend mainly upon interest but at first appear to be determined entirely by mere intensity.
According to Ward, association does play a role in the construction of this memory continuum but not as large a role as the associationists would have it. Ward claimed that the movements of attention are responsible for creating the contiguity upon which such association depends. He stated:

To ignore the part played by attention in association, to represent the memory continuum as due solely to the concurrence of presentations is perhaps the chief defect of Associationist psychology, both English and German.\(^18\)

In other words, it was Ward's view that the order in which presentations are reproduced is not determined by the objective order in which they occur, as the empiricists would have it, but by "the order in which they were thus attended to when first presented."\(^19\) The movements of attention are guided by the principle of subjective or hedonic selection which asserts that,

out of all the manifold changes of sensory presentation which a given individual experiences, only a few are the occasion of such decided feeling as to become objects of possible appetite (or aversion).\(^20\)

Ward continued,

We cannot psychologically explain the order in which particular sights and sounds occur; but the movements that follow them, on the other hand, can be adequately explained only by psychology. The twilight that sends the hens to roost sets the fox to prowl, and the lion's roar which gathers the jackals scatters the sheep.\(^21\)

The principle that explains this diversity of movement is the principle of subjective selection. Subjective selection concentrates attention and thereby increases the intensity of selected impressions by arresting competing movements, readjusting the appropriate sensory organs, etc.\(^22\) The crucial point here is that a prior activity, amenable to subjective control, operates as a determinant of association
by contiguity.

In support of this view, Ward cited cases where the association of successive presentations has a directional character, such as in learning the letters of an alphabet./23/ The difficulty we encounter when we try to recite the alphabet backwards belies the notion that neutral links are forged between adjacent presentations. However, the directional character of our thought is fully explicable if we maintain, as did Ward, that movements of attention determine the connection among presentations.

Ward also contended that there were problems with traditional formulations of the principles of association. In the first place, he denied that there was any separate principle of association by similarity. Instead, Ward postulated a new process called assimilation. Through assimilation a new presentation coalesces with a revived image and brings about changes in the presentation continuum./24/

Ward insisted that assimilation was not a process of association; indeed, he maintained that it was a process more fundamental than any process of association./25/ In denying that there was a principle of association by similarity, Ward echoed Bradley. He asserted that similarity or resemblance cannot be responsible for the revival of a presentation, since similarity is a state resulting solely from the comparison of two or more presentations. Furthermore, assimilation can only account for the revival of identical presentations. When two presentations are only partially identical (or similar) the operation of assimilation must be assisted by association by contiguity.
An example may help illustrate this point. Ward maintained that when a presentation \( abx \) revives the presentation \( aby \), the operating principle is association by contiguity, not association by similarity. The identity between their partial constituent \( ab \) leads to an assimilation to the residuum of \( ab \), i.e., the complex idea corresponding to \( ab \). Now this residuum, which had been contiguous with \( y \) calls up the residuum \( aby \). Although assimilation plays an important role in this process, the only principle of association operating here is that of contiguity, not similarity./26/

In the second place, Ward's formulation of the principle of contiguity differed from that offered by the earlier associationists. As we have seen, Ward objected to the atomistic assumptions underlying these views. He questioned whether presentations were ever actually distinct and isolated, as this view required, and, if so, how they ever came to be linked together. He wrote:

neither the isolation nor the links are clear,—not the isolation, for we can only conceive two presentations separated by other presentations intervening; nor the links unless these are also presentations, and then the difficulty recurs./27/

But Ward offered a way out of this conundrum:

if for contiguity we substitute continuity and regard the associated presentations as parts of a new continuum, the only important inquiry is how this new whole was first integrated./28/

As we have already seen, Ward claimed that the movements of attention are responsible for creating the contiguity upon which such association depends. It should be clear that in Ward's account of perception and memory, association plays a limited role. Association is regulated by the movements of involuntary and voluntary attention and is
secondary to the more fundamental process of assimilation.

The memory continuum is differentiated further as the result of other processes, including obliviscence and the repetition, or reduplication, of presentations. In Ward's account, memory is not the static product of isolated impressions recorded in the physical structure of the brain. It is a dynamic product, always undergoing modification in the light of new experience and under the demands of practical needs. It is these further alterations in the memory-continuum that account for the formation of yet another continuum—the ideational continuum—that underlies our intellectual and volitional activities./29/

The Ideational Continuum and the Critique of Mental Chemistry

The ideational continuum contains abstract as well as concrete conceptions. In his account of the development of abstract conceptions, Ward again departed from the associationist view. He argued that neither associationist principles nor principles of logic could provide an account of the development of abstract ideas. It is the internal relations of "ideational complexes" that determine such concepts:

the concept or "abstract idea" only emerges when a certain intelligible relation is established among the members of such a group; and the very same intuition may furnish the material for different concepts as often as a different \textit{geistiges Band} is drawn between them./30/

Ward held that the ideational continuum has a different character than that assumed by the associationists, and maintained therefore, that our examination of intellectual processes must be guided by this character, and not by appeal to logical principles. He was especially
critical of those who attempted to resolve thinking into such logical processes as comparison, abstraction and classification. He insisted that,

our ideational continuum is not a mere string of ideas of concrete things .... Not till our daily life resembles that of a museum porter receiving specimens will our higher mental activity be comparable to that of a savant who sorts such specimens into cases and compartments./31/

Instead,

What we perceive is a world of things in continual motion, waxing, waning, the centers of manifold changes, affecting us and apparently affected by each other, amenable to our action and, as it seems, continually interacting among themselves .... To understand intellect we must look at its actual development under the impetus of practical needs, rather than to logical ideals of what it ought to be. Like other forms of purposive activity, thinking is primarily undertaken as a means to an end, and especially the end of economy./32/

Ward reiterated his main point that logical analysis cannot provide us with the key to understand the process of thought.

The process of thinking itself is psychologically much better described as (1) an analysis and (2) a re-synthesis of this material already furnished by the ideational trains. The logical resolution of thought into hierarchies of concepts arranged like Porphyry's tree, into judgments uniting such concepts by means of a logical copula, is the outcome of later reflexion--mainly for technical purposes--upon thought as a completed product and entirely presupposes all that psychology has to explain./33/

In short, Ward was accusing the associationists of committing what William James later called "the psychologists' fallacy," that is, the fallacy of reading into early experience that which can only be known from our present perspective./34/ Ward felt that this fallacy tainted the entire "mental chemistry" approach to the analysis of mind. He maintained that the analysis of mental complexes into simpler elements is only possible for the mature mind, and that even then it is
undertaken only with great difficulty. Therefore to posit distinct elements as the basic constituents of mind involves confusing our present standpoint with the standpoint at which the experience was acquired.

Ward's alternative account of mind clearly implied the need for different methods to analyze the mind. In positing a fundamental continuity among presentations, images and ideas in the mind, Ward was completely rejecting the assumption that complex forms of mental life are aggregates of simpler elements. For this reason, he felt that the reductionistic analyses undertaken by those who advocated a mental chemistry approach could not reveal much about the true development of the mind.

Ward suggested that the processes of growth observed in seeds or embryos provided a far better metaphor for the growth of the mind. In such cases, growth takes place according to a principle of progressive differentiation and results in increased complexity and specialization. Instead of dissecting consciousness into discrete elements, the psychologist should examine the cycles of events in consciousness. In Ward's view, considerable preliminary conceptual analysis is a necessary prerequisite for such an undertaking. Because previous psychologists, under the influence of the 'mental chemistry' approach and the faculty approach, had failed to distinguish clearly among states of mind, contents of mind and acts of mind, Ward insisted that we must be extremely careful with our use of language while formulating psychological principles.
To illustrate the danger, Ward pointed to the conceptual confusion arising from Bain's failure to distinguish between the act of attention and the presentations or context that were attended to. It was Ward's view that this failure led Bain, and other associationists, to completely overlook the central role played by attention in mediating the processes of association. As we will see, disagreements about the status of attention became a focus of debates between Bain and Ward. Let us now turn to Bain's published response to Ward's work.

Bain's Reply

Bain's first comments upon Ward's work appeared in a paper reviewing the Encyclopedia Britannica article. Additional comments appeared several months later in a reply to Ward's own comments upon the review. I will review each of these in turn.

Bain's 1886 paper "Mr. James Ward's 'Psychology'" consisted of a summary of Ward's Encyclopedia Britannica article interspersed with critical comments. Bain professed the highest admiration for the work and the author, stating:

The thorough knowledge of previous works, the freshness of the handling, the never failing acuteness, the light thrown upon many of the dark places of mental science,—constitute the work a signal achievement of philosophical ability . . . . The work has the rare merit of being Psychology, and nothing but Psychology. It is nearly complete as regards fundamental problems, and the ultimate analysis of the distinctive properties of mind: a densely-packed dissertation, abounding in clear, though brief indications of the author's mode of solving the long-standing difficulties of our mental constitution.

Bain concluded the review in equally flattering terms:

The form of the treatise, as it now stands in the Encyclopedia, has obvious disadvantages. When the matters excluded by the narrow limits are filled in, when the illustration of the whole
is duly expanded, and when, finally the exposition of subtleties is transferred from brevier to pica, Mr. Ward will have produced a work entitled to a place among the masterpieces of the philosophy of the human mind./43/

Despite such praise, Bain registered his disagreement with virtually every major innovation made by Ward. This included his postulation of a subject; his doctrine of mental continua; and his treatment of attention. However, Bain tempered his criticisms somewhat by directing them at Ward's "linguistic innovations" rather than the substance behind them.

The "Psychological Subject"

Among the evidence Ward had produced in favor of the postulation of a subject, was the observed fact of self-consciousness. Ward revived J.S. Mill's criticism of phenomenal accounts of the self; arguing that such accounts entail the paradox that a mere series of feelings can be aware of itself as a series./44/ Ward reiterated the point that "that which knows," cannot be identical with "what is known." He concluded that this point, combined with the fact of self-consciousness, implies the need for a conception of the subject in psychology.

Despite the authority of Mill, his own mentor, Bain curtly dismissed this argument, stating:

As to 'a series of states being aware of itself', I confess I see no insurmountable difficulty. It may be a fact, or not a fact; it may be a very clumsy expression for what it is applied to; but it is neither paradox nor self contradiction./45/

While Bain conceded that we are in the habit of using verbal expressions that imply a subject, he insisted that this was merely "linguistic convention. The existence of a grammatical subject, he
asserted, does not imply that we need to postulate "a Subject more or less different from the acts of knowing, feeling and acting."/46/ Nevertheless, Bain noted that "I am aware that the recognition of subject in some such way as here proposed will be productive of comfort to many persons."/47/ And in a spirit of intellectual tolerance he wrote

I accept the doctrine of the Subject in the meantime, with certain provisos. One is that it shall not be a nucleus and hiding place of mysticism; another, that I may take it up and put it down as may seem convenient./48/

Of course this represented a very limited concession to the views of Ward, who claimed that the concept of the psychological subject carried no metaphysical implications, but insisted that it was not merely a convenient hypothesis, but a conception necessary to the representation of the facts of consciousness./49/ The instrumentalist approach to the doctrine of the subject advocated by Bain is very different from Ward's approach.

Continua vs. Psychological Atomism

Throughout much of the review, Bain's comments reflected such an instrumentalist approach. Most of his comments make it appear that Ward was simply suggesting alterations in terminology rather than substantive reinterpretations of psychological phenomena. This enabled Bain to maintain a flattering tone without making any substantive concessions. Serious discussion of the substantive differences in their positions was also avoided. This can clearly be seen in Bain's comments upon Ward's rejection of psychological atomism in favor of the mental continua construct. Bain wrote:
Now it is obvious that our language must provide for both the separateness and the unity or continuity of the stream of thought yet my fear is that "continuum" rather inclines us too much to the other extreme. Moreover, I am not aware of any erroneous tendencies due to the previous phraseology . . . . A train of impressions, presentations, ideas, may have any amount of coherence and dependence, that we may choose to assign . . . . [but] That the successive members of a train should be regarded as parts of one whole, is not only unnecessary but misleading. The idea of part and whole is extended beyond ordinary usage . . . . Except as a variety of expression suitable on occasions when the continuity of a series of states has to be emphatically set forth, I am not convinced of the need for this innovation./50/

Bain was more emphatic in his rejection of Ward's claim that the distinctness of "elements" of thought is the product of a process of differentiation from an original _totum objectivum_, a process more fundamental than the aggregating process of association. He stated tersely:

Our education from first to last takes principally the form of adding unit to unit under the retentive or adhesive attribute of our nature, with which we are so marvellously gifted; and any other process of development is quite secondary in comparison./51/

Bain touched on a number of Ward's other innovations including his criticisms of the law of relativity and his account of sensation and movement. In this context, he accused Ward of making capricious "references to the physical side of mental facts . . . his tendency, on the whole, being to discount it as an aid to psychical explanation."/52/ Oddly, enough, Bain did not choose to discuss this radical departure from his own position. While Bain accurately described Ward's account of the development of our notion of space, he concluded that the account introduced no new necessary conceptions./53/
Association and Attention

While Bain devoted a fair amount of text to Ward's criticisms of the principle of association, he did not clarify the nature of their substantive differences on any points. Bain presented an extremely muddled account of Ward's criticisms of the principle of similarity and then blamed Ward for the confusion. He concluded:

If he means that "association" is not an apt word for the suggestion of similars, I quite agree with him. That there is nothing to be said, however, as to the workings of Similarity as such, I could not admit without a degree of self-stultification that I am not yet equal to./54/

In an apparent concession to Ward, Bain acknowledged that many of our associations have a directional character. However, he simply stated that "this . . . is an ultimate fact" and downplayed the role of attention in bringing about this "fact."/55/ Bain did accurately describe Ward's account of attention and the role it played in the formation of mental continua. He postponed his criticism until the end of the review where he stated:

The immense compass assigned to the word [attention], is somewhat decomposing . . . . I make the fullest allowance for the need of a general word to express the reaction of the Subject upon presentations, &c., yet I doubt if the sum total of the influences that intensify impressions and promote their retention should be comprised under the one word "Attention." A still more general designation, such as "mental tension" or "conscious intensity", would be desirable; while "attention" could be reserved for special modes of intensification./56/

Bain, rather petulantly accused Ward of "tampering" with the British Army's "central word of discipline," and proposed a more restricted use of the term "Attention," suggesting that it apply only to those instances where pleasure or relief from pain is a motive, but is not immediately involved in the act. Bain wrote:
It is in this second class of impulses, where a prospective motive is at work, that the word attention is most characteristically employed: the case of a thing that has no charms in itself, and where we are induced to dwell upon it by some extraneous or remote consideration. Such is 'Attention' in the school and in the army./57/

Bain was indirectly denying that attention represents a general power by which we can control trains of ideas./58/ While Bain depicted attention as dependent upon volition, its influence was restricted so that it primarily served as a restraining force. The moral implications of such a view are clear./59/ In contrast to Bain's view, Ward gave volitional factors a central role to play as regulators of intellectual processes.

Bain continued his criticism of Ward's account of attention, reverting once again to the grounds of linguistic appropriateness. He wrote:

As regards the formidable enlargement of the sphere of meaning to be given to the word Attention, we certainly desiderate more reasons for the change [in scientific nomenclature] than, as far as I am aware, have been as yet supplied./60/

While Bain's review of Ward's work was superficially a positive one, a closer examination reveals that he disagreed with each of the major innovations Ward had found necessary to make for sound psychological analysis. The concessions granted by Bain concerned matters of terminology, not matters of substance. For example, he conceded that the term 'subject' might be employed at points as a verbal convenience. 'Continuum' and 'Attention' represent similar convenient expressions, albeit of somewhat more limited value. By focusing upon such linguistic matters, Bain avoided addressing substantive differences./61/ In subsequent articles, Ward attempted to bring out
these differences more clearly.

Bain's article, appeared in October 1886. In the next issue (January 1887) Ward published "Psychological Principles (III) Attention and the Field of Consciousness." In this article he reiterated his earlier points and emphasized the distinctiveness of his view vis-à-vis Bain's position. In April, 1887, Bain published an article entitled "On 'Association' - Controversies" and a note "On Mr. Ward's "Psychological Principles (III)." This collection of papers represents a critical examination of the assumptions of the associationist account of the mind in the late 1880's. I will first examine these papers then turn to a discussion of the course taken by the debate in the 1890's.

Association Controversies: (I) 1887

Ward's Reply, 1887

Ward's 1887 paper devoted considerable space to replying to Bain's "generous criticisms" within the context of a discussion of "Attention and the Field of Consciousness." Here Ward reiterated his concern about the prevailing tendency to "treat the same fact now as a process, now as a product, and [to] range on one level feelings which presuppose presentations and acts which presuppose feelings."/62/ He suggested that psychologists might learn a lesson from looking at Maxwell's Theory of Dimensions in physics, a theory which attempted to express all physical quantities in terms of a set of fundamental units. Psychologists, Ward charged, are always confusing dimensions by arbitrarily changing their units as, for example, when they talk of
properties or functions of the mind "as if there was no difference between predicating property and function."

Ward went to considerable length to demonstrate that Bain was guilty of this charge, although he was not simply accusing Bain of linguistic carelessness. For Ward, the distinction between subject and object was fundamental to any analysis of mind. On these grounds the conflation of such things as properties or functions of the mind is quite serious for

while everything has properties, functions—unless metaphorically employed—pertain only to agents. If Mind is to be viewed as having functions it must be viewed as an agent.

Of course such necessity was denied by Bain, who would only go so far as to say that the term "subject" might be a verbal convenience. Here Ward was highlighting a fundamental difference between his view and that of Bain's. Nevertheless, following an examination of his doctrine of the will, Ward asserted that

Professor Bain's exposition of the general features of mind involves substantially the same analysis as that made by the present writer, but . . . the wavering and uncertain connotations of such terms as consciousness, feeling, will, volition, state, act, activity and the like have rendered any clear issue impossible.

Ward, however, reached this conclusion by selecting out descriptions which admit of teleological interpretations. Moreover, Bain's earlier comments indicated that he would deny that these expressions carry such implications. The fundamental differences between Bain and Ward are not simply a matter of terminology, despite what each might politely contend.
For Ward, the distinction drawn between subject and object carried further implications. He insisted that such a distinction was necessary to be able to account for psychical activity. To this end he posited a power of distributing attention in the subject. Psychical acts, he wrote, acts that are due to an agent, all have something in common—they imply activity and an object. The diversity of acts cannot be explained in terms of diversity of objects, even when these objects are imbued with dynamic properties, as in the Herbartian system./67/ Nor can they be explained by being designated "forms of consciousness," as the term "consciousness" is too often used in a passive sense. Attention, Ward concluded, is the proper term to express what is common to all psychical acts. Furthermore, attention is clearly a function of the subject./68/

In reply to Bain's claim that his use of the term attention violated standard usage, Ward pointed out that even in common parlance there is a generic sense of the term, which takes into account degrees of attention:

"'Attention' in the school and the army" is also known as a concentration of attention, and its absence as a relaxing or remitting attention . . . The proposal to use it absolutely or in this wider sense is very much like the proposal to use 'magnitude' or 'heat' (i.e., temperature) in such fashion./69/

Ward also pointed out that Bain's proposed alternatives were unsatisfactory because "mental tension and conscious intensity cannot be equated to each other, and can neither of them express the reaction of the subject upon presentations."/70/
Against Bain's claim that such a change in nomenclature was rash and premature, Ward cited both Locke and Hamilton who had acknowledged the important role played by attention. Ward further illustrated the value of such a change in nomenclature by demonstrating that volition, as well as intellection, could be accounted for by the powers of attention acting upon certain presentations. In other words, Ward showed that apperception and innervation are similar processes. On physiological grounds alone, Bain would have had to deny the similarity since he would have held that apperception is related to afferent nerve currents while innervation is related to efferent currents. /71/ Regarding such an objection Ward made two comments:

In the first place, it is not a matter that concerns psychology proper at all. When psychologists as such are sure of their facts and neurologists in like manner sure of theirs, we may expect a great advance of knowledge from careful endeavours to correlate the two. A hopeful beginning has indeed already been made; but meanwhile the most disastrous confusion has befallen the more difficult inquiry through plausible but hasty interpretations of unverified physiological hypotheses. /72/

Second, and following from this point, Ward noted that,

it is, to say the least, extremely questionable whether muscular efforts are the concomitant of what Prof. Bain calls motor currents, and not rather of certain afferent excitations. /73/

Here Ward cited William James' paper on the feeling of effort and Ferrier's Functions of the Brain. In the light of subsequent developments, it is clear that Bain was guilty of adopting "hasty interpretations of unverified physiological hypotheses." /74/

To summarize, while Ward criticized Bain for sloppy linguistic practice, this line of criticism also implied disagreement about more substantive issues. These deeper differences--concerning the necessity
for postulating a subject, the centrality of the construct of attention
and the value of physiology—are clearly brought out by Ward, whereas
Bain had glossed over most of these differences in his earlier review.

**Bain's Rebuttal, 1887**

Bain's rebuttal, published in April 1887, continued to gloss over
many of their differences. He began by defending himself against the
charge of linguistic sloppiness by contending, with good reason, that
some degree of looseness of expression is necessary at the outset in
order to aid the reader in arriving at an understanding of the subject
matter. Bain stated:

> I despair of giving an accurate conception of the fundamental
constituents of mind at the outset; I am only too glad if I can
give an approximation to begin with, and gradually improve upon
the statement, so as to end with just and definite notions of
all essential matters. /75/

Bain further defended his position by showing that in some of the
cases cited by Ward, the earlier looseness of expression had been
gradually improved upon in the course of the work. /76/ Furthermore, he
noted that Ward advocated the same strategy in his own work, and cited a
passage where Ward remarked upon the futility of attempting to determine
the relative appropriateness of the terms "states," "modes," and
"acts." /77/

Bain's points are well taken but they fail to address the deeper
issue Ward was raising by focusing on these linguistic confusions—i.e.,
that certain terms accurately express the activity of the subject and
that this activity plays a central role in psychological functioning.
Bain sidestepped this issue and others by treating differences between
his and Ward's views as if they were simply a matter of linguistic usage. Oddly enough, Bain indicated his own discomfiture with such a line of criticism concerning his doctrine of the will. As we have already mentioned, in discussing Bain's view of the will, Ward stressed the similarities between their views by highlighting passages in Bain that suggested that volition implied the action of a conscious subject. Despite the fact that substantive differences were raised here, Bain replied:

I should prefer being challenged upon the substance and meaning of the general doctrine of the Will, and will remain for the present under the accusation of having used improper and confusing language in relation to it./78/

It is somewhat ironic that immediately following this passage Bain indulged in a further diatribe concerning the "proposed use of Attention." Although he appeared to have shifted his view concerning the importance of the term, he defended his rejection of it with appeals to ordinary usage:

Granting that the meaning intended to be expressed has all the importance attributed to it, we must yet be aware of what is involved in inducing a hundred millions of people to surrender the negative word 'inattention' when the situation occurs wherein it is at present employed . . . . We may of course have one meaning in general circulation, and another in the schools of Psychology. Such diversities are frequently unavoidable; but there is a peculiar aggravation in the conflict of usage in this instance, and the sooner we get out of it the better./79/

The degree of aggravation displayed by Bain is indeed peculiar, as is his demand that Ward "attempt a positive definition of the part or parts of consciousness excluded from attention."/80/ Ward had already clearly done so in the *Encyclopedia Britannica* article, where he described the grades of consciousness including (1) a centre or focus of consciousness (the domain of attention), (2) a wider field, which may,
at any time, become the focus, and (3) subconsciousness which contains presentations lacking the intensity to be distinguished or attended to./81/ Furthermore, Bain had described these very distinctions in his review of Ward's article. It is hard to avoid the conclusion that Bain was grasping at straws in his criticisms of Ward's account of attention./82/

**Bain on "Association" Controversies, 1887**

A more extensive examination of some of the issues raised by Ward was presented in the article "On 'Association' - Controversies" which appeared in the same issue of *Mind* (April 1887). In this article Bain addressed such questions as (1) whether the two principles of association (contiguity and similarity) exhaust the powers of the intellect, (2) whether the laws of association can be reduced to one (contiguity), (3) what other circumstances aid the operation of association, (4) whether other principles, specifically Wundt's doctrine of apperception, are required as supplements to the laws of association in order to account for the higher mental processes and (5) the role of principles of association in relation to philosophical problems. In addressing these questions, Bain reiterated his faith in the ability of the principles of association to account for all mental processes and to make a contribution toward the understanding of philosophical processes.

Concerning the exhaustiveness of the principles of association, Bain reasserted that discrimination must also be ranked as a primary attribute of intellect. Furthermore, in an apparent concession to Ward, Bain stated that the simplest, self-subsisting ideas were probably
already complexes. Nevertheless, he denied that any new principle (e.g., assimilation) was needed to account for this fact. He stated instead that "the process of converting the Sensation, or primary Impression into the Idea supposes the very same psychical force as that expressed by the law of Contiguity."/83/

Concerning the possibility of reducing similarity to contiguity Bain cited other authors (Robertson and Sully) who maintained that these two laws were fundamental./84/ Before embarking upon his criticism of the views of Ward and Bradley concerning the principle of similarity, Bain asserted that the principle was the basis for "mental movements . . . leading to new assemblages of ideas in such forms as classes, generalités, imaginative comparisons, strokes of practical invention, and so on."/85/ It appears as if this principle was designed to account for many of the same mental products that attention accounted for within Ward's system. If so Bain's defense of the principle takes on an added significance.

In describing the views of Ward and Bradley, Bain misrepresented their position by claiming that it involved "the absolute denial of such a state of mind as the consciousness of agreement."/86/ Neither Ward nor Bradley denied the existence of such a state of mind. They simply stated that since such a state of mind only arose when two partially identical objects were before the mind, similarity could not provide an account of the revival of a partially identical object. Again, Bain asserted that Ward treated the flash of similarity "as a pure fiction."/87/ Ward recognized such a psychological state but claimed
that it arose with the aid of assimilation and contiguity, not similarity. Finally, Bain criticized Bradley's denial that we can have a consciousness of identity without the power of resuscitation—a phenomenon Bain claimed was "the extreme instance of similarity bereft of the aid of contiguity." What Bain is referring to here are such things as déjà vu experiences and the tip of the tongue phenomenon. As we shall see, in the 1890's Ward described these phenomena as the product of assimilation, not association by similarity.

Bain also claimed that there were problems with Ward's account had of the recall of abx in the presence of abx. Ward's account rested upon assimilation and contiguity, not similarity. But on this account, Bain asserted, "it is an open question which one of three courses will be taken, the recall, namely of abx, or of a group nox, or of nothing at all." In sum, Bain reasserted his position that a principle of similarity is necessary, but in doing so showed a lack of understanding of several of the points made by Ward and Bradley. Furthermore, he failed to examine Ward's alternative account thoroughly.

The issues raised in (3) and (4) overlap to some degree since if additional circumstances regulate association, it may be necessary to postulate supplementary principles. Bain asserted that the feelings and the will both play roles as conditions influencing the rate at which associations will be formed and the ease with which they will be revived. Insofar as either feelings or volition influence the intensity of presentations, they will facilitate the process of association. Bain
These forces do not of themselves make the Association, any more than heat and light enable a plant to propagate its kind; they are but the essential accompaniments; without being the fact, they are conditions of its full realisation. /91/

Now Wundt, whose doctrines were presented by Bain in this article, and Ward, whose doctrines had been glossed over by Bain elsewhere, both insisted that volition played a much larger role in the intellectual processes than an associationist account could or would admit. "Apperception" was the term employed by Wundt for the will applied to the operations of thought. Wundt claimed that principles of association are adequate to account for lower forms of sensation and memory, but that the new factor of apperception comes into play with all of the higher intellectual processes. In Wundt's system apperception plays a role similar to attention in Ward's system— it intensifies the forces of association and modifies the trains of thought. /92/ Bain summarized Wundt's account of the role of apperception as follows:

The processes of logic or reasoning, of imagination or art, of moral guidance, of working for ends, involve the double power of association proper and the control due to apperception. /93/

Bain's criticism of Wundt's view provides us with an indirect means of assessing his opinion of Ward's views. First, he pointed out that volition is only one of many circumstances playing a role in the forging and resuscitation of associations and that his own work provided an adequate alternative account of their influence. Bain stated:

when, therefore, Wundt says that association alone does not explain the higher intellectual functions, he only says what we all admit, namely, that Association needs the control of will and feelings, in order to bring forth our more important thinking products . . . . The scheme of Wundt does not lead to the slighting of Association as a great intellectual factor. His Apperception would be nothing without it. /94/
Moreover, Bain said, there is really no need to draw any line between lower and higher workings of association. Here he reverted to instrumentalism, stating:

To me the word apperception, as employed by Wundt is unnecessary and unmeaning. All that it is intended to convey is much better expressed by our old phraseology. If it is another name for the voluntary control of the thoughts it is superfluous and therefore mischievous. It leads us to suppose that there must be some distinct meaning to correspond, and we find there is no such meaning.95/

Thus dispensing with the issue of apperception, Bain glibly proceeded on to other matters. In his criticisms of Ward and Wundt, Bain displayed an unwillingness to grapple with the issues which challenged his position most directly. Alternative accounts of the fundamental thought processes were dismissed as mere verbiage; as adding nothing whatsoever to the older accounts. Throughout these articles Bain was reiterating the traditional Utilitarian-Associationist stance that the fundamental processes in the workings of mind are associational ones, and that no innate powers of the mind need be postulated.

One issue remains—that concerning the contribution of association to philosophical problems such as theories of Space, Time, Causality, Substance, etc. Bain asserted that metaphysics and psychology must be pursued independently for some time "before they can either confirm or weaken each other."96/ He advocated pursuing a "disinterested Psychology," amassing facts and revising assumptions until formulations result at that might be employed in practical applications. Both psychology and metaphysics would eventually profit from each others findings, if this reiterative process of revision of assumptions were to
continue. Bain wrote:

I do not see any mode of attaining a correct metaphysics until
Psychology has at least made some way upon a provisional
Metaphysics, which it returns after a time to rectify and
improve./97/

Certain well defined terms, Bain asserted, are required for us to
even be able to state the principles of association. In order to
formulate these principles we must have distinct definitions for such
"Idea," "Image," "Memory," "Recollection," etc. Association psychology,
therefore, aids us in achieving definitions of these and related terms.
Bain concluded:

Without a detailed psychology of Association I do not see how we
can arrive at just definitions of the fundamental terms
Impression, Sensation, Actuality, Reality, Presentation,
Perception, Idea, Representation, Thought./98/

While the formulation of an adequate account of association no
doubt requires sound definitions of impression, sensation and idea, it
is a long step from clear notions of these terms to an adequate notion
of thought, and an even longer step to a notion of actuality and
reality. Bain, perhaps intentionally, sidestepped the question of the
degree to which association aids us in understanding these latter
notions. Nevertheless, the traditional account that stated that
principles of association are essential to an understanding of
fundamental philosophical problems is implied both here and in Bain's
earlier work. This issue will resurface in papers Bain published during
the 1890's.
Summary

Thus far we have seen that Ward offered an alternative account of the development and functioning of the mind. Bain, in reviewing Ward's work, tended to reduce these differences to matters of linguistic choice, while noting that Ward's choices were frequently unfortunate. When Ward reiterated his criticisms of the Associationist point of view, Bain continued to respond to the purely verbal differences.

In his 1887 article on association controversies, Bain presented the same fundamental position he had held since 1855. Up to this point, Bain showed little indication of having profited from others' critical examinations of the laws of association. However, there are some indications that suggest he was beginning to rethink the issue of the relation of psychology to philosophy.

Association Controversies: (II) 1888 - 1894

After 1888, Bain's articles began to address the more general implications of the attacks upon associationism and empiricism. This series of articles included "The Empiricist Position," (1889), "On Physiological Expression in Psychology," (1891), "The Respective Spheres and Mutual helps of Introspection and Psychophysics," (1893) and "Definition and Problems of Consciousness," (1894)./99/ It is in these articles that we find shifts in Bain's views regarding the relations between psychology and philosophy and between psychology and physiology. In addition, notes appended to the fourth edition of Senses and Intellect (1894) show the impact of these shifts.
Bain on Empiricism

Bain's 1889 article, "The Empiricist Position," was written as a response to challenges to empiricism levelled by individuals such as Henry Sidgwick. However, the article did not provide a detailed defense of empiricism, but simply restated the fundamental tenets of the position. In this restatement, Bain advocated a somewhat more sophisticated and critical form of empiricism than heretofore.

For instance, Bain reasserted the traditional empiricist tenet that all our knowledge is drawn from experience. However, this tenet was given "a liberal rendering" so that "experience" included products of intuition, as well as of sense. The impact of such a concession was tempered somewhat by Bain's adoption of the Kantian distinction between the genesis of knowledge and its validity. As we have already seen, such a distinction played a central role in critiques of empiricism and provided the ground for the demarcation between psychology and philosophy (epistemology). Bain did not employ the distinction to demarcate psychology from philosophy, but to deny the validity of "knowledge" based solely upon intuition. While intuition may provide us with potential knowledge, he asserted, such knowledge cannot be regarded as valid until confirmed by experience. Only consistent repeated observations can provide us with grounds for claiming that knowledge is valid.
In addition to this concession, Bain made other apparent revisions to empiricist precepts. He admitted that our understanding of the sources of knowledge must be analogical, and thereby admitted the possibility of incurring the psychologist's fallacy. He asserted that although knowledge begins in sensation, it is sensation accompanied by the intellectual powers of Difference, Agreement and Retention. And he wrote:

Because sensation is, in the maturity of knowledge, identified most with the particular, and the processes of intelligence, apart from sensation, with the general, it does not follow that we begin life by imbibing particulars and gradually resolve them into generals. The particular and the general, in their ultimate nature, must move together./102/

Bain insisted that all statements concerning causation, coexistence and resemblance are drawn from experience supplemented by the assumption that the future will repeat the past. Our conception of the material world, he argued, arises when we perceive the recurrence of definite sensations with definite movements. This experience, augmented by the law of uniformity, yields expectations concerning such perceptions in the future. And it is such expectations which contribute to our conviction of objectivity in the external world./103/

Finally, Bain indirectly acknowledged Ward's attack in noting that the empiricist must "build up the subject from his a posteriori elements."/104/ Bain did not personally accept the challenge, but in other places commented favorably on James Sully's empiricist account of the origins of the self./105/
The major shift seen in this paper was in Bain's acceptance of the distinction between the genesis and the validity of knowledge. This distinction also implied a demarcation between the proper domains of psychology and philosophy. As we have seen, this demarcation criterion presented special problems for those in the Utilitarian-Associationist tradition since it implied that psychological inquiries could have no bearing on philosophical matters. Bain did not directly comment upon this implication of the Kantian distinction, but elsewhere offered a different criterion for demarcating psychological and philosophical matters.

In "Definition and Demarcation of the Subject-Sciences," (1888) Bain reformulated the demarcation question for the "leading departments of subjective knowledge—Psychology, Logic, Ethics, Philosophy." The goal, he said, was to form homogeneous groupings of our knowledge so as to foster "economy of the powers of understanding." Bain asserted that the province of philosophy was the residuum not fully disposed of by psychological, logical and ethical inquiries. Therefore, the method followed in his analysis was to inquire "how much of the discussion ... can be disposed of under Psychology or Logic, so as to leave a minimum to Philosophy proper." He concluded that there were several questions which could not be fully answered by means of "psychology and logic." Such questions fall within the domain of philosophy. Philosophy is to deal with certain questions such as the grounds and validity of the uniformity of nature, whether knowledge originates in the general or the particular, etc.
It is important to emphasize that Bain did not maintain that this philosophical domain was independent of the other subject-sciences. Both logic and psychology were to serve as adjuncts in providing preliminary and partial answers to these questions. On the other hand, both logic and psychology do have exclusive rights in dealing with certain questions. For example, in describing the relations between psychology and ethics, Bain asserted that

Psychology should claim absolutely the handling of the Will, the nature of conscience, whether it be viewed as simple or as complex, and the reality and sources of Disinterested Action.

In making this claim, Bain appears to have completely overlooked the critiques of empiricist ethics made by Green and Sidgwick. Other comments indicate that he was aware of these critiques, but dismissed them. He warned that certain thinkers see theistic consequences—consequences pertaining to God and immortality—following from inquiries into "Man's chief Good, or Highest End" and therefore are likely to regard certain issues in a different light than would one who carefully demarcated between ethics and theology. Bain wrote:

Hence it is that the ethical writer is not likely to remand to Psychology proper the analysis of conscience. For the same reason, Free-will, which has also been credited with high theistic bearings, may, in spite of any remonstrance of mine, continue to be regarded as an indispensable portion of the science of ethics.

Thus, whereas Bain was willing to accept the Kantian distinction between the genesis and the validity of knowledge, it did not lead him to abandon his view that psychological investigations should inform philosophy. While willing to draw boundaries between the disciplines, the boundary lines that were selected awarded much more territory to the
empirical disciplines./113/

Bain on "Physiological" Expression

The second major revision to Bain's views appeared in an 1891 article, "Physiological Expression in Psychology." Following the second edition of *Senses and Intellect* (1864), Bain delegated the task of revising the physiological portions of the work to others./114/ Yet criticisms of the appropriateness of "physiological psychology" in general, and of Bain's doctrines in particular, abounded. Bain chose to address this issue in the fourth edition of *Senses and Intellect* (1894) and the 1891 article gave a fuller statement of his belief in the relevance of physiology to psychology./115/ In this statement Bain made a marked shift toward instrumentalism. He conceded (to Ward, Bradley and Stout,) that our knowledge of nerve processes leaves a great deal to be desired, but still maintained that physiology can be of value for psychology. Bain asserted that psychological inquiries must be guided by "subjective indications," but also pointed out that in many instances subjective language is simply inadequate for expressing the psychological fact. In such cases, physiology may be invoked to clarify the psychological process. However, and here Bain's instrumentalism becomes apparent, it is not necessary that the physiology employed is well grounded: "a merely hypothetical supposition may be helpful while it need not be abused."/116/

Bain described specific ways in which physiology has helped illuminate psychological functioning, especially the functioning of the senses, the emotions and the will. He claimed that the value of this...
approach is likely to increase in the future because the subjective study of mind as intellect "has probably even now reached its culminating point," while further physiological research may serve to "add to its precision and its helpfulness as a guide in practice."/117/

Bain also commented on specific physiological doctrines such as the feelings-of-innervation doctrine. Aware, no doubt, of the controversy surrounding that doctrine, Bain retreated from his earlier enthusiastic support. Bain had earlier supported the feelings-of-innervation account because it provided a physiological basis for the distinction between passive and active modes of consciousness./118/ In 1891, Bain asserted only that distinct forms of muscular stimulation are likely to underlie distinct forms of muscular sensibility. Furthermore, he argued that the subjective analysis which identifies active and passive factors in the mind has priority over any "disconfirming" physiological evidence./119/ Whereas Bain had once advocated the feelings-of-innervation doctrine on the grounds that it provided physiological support for "the great antithesis of movement and sensation, throughout the whole mental system... which is the most vital distinction within the sphere of mind," here he asserted that verification of that hypothesis "would not add to the evidence of our subjective analysis and its overthrow would not impair the validity of that analysis."/120/ On this issue, Bain appears to have no qualms about asserting the a priori validity of intuited knowledge.
Despite this shift, Bain continued to argue that psychical activity was transformed into muscular activity and that mental attention is bodily attention "idealised by being thrown more exclusively inward upon its nervous tracks."/121/ Furthermore, Bain asserted that if this account is rejected "there is still to be sought within the compass of the system a factor of activity at present entirely unstateable."/122/ What he chose to ignore was the fact that the central focus of Ward's work was the attempt to elucidate the characteristics of this "factor of activity" in non-physiological terms.

Bain reiterated his earlier assertion that physiological conditions cannot shed light on the "higher complications" of the mind. But he continued to equivocate on this point and repeated his claim that the seat of impressions was identical to the seat of ideas and he continued to espouse his organic theory of memory./123/

Bain insisted that physiological adjuncts are of particular value in elucidating the operation of memory or retentiveness, for here we find "conditions ... beyond purity of subjective expression."/124/ However, he did acknowledge that the physiology alluded to is "not what would be called profound physiology."/125/ Physiology may also be of value in providing clues concerning the nature of sensations and ideas when out of consciousness, Bain stated:

We want at least a language-aiding hypothesis to enable us to conceive what gives no sign of existence ... without pretending that we can verify any one view of the arrangements and processes of the nervous system that are the physical support of memory, we cannot help craving for some hypothesis, as far as the lights of physiology will carry us. We do not find that such hypothesis leads to any perversion of the
psychical facts; while it need not be rated beyond what it is really worth, viz., a help to expression./126/

As we will see, Ward did claim that Bain's organic theory of memory perverted psychical facts. However, here I am primarily interested in Bain's claim that the primary value of physiological hypothesis was rhetorical. Such a view represents a shift from his earlier position, a shift that can be clearly seen by contrasting the following two quotations. The first appeared in the second edition of *Senses and Intellect* (1864):

> It enters into the plan of this work to state in all cases the known physical accompaniments of our various feelings or conscious states. The following reasons may be given in justification or [sic] this course.

*First.* There are bodily movements and effects that regularly happen in company with our feelings . . . [and] it cannot be irrelevant to study them scientifically.

*Second.* I look upon the [body] expression so-called as part and parcel of the feeling. I believe it to be a general law of the mind, that, along with the fact of inward feeling or consciousness, there is a diffusive action or excitement over the body members. According to this view, every variety of consciousness ought to have a special form of diffusive manifestation./127/

This justification of the employment of physiology by a general law of mind contrasted sharply with that presented in the fourth edition of *Senses and Intellect* (1894):

> My conviction of the propriety of bringing these [physiological] topics before the student, not withstanding the adverse opinion of many has been strengthened rather than otherwise. It is not merely that the definitions and doctrines of physiology have a direct application, and that their absence would make psychology poorer in its own province—it is, further, that the expression of mental states is, in many ways, aided by reference to their physical adjuncts. Even when such adjuncts are so imperfectly known as to have only a hypothetical rendering, the mention of them is still valuable in improving our scanty resources of subjective delineation./128/
Here physical adjuncts are valued for the rhetorical role they can play. This was also the position advocated in "Physiological Expression in Psychology." In that article Bain cautioned against physiological excess. Like Ward, Bain advocated keeping subjective and objective treatments apart and noted that

in mixing material phraseology in the expression of the mind, we must, of course, observe the precaution of not giving the one as a substitute for the other; but ordinary care is usually sufficient to avoid this error. /129/

And he maintained, somewhat equivocally, that reference to physical adjuncts is not useful in describing higher mental processes, "that is to say, it cannot be assigned with precision or even with suggestive hypothesis." /130/ In 1891 Bain concluded:

All this leaves to the introspective inquirer by far the largest portion of our mental constitution. Thus the question as to physiological conditions is still a comparatively small part of a well-developed system of psychology. /131/

Bain on Introspection and Experimentation

Bain reiterated this conclusion in his 1892 address to the Second International Congress of Experimental Psychology. /132/ Here he defended the primacy of the introspective method, "the alpha and omega of psychological inquiry," versus the method of psychophysical experimentation, and stated that "its compass is ten times all the other methods put together, and fifty times the utmost range of Psycho-physics alone. /133/

Bain chronicled the contributions of the introspective method vis-à-vis those made by objective methods such as physiology, the observation of infants, the insane or animals, and psychophysics. The
grand metaphysical issue of thought and reality, knowing and being has
been illuminated by introspection, he claimed, and by no other methods.
The issue of the origins of our thought and of various notions such as
Space, Time and Cause has been illuminated by some of the objective
methods, but introspection still plays the leading role. Such
investigations, he remarked, have not yielded solid conclusions but this
is not entirely the fault of the introspective method but due to the
fact that "an inscrutable contingent in the shape of instinct, now
stated as heredity," plays a role./134/

Bain conceded that in investigations of the "lower region of Sense
and Instinct," psychophysical experiments have led to brilliant
discoveries, while careful objective observation has aided our
understanding of outward manifestations of feeling. Nevertheless, he
said, large departments of psychological inquiry require the aid of
introspective analysis:

The division of the mind as a whole into the three usually
recognized powers; the further analysis of the intellect into
faculties or otherwise; the ultimate rendering of Will,
Attention, Desire, Belief; the resolution of the vast plurality
of our Emotional nature into the fewest elementary constituents;
the problems of Beauty and Fine Art; the foundations of Sympathy
and the rendering of conscience, can be approached mainly
through introspection./135/

While introspection must be virtually the exclusive method in the
"Qualitative analysis of our mental powers at large" there is another
aspect to psychological inquiry, namely, Quantitative Analysis, or "the
measurement of degree or amount in our various states of feeling or
emotion."/136/ Furthermore, Bain claimed that "it is only in so far as
this [quantitative analysis] is possible that we are entitled to speak
of our subject as a science in the proper sense, that is; a science that can yield applications to practice."/137/ And he noted that introspection, pure and simple, is least able to furnish precise estimates of degree./138/ Nevertheless, even in this sphere, introspection is an invaluable aid in furthering such investigations. Bain stated that "even where it [psychophysics] does assume the initiative, Introspective Psychology must step in to give completeness."/139/ And he concluded that by the nature of the case, the initiative, in the more fruitful lines of inquiry, will be most frequently taken by Introspection, which also, by its powers of analysis, will still open the path to the highest generalities of our science./140/

Bain, even at this late date, still asserted the primacy of the introspective method in psychology against the newer, more objective methods such as physiology and psychophysics. Bain did acknowledge that objective methods have something of value to add, but he insisted that they cannot serve as the sole approach, and that their use be guided by the results of introspective analysis. Given the audience to which this talk was addressed, this paper must be regarded as Bain's official defense of the older psychology vis-à-vis some of the newer versions./141/

Bain on Consciousness

In 1894, Bain published "Definitions and Problems of Consciousness" and the fourth edition of Senses and Intellect, which included several new notes containing restatements of, or revisions to, his earlier positions. In the "Consciousness" article, Bain attempted to provide a systematic definition of the term while insisting that it should not be
made the central term of all psychology./142/. His description of consciousness, as consisting in "the passing phases of our mental being" or in "moments of mental wakefulness or mental efficiency for present ends" show that he had not given up his phenomenalist and atomistic view of consciousness./143/ Bain argued that consciousness was a necessary prerequisite for acquisition and therefore the basis of all important mental modifications./144/ He did raise the question of whether some important mental modifications arise "in the intervals of our consciousness," but his own views on that question were squarely in line with that given by James and John Stuart Mill./145/

A new twist was given by Bain's functional definition of consciousness as that which enables us to learn from experience and which makes us more than mere machines./146/ Finally, Bain analyzed possible meanings of self-consciousness. He suggested that what is usually meant by that term is not a fundamental aspect of consciousness but a complex emotion, more properly designated as self-interest./147/ In a more narrow sense, he acknowledged that self-consciousness might be taken to mean consciousness in the absence of any objective reference. Of course, this was the sense in which the term was employed by Ward. Bain warned that there are dangers in this approach since all constituents of the subject mind—feelings, cognitions and volitions—can be referred to self-consciousness. Such an analysis, he argued, involves the aggrandizement of both the self and consciousness./148/
Bain noted that the term "self-consciousness" is frequently employed in another context as the source and criterion of knowledge concerning "the ultimate nature of existence as a whole."/149/. He commented that a careful assessment of the terms "self" and "consciousness" reveals neither "to be capable of sustaining this momentous issue."/150/ After examining such uses of the term, Bain concluded that "the critical examination of the compound 'self-consciousness' readily gets beyond the pale of psychological adjustment."/151/ The implication here was that the aggrandizement of self-consciousness removes it from the correcting influence of careful psychological analysis./152/ A further implication is that Ward is guilty in this respect.

Senses and Intellect: Fourth Edition (1894)

The fourth edition of Senses and Intellect (1894) contained several revisions to positions held earlier by Bain. As we have seen, in that edition he attempted to divest his account of muscular sensibility from the problems plaguing the feelings-of-innervation theory./153/ He also altered his account of the origins of sympathy, arguing that an "inherited habit of sociability" must play a significant role./154/ Of more relevance for the debate on associationism, were his accounts of the role played by instinct in intellectual development and his continued critique of Ward's use of attention and subject as central constructs in psychology. Further critiques of Ward's work were added. These included an examination of his view of the presentation continuum and a critical note on his account of the laws of association.
We have already seen that Bain modified the *tabula rasa* view of the earlier Utilitarian-Associationists. In the fourth edition of *Senses and Intellect* he amplified these modifications by positing primitive powers underlying certain of our intellectual functions. While he hinted that there may be large numbers of such powers, he cited only two: our ability to interpret the expressions of those about us and our instinctive rendering of three-dimensional space. Although such abilities are not developed through the experience of the individual alone, they do not have an entirely non-experiential origin. These are inherited abilities, but they represent powers built up through the cumulative experience of mankind. Nevertheless, the positing of such primitive powers represented, at the very least, a recognition that sense experience and the laws of association cannot provide a full account of the workings of our minds.

In this edition of *Senses and Intellect* Bain registered his continued opposition to positing "attention as a fundamental psychic power" and the "subject" as a fundamental category. He reiterated his usual criticisms of Ward's use of the term "attention": the broad scope given to it and the deviation from the term's common usage. A more specific line of criticism focused on Ward's contention that attention, operating upon cognition, can yield feeling (pleasure or pain). At dispute between Bain and Ward was whether feeling has a primordial character and if it is present at the outset of experience. For Bain, pleasure and pain are fundamental forms of consciousness. Because they are associated with the increase and diminution of vitality (law of self-conservation), all complex forms of consciousness are evolved,
directly or indirectly, from these feelings.\textsuperscript{159} For Ward, cognitive activity is the fundamental form of consciousness and therefore, cognition precedes feeling. Ward insisted that feeling was \textit{not} primordial, and not necessarily present when there is consciousness. Feeling, he wrote, arises as the "effect upon the subject of qualitatively distinguishable presentations."\textsuperscript{160} We attend, involuntarily, to changes in the presentational (or ideational) continuum and this act of attention yields pleasure or pain.

Bain wrote that this "power given to Attention to evolve Feeling out of what is properly Cognition, or Intellect" was the "most staggering circumstance in the whole scheme" and "at variance with fact."\textsuperscript{161} While Bain thought he was rejecting Ward's analysis on empirical grounds, a deeper issue played a role here: Ward's claim that psychology must treat feelings in their subjective form.\textsuperscript{162} As states of a subject, feelings have none of the characteristics of presentations: they cannot be differentiated into parts or individualized. As such, they are totally unlike sensations or simple ideas and cannot enter into relations like other presentations can. According to Ward, feelings, qua feeling, cannot admit of association or reproduction.\textsuperscript{163}

Such a conclusion invalidated the account given by Bain of the evolution of complex forms of consciousness such as emotion, and, therefore, it is not surprising that he rejected Ward's account. Considering his earlier tendency to avoid the real issues, it is also not surprising that his objections focused upon Ward's failure to define
"Attention" and the "Subject" rather than upon their differences over the nature of feeling./164/

In objecting to Ward's postulation of the subject as a central construct in psychology, Bain insisted that a much fuller account was needed than had been provided. He asserted that the antithesis of subject and object was not fundamental, as Ward claimed, but emerged from experience. Bain argued that James Sully's account of the growth of consciousness of self provide a vastly more satisfactory account of the development of the antithesis of subject and object./165/ Again, this reply missed the main point of Ward's analysis. Ward had insisted that the subject, whether self-conscious or not, is presupposed in all psychological functioning. Ward maintained that the subject is a primitive given, and that describing the "growth of consciousness of self" involves tracing the elaboration of such a primitive given. As Ward states, this process of elaboration may, or may not, take place in the manner described by Sully, but the subject exists psychologically prior to any such developments./166/

In the fourth edition of Senses and Intellect Bain revised Note F, which is the note frequently referred to as evidence of Bain's active conception of mind. In this note Bain, in response to Martineau, had asserted that a process of dissociation precedes any process of association./167/ Bain's revisions to this note confirm my conclusion that he was making only limited concessions to non-atomistic and non-associationistic accounts of the mind.
The revised note contained a criticism of Ward's account of the presentation continuum. In Ward's account, sensory experience evolves from an original, distinctionless unity. Bain, in apparent contradiction to his earlier concessions, denied that the consciousness of the infant resembles anything like a continuum. He asserted instead that our sense organs operate from birth to provide us with distinct sensations. These become combined through association and eventually result in all our complex ideas. Bain did admit that the delicacy of sense discrimination does show marked improvement from birth to maturity, but this is all Bain is willing to concede. He concluded that Ward's "term 'continuum' serves no good purpose but rather the contrary."/168/

Bain objected even more strongly to Ward's conception of an ideational continuum, asserting that it "overstates the flow and sinks the discreteness."/169/ Finally, he registered his disapproval of Ward's account of perception. Ward had argued that the fundamental process underlying perception was not an associational process at all, but a non-associational process called assimilation. Bain rejected this account and stated that the ordinary processes of perception are processes of classification. In addition, Bain retracted one of his earlier concessions, and maintained that the process of dissociation represents just one more application of the law of similarity./170/ Bain stated that

the supposed influence of dissociation is an unquestionable fact, . . . and is not always incompatible with the view given in the text of the workings of association. Indeed, to deny association, as I have represented it, is to cripple and maim the habitual operations of our intelligence./171/
In short, he claimed that Ward's view of the development of intellect distorted the true picture of the functioning of the mind that was accurately depicted only by associationist accounts such as his own.

Ward on Assimilation and Association

Ward published two further critiques of associationism in 1893 and 1894. In these articles he directly challenged the claim that the laws of association represented the most fundamental processes of the mind. Specifically, he argued that neither association by contiguity, nor association by similarity could account for certain fundamental perceptual processes. In making this claim he challenged the associationists' account of perception, memory and ideation.

In "Association and Assimilation (I)," (1893), Ward examined the associationist's account of the perceptual process of immediate recognition, a process he labelled assimilation. Principles of association cannot account for this process, he wrote, because association implies that two or more distinct presentations become unified. Assimilation, or immediate recognition, cannot be the outcome of association by contiguity since this perceptual process does not involve contiguous presentations.

Ward also rejected Bain's attempt to account for the process by the principle of similarity, but here the argument became a bit more complex. Ward described Bain's view in the following fashion: On the atomistic view of perception each distinct psychological event yields a distinct presentation. Therefore, the mind retains multitudes of
Similarly, but numerically distinct presentations. Ward granted that under such conditions, association by similarity might operate to produce the sense of familiarity that is part and parcel of immediate recognition. However, he denied that such conditions ever exist and therefore, he denied that association by similarity is a distinct type of association.

According to Ward, distinct psychological events do not create numerically distinct presentations. The repetition of an impression, does not call forth a new impression but instead is the occasion for further growth or change in the old impression. If this account is correct, we would never find a plurality of identical presentations in the mind, but rather presentations that develop greater clarity and individuality over time.

Ward's alternative account of the perceptual processes involved in immediate recognition emphasized the role played by the non-associational process of assimilation. The ease of immediate recognition and the sense of familiarity that accompany the process were depicted as the psychical concomitants of structural growth and development in sensory and motor presentations. This functional/developmental view of the origin of percepts differs significantly from the atomistic view proposed by Bain. In Ward's account, percepts are not the product of associations between separate elements, but the outcome of elaborated experience developed through time. Furthermore, on this account there is no need for the full-fledged percept to bear much resemblance to its rudimentary
Finally, Ward argued that the process of assimilation must be psychologically prior to any process of association, since memory images are formed through assimilation and no process of immediate recognition (involving retentiveness and reproduction) can take place without memory images. If this is so, Bain is wrong in identifying retentiveness and association by contiguity. Evidence for Ward's view comes from the fact that retentiveness is possible prior to the formation of the true memory images required for association. For instance, tastes and smells can be recognized as readily as colors or sounds but cannot be recalled, or independently restated, with the same facility. Ward asserted, there is then a reasonable probability in the supposition that "ideas" have to pass through a stage in which they can only modify fresh impressions before they attain to the independence implied in reproduction by association, before, that is, they are properly entitled to be called ideas.

Ward called for further investigation of the developmental transition between impressions and ideas, and pointed to several factors that have tended to forestall such investigation. One of the main culprits is longstanding confusions of terminology. Ward wrote that:

retentiveness, recognition, reminiscence, recollection are more or less lumped together as 'memory.' Ideas are described as 'faint impressions due to central excitation,' and all complexity, ascertained or inferred, is put down to 'association'.

Yet another culprit was the psychophysical hypothesis propounded by Bain—the hypothesis that the seat of ideas is the same as the seat of impressions. The second part of Ward's article, "Assimilation and Association (II)," (1894), was a searching examination of the evidence for and against this hypothesis. However, before this article appeared,
Bain had commented on Ward's new critique of the laws of association. A "Supplementary Note on the Expression of the Laws of Association" appeared in the fourth edition of *Senses and Intellect*. Bain asserted that while there might be room for improvement in the formulation of the laws of association, he failed to see that Ward's position "thus far" represents such an improvement.

In this note Bain, once again, failed to comment on some of the criticisms made by Ward and glossed over others. He did not address the question of whether distinct impressions create a corresponding number of distinct presentations, a condition Ward maintained was necessary for it to be possible for immediate recognition to take place on associationist principles. While Bain did concede that there was no such thing as absolute identity between past and present impressions he did not seem to regard this as a serious problem. He stated,

> Such differences must be reckoned with, when the occasion requires it; when the occasion does not require it, they need not be adduced while, although not adduced, they are not denied.

Finally, Bain expressed reservations about the "fitness of the word 'Assimilation'" while admitting that "there is a difficulty in finding a better." He suggested that concrete representative instances might remedy the problem, and slyly praised Ward's concrete illustration of the atomistic view in preference to the "abstract formulae" Ward employed to illustrate his own position.

Ward elaborated upon his critique of associationism in "Assimilation and Association (II)," (1894). Here the main thrust of his criticism focused on the copy theory of perception—the doctrine
that ideas are nothing but copies, traces or the residue of sensation. /187/ Ward critically examined one hypothesis designed to bolster this view—Bain's doctrine of an identity between the seat of impressions and the seat of ideas.

Ward presented various lines of evidence against this doctrine. First he cited clinical evidence that demonstrated that there is no one-to-one relationship between psychical and cortical affectations. For example, an individual who has lost his ability to recognize colors because of central damage, does not necessarily lose the ability to imagine colors. Likewise, an individual who has lost the ability to imagine colors because of brain damage does not necessarily lose the ability to recognize colors. /188/ Cases like these indicate that the impression and the idea do not share identical nervous tracts. Ward, therefore, rejected the doctrine of identity between impressions and ideas and posited four distinct and independent forms that presentations can take. These include:

(i) the sensory impression, (ii) the so-called 'revived impression' which is said to fuse with this in perception, i.e., 'the representative element' of perception, (iii) the true memory-image of mediate recognition and (iv) general images, the representative element in conception. /189/

Ward employed other sources of evidence to bolster his claim that there are both lower and higher forms of perceptual ability, and that the higher forms develop through assimilation, not association. Ward appealed to comparative evidence in order to show that the higher forms of perception depend upon the lower forms and upon spontaneous and selective attention. /190/ He cited physiological evidence to show that the neurological processes involved in assimilation differ from those
underlying association./191/ This evidence suggested that infants lack the ability to form the distinct impressions that are necessary for association to operate. Furthermore, it suggested that the acquisition of motor and sensory presentations is a gradual process, dependent on the organizing abilities of subcortical structures. Ward's central claim is that it is this process of assimilation, aided by subjective activity and interest, _not_ the simple repetition of impressions, that leads to the formation of ideas./192/

Finally, Ward claimed that the development of ideas that can operate effectively in memory and ideation—i.e., free ideas—is a later development; and based upon association by contiguity. On Ward's account, association by contiguity _could not_ begin to operate until the subcortical structures have assimilated sensations into presentations. This implies that _no_ associations can be formed between sensations or between a sensation and an idea./193/ On this account, Bain's view of memory as involving only retentiveness and association by contiguity is clearly impossible. Ward's own account of memory depicted its creative, as well as reproductive function. The element of memory are not copies of impressions, but are the elaborated products of assimilated experience. These products of experience, or "free ideas," have been revised through experience and remain open to revision through further experience./194/ Ward concluded that "ideation and true memory are distinctly higher functions, continuous with but superimposed upon the lower functions of perception and movement."/195/
This article represents the clearest account of the differences between the positions of Ward and Bain. It is unfortunate, but perhaps not surprising, that Bain failed to reply to the points raised by Ward there.

Another article published by Ward during this period, "Modern Psychology: A Reflexion," indicates that he was shifting his critical attention away from Bain, to some newer representatives of atomistic presentationism--Wundt and Munsterberg. While this article goes beyond criticism of Bain, I will briefly examine it as a good summary of his objections to the assumptions underlying the psychology of Bain and others.

Ward on "Modern Psychology"

In this article, Ward attacked the reductionism inherent in the positions of such modern psychologists as Wundt and Munsterberg. For these psychologists brain processes are the touchstone of modern psychology. As Ward wrote, any mental processes that cannot be correlated with brain processes are rejected as fictions or cast onto the scrapheaps of metaphysics./196/ But Ward insisted that the basic conceptions these psychologists operate with could not adequately describe psychical life. Sensation, retentiveness and association by contiguity are mistakenly deemed adequate for representing mind processes and the facts of feeling and conation are reduced to facts of sensation. Ward claimed that the resulting psychology severely distorts the nature of mind:

It is not so long since the world was shocked at Lange's mot about a psychology without a soul, but the "modern" psychology
is a psychology without even consciousness. "Content of consciousness" as much as you like, but consciousness itself, consciousness as activity, is not our affair; we leave that to metaphysics, say our "modern" teachers./197/

Ward claimed that this modern approach stemmed from Wundt, despite Wundt's assertion that he was shocked by some of the subsequent developments. Ward pointed out that "modern" psychologists tended to be contemptuous of Wundt's theory of apperception, while supporting the doctrines outlined in his physiological psychology./198/

Furthermore, while Wundt spoke of an immediate sensation of activity or spontaneity, he treated it as a purely hypothetical conception about which psychology can have nothing to say./199/ As a psychologist, Wundt chose to focus instead upon the definite changes and the phenomenal accompaniments of will and perception. In contrast, Ward argued that it is essential that psychology investigate psychical activity in its own right. Ward concluded that the main problems facing the presentationists, including Wundt, are the problems of the agent and the activity implied in thought and consciousness. Ward argued that the presentationists attempted to deal with these problems by reconceptualizing all the functions of the subject as properties of the contents of consciousness./200/ Thus the unity and continuity of our mental life is not attributed to the subject, but is regarded as a by-product of the operation of principles of association. Ward asserted, against the presentationists, that a fundamental dichotomy between subject and object underlies all conscious activity and that conscious activity is the activity of the subject./201/
Ward argued that the approach taken by the presentationists has certain methodological implications since it reduces the study of mind to a "mere looking on at physical brain processes."/202/ In contrast, Ward insisted that the distinctive characteristic of psychology is that it deals with the concrete experience of the individual's mind. This standpoint is distinctly different from that of the natural sciences, especially physics, which Ward felt the presentationists were attempting to emulate. He argued that the phenomena dealt with by physics have an entirely different character than those dealt with by psychology. In the former case, the phenomena can be treated as abstractions while in psychology this is never the case; we must always deal with the concrete experiences of the subject./203/

In the remainder of the article Ward examined Münsterberg's attempt to jettison the subject from the conceptual framework of psychology. In this attempt, psychical activity and feeling are analyzed as the outcome of sensation and subjective knowledge is evaluated as unreal and empty. Ward, of course, maintained that this attempt was a failure. Münsterberg's attempt to provide physiological accounts of feeling and attention was singled out for special criticism./204/ According to Ward, the failure of such accounts, highlights the fact that psychical activity and feeling are not the outcome of sensation but represent higher order functions of the organism.

Ward also denied that subjective knowledge is illusory. He claimed that this notion arose because presentationists had failed to recognize the unique character of subjective knowledge and had assessed it by the
same standards we would employ to assess knowledge of the objective material world. Subjective knowledge, he wrote, does not depend upon "appropriate sense particulars," but it is nonetheless a valid form of knowledge./205/

In this article Ward was clearly criticizing many of the assumptions which also underlay Bain's position. On the other hand, he was willing to admit that presentationists have made progress in stating important generalizations and in identifying "instructive correspondences" with underlying physical phenomena. He asserted:

The psychologist has therefore every motive to adopt presentationism, if it is adequate to the facts. Now I think it will be again agreed that presentationism is adequate to (say) nine-tenths of the facts, or better, perhaps, to nine-tenths of each fact . . . . The mistake of the "modern" psychologists is that they either snatch at a hasty simplification by mistaking the nine-tenths for the whole; or worse--like Münsterberg, try to bring what they can of the outstanding tenth under the common rubric, presentation, and to banish the rest from the region of the knowable altogether./206/

The issues raised in the debates between Bain and Ward go beyond mere differences between two individuals. Indeed they concern the very nature of a psychological science. We will examine the broader implications of this debate after looking at interchanges between Ward and Bradley.

**Summary: Ward versus Bain in the 1890's**

Such interchanges resulted in several shifts in the views of Alexander Bain as well as some shifts of emphasis in the work of James Ward. Despite these changes, clear differences in the positions held by each remain.
In the late 1880's Bain adopted a more sophisticated form of critical empiricism. While he retained his stance that all knowledge is based upon experience, he broadened his conception of experience by asserting that products of sense experience and products of intuition may serve as sources of our knowledge. At the same time, Bain employed the Kantian distinction between the source and validity of our knowledge in order to temper this concession. Although intuition might be a source of knowledge, he insisted that questions of validity could only be settled by appeals to sense experience. Although others had employed this criterion to demarcate between psychological and philosophical inquiry, Bain continued to assert that psychological investigations have bearing on philosophical matters. Bain went so far as to claim that certain philosophical questions—such as the nature of conscience and the problem of free will—could only be answered by psychological investigation.

Bain made other important shifts in his position. He adopted an instrumentalist view of the role of physiology in psychology, perhaps simply to forestall criticism of the specific physiological doctrines he had advocated in the past. Although he asserted that introspective analysis had a methodological priority and therefore, that physiology and psychology must be kept wide apart at the outset, he also hastened to add that subjective analysis had "probably now reached its culminating point", a conclusion Ward would have vehemently denied. Furthermore, Bain contended that physiology was invaluable in providing accounts of the emotions and the will. Ward, on the other hand, insisted upon the wholly subjective character of these phenomena.
Finally, Bain moved farther away from the *tabula rasa* view of mind, giving instinct a large role to play in intellectual development.

Ward's view shifted slightly, with greater emphasis being given to those points which distinguished his doctrine from the doctrines of the "presentationists." He continued to object to physiological reductionism, but was perfectly willing to marshall physiological evidence to counter doctrines espoused by Bain. This supports my contention that his opposition to physiologizing in psychology was not based upon ignorance or religious scruples, but stemmed from a belief that this approach distorted essential aspects of mind.

Bain and Ward continued to disagree on a number of basic principles. Ward continued to insist that the subject-object dichotomy is an ultimate fact that psychology can not ignore and therefore, that the subject is a primitive given. Bain, in contrast, claimed that the subject or self is a construct developed through experience. Ward insisted that the subject and attention must be central constructs in any adequate psychology. Bain acknowledged only that they play some role, as derived phenomena.

In the course of this controversy, disagreements as to the origins and nature of constituents of the mind were brought into sharper focus. Bain reiterated his claim that sense experience is discrete at the outset and that all our knowledge is built up from particulars. Ward continued to claim that knowledge developed from differentiations within, and elaborations upon, an originally unified sense experience.
Finally, there were concrete differences in their accounts of feeling, volition, perception and memory. While Ward's criticisms of Bain's views are multifaceted, the overriding point is that processes of association alone cannot suffice to provide an adequate account of mind.

James Ward versus F. H. Bradley

As we have seen, both F. H. Bradley and James Ward were highly critical of the prevailing Utilitarian-Association tradition during the 1870's and 1880's. Nevertheless, Bradley and Ward differed significantly in their views on psychology. While there were many points of agreement in their criticisms of associationism, their critiques had different foci. Bradley objected to the metaphysical assumptions underlying the empiricist doctrine, particularly as these were employed in providing an account of logic. However, Bradley conceded that metaphysically untenable positions might play a useful role in science, which only examines appearances. Bradley contended that psychology is merely a phenomenalistic science and that a modified associationism can provide an adequate account of mental phenomena.

Ward, on the other hand, was genuinely concerned about the impact of associationist assumptions on psychology, and he explicitly rejected a phenomenalist approach to that science. Ward claimed instead that the method of psychological science should be tailored to its subject matter. When we examine this subject matter, he argued, we see that the subject is a given and that attention is a fundamental psychical activity. Bradley denied both these central points.
Bradley on Attention, 1886

Bradley's opposition to the second point was made clear in his 1886 article, "Is There any Special Activity of Attention?"/211/ In this article Bradley defined active attention as that "state which implies dominance or chief tenancy of consciousness"/212/ and asserted that active attention is not primary either as being there from the first or as supervening but is a derivated product. Nor . . . is there any one special activity at all, but various activities, if they lead to one result, are called attending./213/

The question to be addressed therefore, is how sensations and ideas are intensified so as to lead them to dominate consciousness or, in Bradley's words, "what is the Machinery which effects the production?"/214/ Bradley briefly examined some answers to this question, including Bain's view that muscular acts are the basis of the intensification we see as attention. However, he rejected this view claiming it could not provide a complete account of attention, because (1) the postulated muscular movements are not always necessary and (2) they do not provide a sufficient account of the movements of attention. Bradley asserted that muscular elements cannot always be found and that even when they are present they cannot provide an account of how we are able to attend to one aspect of a phenomena rather than another. Bradley stated that while "ideal" eye movements may underlie visual attention, it is not clear how such movements can account for our ability to attend to color rather than form, or to one aspect of a single color such as the blue in a greenish-blue object. According to Bradley "the fact to be explained is my attending to A or B and not to C or D and unless there are special muscular elements a, b, c and d, the
fact is not explained."/215/

A similar point had been made by Ward in his criticisms of Bain's view of attention, but apart from this point there was little agreement between the accounts given by Bradley and by Ward. Bradley maintained that the intensification resulted through the mediation of interest, i.e., an interesting idea lends its power to a sensation through redintegration and blending, or "an idea of an idea" aids the process./216/ Bradley concluded that attention is nothing but the result of the operation of more general laws; i.e., that there is no activity of attention beyond the common processes of redintegration and blending.

Proponents of the opposite view—that attention was a special activity—frequently argued that the fundamental force we call "will" underlies our primordial feeling of activity. Bradley argued that this feeling of activity was not primordial, but arises in the course of experience. The feeling of activity involves "the idea of myself changing something opposed to me," and this feeling originates in the "feeling of expansion that follows upon the enlargement of self."/217/

Bradley also denied that the self or subject is a primitive given. For Bradley, the self is not present at the outset of experience, but is developed in the course of experience. The origins of the self lie in the grouping of certain sensations—particularly internal and bodily sensations—that have very close ties to pleasure and pain. Bradley maintained that this grouping "is perpetually growing larger and smaller as against other elements . . . and . . . the expansion gives in general
a feeling of pleasure, while contraction brings pain."/218/

After a considerable amount of experience we come to be aware of this particular grouping of sensations; that is, we come to be conscious of self. The "notion of activity of will comes later, when we get to know that certain changes ensure upon modes of our self." Bradley described this process in a characteristically obscure manner:

We are active when the not-self, consisting in external or internal sensation or perception or idea, changes in the presence of an idea and . . . a desire of that change within the self. This expansion of our area beginning from within gives a certain feeling, and it is interpreted as a putting forth of a something from out of the self into the non-self—the something being energy or force of will./219/

In reality, Bradley claimed, such labels as self, non-self, and will are all equally delusive. The expansion and contraction of the "group of self" and the resulting feelings simply represent "a happening of events" rather than something intrinsic to the self. The feeling which we interpret as a "feeling of activity" is not a putting forth of energy or force or will but is a feeling accompanying, or resulting from, the fact of activity./220/

Although Bradley felt his alternative account of the origins of the "feeling of activity" could be criticized, such critiques could have no impact upon his account of attention, since attention had been explained without recourse to a feeling of activity./221/ Bradley concluded, therefore, that there is no special activity underlying attention.

The differences between Bradley and Ward's position are readily apparent. Bradley maintained that neither the self, nor any psychical activity, was primordially given, while Ward maintained exactly the
opposite. Interestingly, they agreed on the issue of the relevance of physiology for psychology. Bradley argued that the question of a psychical activity could not be settled by any appeal to physiology because physiology was unable to provide an adequate description of the psychical facts involved./222/ As we will see, the disagreement between Bradley and Ward also involved a deeper disagreement about the nature of science in general and psychological science in particular.

Ward's Response, 1887

Ward commented upon Bradley's article in the third installment of his series on "Psychological Principles."/223/ It was also in this article that Ward elaborated his view of the methodology of psychology. He argued that developments in modern biology and modern physics pointed to a whole new approach to the problems of psychology which rendered the older approach (based on mathematics and classical physics) obsolete. The hypothesis of evolution in modern biology, for instance, made clear the importance of examining "the course and conditions of mental development."/224/ However, the procedure followed by the psychologist must differ from that of the biologist:

The psychologist who essays to treat mind evolutionally has to begin at the top of the chain and work downwards, he cannot, like the biologist, begin at the bottom and work upwards. The problem for him [the psychologist] is in large measure an inverse problem and beset with many of the characteristic difficulties of such a method. His one chance of anything like scientific exactness lies in securing first of all an accurate and complete analysis which shall tally, as far as the nature of the case admits, with what has been independently ascertained of the anatomy and physiology of the nervous system./225/
Developments in modern physics, specifically "the modern doctrine of energy with the theory of dimensions," suggest that precision or exactness in a science may result from conceptual analysis as well as, or instead of, quantitative analysis. According to Ward, modern physics recognizes the need to express physical quantities in terms of fundamental units or dimensions such as length, time and mass. In addition, "every equation that claims to have a physical meaning must involve only like dimensions of these units as far as it involves them at all."/226/

These doctrines suggest that psychologists might profit by distinguishing among the various mental "dimensions," and attaining precision in their use. Ward noted,

Psychologists seem to be aware of no confusion of standpoint when they talk indifferently of status of mind, contents of mind, acts of mind, treat the same fact now as a process, now as a product; and range on one level feelings which presuppose presentations and acts which presuppose feelings./227/

Ward claimed that such confusion stems from "an arbitrary change of systematic units" specifically prohibited by modern physics./228/ Ward pointed out, for example that Bain describes mind as involving three properties or functions, without acknowledging the difference between predicating properties or functions. Ward wrote that "while everything has properties, functions—unless metaphorically employed—pertain only to agents."/229/ Furthermore, he noted that "if Mind is to be viewed as having functions it must be viewed as an agent."/230/ Ward concluded that conceptual analysis, like that employed in modern physics, reveals the necessity of postulating a subject involved in all psychical activity. Furthermore, psychological processes such as "remembering,"
"perceiving," "inferring," "desiring," etc., imply activity on the part of the subject, and an object distinguishable from both the subject and its activity. Ward proposed that the common activity underlying all psychological processes was attention and suggested that "all the various faculties with which a man can be endowed are resolvable into powers of attention and various classes or relations or status of presentations."/231/

To summarize, Ward claimed that developments in modern science provide a justification for the kind of analysis he undertook in psychology, a form of analysis that had been criticized by both Bain and Bradley. We will also see that Ward defended this type of analysis as the only kind which could yield an adequate psychology. First, however, we must examine his critique of Bradley's claim that there was no special activity of attention.

Ward began by criticizing Bradley's analysis of the effects of attention, specifically his assertion that objects come to predominate in consciousness because of the pleasure or pain they afford./232/ Ward attacked this view, claiming that the intensity of a presentation cannot simply be reduced to the degree of pleasure or pain it affords. Ward pointed out that intensity does not always correlate with the pleasurable or painfulness of an idea. Furthermore, in involuntary attention, attention precedes the subjective state of pleasure or pain so the intensity of the presentation could not be determined by pleasure and pain. Finally, Ward noted that although feelings serve to prompt shifts in the distribution of voluntary attention, it is the act of
voluntary attention itself that determines the resultant intensity of
the presentation./233/

Bradley had claimed that the psychical activity we call attention
is a derived activity, an outcome of other processes of mind. Ward
replied that no such associationist account of attention could work,
because it must contain the assumptions that "pleasure and pain are a
species of idea" and that "the sequence of movement on feeling is like
the sequence of (say) thunder and lightning a merely physical
fact."/234/ The first assumption is false because pleasure and pain are
subjective states not presentations. As such, they cannot be associated
with other presentations./235/ Ward also denied that there was any
determinate relationship between feeling and movement, because the
conscious subject is capable of subjective selection beyond the control
of physical law./236/ Ward concluded that the psychodynamical laws of
association, fusion and blending could not provide an account of
subjective selection or interest, and that psychology must recognize
some kind of activity "beyond the common processes of redintegration and
blending."/237/

Having dispensed with Bradley's alternative account of the
mechanism of attention, Ward attacked his account of the origins of the
"feeling of activity." Bradley's view contrasted with Ward's in two
respects. First, he claimed that the feeling of activity is not
fundamental, but derived. Second, he claimed that the self (which is a
prerequisite of the "feeling of activity") is also not fundamental, but
derived.
Ward argued that Bradley's analysis applied only to our *idea* of the subject and our *conception* of activity./238/ He insisted that our *awareness* of self and activity are later acquisitions, but that they are built upon the reality of both as fundamental givens. Ward also accused Bradley of assuming a real subject, not merely a phenomenal subject, in his attempt to explain away the feeling of activity./239/ Finally, he claimed that Bradley did not succeed in his attempt to resolve activity into a mere interaction of presentations, and implied that any such attempt must fail./240/

Bradley commented briefly on Ward's criticisms in a note published in the next number of *Mind./241/ First of all, he denied that his earlier article was intended as an attack on Ward, and asserted that he had never previously read any of Ward's work./242/ He argued that Ward had misinterpreted his position. His true position, he wrote, was that sensation is intensified by a transfer of strength from an idea via blending, *not* that attention intensifies sensations through association./243/ At issue here is whether blending might be regarded as an additional associational process, or whether it is distinctly different. Bradley also maintained that interest did not consist solely in pleasure, although he admitted that, for the purposes of the article, he had focused simply on pleasure. Bradley insisted "that an idea, like every other psychical event, has a force which is not the same as its pleasantness" and that it is this force which accounts for the ability of ideas to draw the attention of the subject./244/ Despite the apparent shift, this view is still different from Ward's. Ward argued that interest is not at all a function of presentations, but rather a
function of the subject's activity upon the presentations.

The differences between the views of Bradley and Ward were more clearly laid out in two articles published in 1887. In "Association and Thought," Bradley clarified his position by recording his agreements and disagreements with the associationist school. He also clearly contrasted his position with that developed by Ward, by reviewing his own account of the origins of experience, self and the idea of activity./245/

Bradley on Association, 1887

Bradley's view of the proper approach for psychological science came remarkably close to that proposed by the associationists. He insisted that psychology "is concerned with nothing beyond presentation and laws, with nothing but the process of given events and the modes of their happening."/246/ He registered his agreement with the associationist school by stating:

I am convinced that thought proper is a product, and that, starting from what is presented and keeping wholly to that field and the laws of its movements, our science can trace thought's probable generation. And if at any point we fail, then that point must be marked as "at present unknown". Nothing can warrant our importation of a faculty or faculties, or a subject and its function, or an activity, or an energy, if we mean by these more than some law of phenomena, some way of happening among psychical events./247/

In short, as psychologists we must refrain from asserting more than can be stated in terms of phenomenal occurrences and their laws. In providing such guiding principles for psychology, Bradley was simply following his own dicta concerning the proper method for science. Bradley asserted that science dealt only with appearances, only with
phenomena, not with reality. Sciences can only trace relations among the phenomena and must refrain from all statements that go beyond phenomena. Where such phenomenal analysis fails, we must simply state that the facts are "at present unknown." In Bradley's words, we must "refuse to bring shame upon our honest nakedness by scraps of physiology and rags of metaphysics."/248/

This view of psychology differentiates Bradley's position from both Bain's and Ward's. Against Bain, Bradley maintained that physiology tells us nothing concerning psychical occurrences and therefore, has no place in empirical psychological science. Against Ward, Bradley asserted that it was non-scientific to postulate "metaphysical entities" such as a subject and its functions, or a fundamental psychical activity./249/

Despite basic agreement with the associationists' approach to empirical science, Bradley dissented from other aspects of their program. He asserted that the associationists had made a fundamental error--the error of asserting a dogmatic atomism--and that this error made it impossible for them to provide an adequate account of higher mental phenomena./250/ Bradley asserted that the origins of experience are not discrete, but that what is given is a continuous mass of presentations within which single presentation cannot be isolated./251/

Bradley's refutation of atomism necessitated fundamental changes in his account of the principles of association. The associative links forged through experience could not be mere conjunctions of particular presentations for, according to Bradley, such particulars do not exist.
Bradley depicted associative links as connections of content in experience—that is, as relations among universals rather than particulars./252/

Bradley's rejection of atomism also led him to deny that the principle of similarity is a fundamental law of association, and to insist that the principle of contiguity must be reformulated./253/ Association by contiguity connects content, not particular existences. Bradley's contextual version of contiguity stated that: "every mental element when present tends to reinstate those elements with which it has been presented."/254/ In other words, every mental element tends to reinstate the context within which it has previously occurred. Bradley suggested that this principle be known as the law of redintegration.

Bradley proposed another law of association called the law of blending or coalescence or fusion. This law asserted that "where different elements (or relations of elements) have any feature the same, they may unite, wholly or partially."/255/ The more completely they unite, the more their differences are destroyed, with a resulting transfer of strength to the remaining elements. Blending, as we have already mentioned, is the process by which an idea can intensify a sensation, a process essential for the operation of attention./256/ Bradley summarized his views on the operation of association in the following statements:

Each element tends . . . by means of fusion and redintegration to give itself a context through identity of content and in the result which is so made the element may not survive in a distinguishable form./257/
Association can be reduced to the struggle of each element towards an independent totality by means of sameness in content...this principle works by coalescence...and again, by reintegration./258/

In his discussion of the origins of experience, Bradley distinguished his view from that held by Ward, as well as from the view held by associationists. While maintaining that the origins of experience are not discrete, he denied that any relations are given at the outset of experience:

In the beginning there is nothing beyond what is presented, what is and is felt, or is rather felt simply. There is no memory or imagination or hope or fear or thought or will, and no perception of difference or likeness. There are in short no relations and no feelings, only feeling. It is all one blur with differences that work and that are felt, but are not discriminated./259/

As no relations are given at the outset of experience, the distinction between subject and object cannot be primordial. Experience does not commence with a subject experiencing a continuum of presentations. Bradley maintained, against Ward, that no aspect of self-feeling can exist at the outset of experience, and that it is both untrue and unscientific to assert that a subject functions in the early life of the mind./260/ Bradley also criticized the postulation of a fundamental psychical activity as unscientific. He wrote:

The main point, I think, is this: if attention is not an event or a law of events, has it a right to exist in empirical science? Is it not simply a revival of the doctrine of faculties?/261/

After voicing his objections to such views, Bradley outlined his own account of the origins of self and our idea of activity. At the outset of experience, he claimed there is nothing but presentation, which has two dimensions—sensation, and pleasure and pain.
Regularities appear in the blur of sensations and the important regularities are emphasized by pleasure and pain. Greater regularity leads to the formation of groups of presentations and within these groups various features are formed./262/

According to Bradley, one of these groups has a special character in that it is always present and is uniquely connected with pleasure and pain. It is this group of presentations that is the foundation of our conception of self. The bundle of feelings known as internal sensations are at the core of this group, while the outskirts contain the whole body-group of sensations. Changes in this body-group bring immediate pleasure or pain./263/ While the self has its origins in this body group, it is not confined to this group in its later growth. Bradley claimed that "the outlines of this [self] group are not fixed, and they never become fixed."/264/ The consciousness of subject and object, or self-awareness is not attained until a relation is perceived between the group immediately connected with feeling, and some features not connected in this fashion. In Bradley's own words, this perception is called forth by a "practical collision between the feeling and a non-feeling group."/265/ We bump up against reality as it were, and if the collision is alternately pleasurable and painful the "unity of feeling" is divided, leading to the idea of the unfeeling-object.

According to Bradley, the feeling of activity can arise only after the establishment of this group of self feelings. The idea of activity, he asserted is derived from

an alteration of A not taken as belonging to anything outside, but as a change of something beyond A which realizes something which in A was ideal./266/
In other words, we derive the idea of activity from changes in our self, that arise from our self rather than from non-feeling objects. Finally, Bradley denied that we have any evidence whatsoever for asserting that this idea of activity can be intuited as a fundamental characteristic of the mind. However, against Bain's position he asserted that the view that "motor' feelings of any kind should apply such a complex seems to me quite preposterous."/267/ Bradley concluded:

we have seen the machinery which works in all psychical processes; and we have hurriedly shown how from a basis of mere feeling this machinery develops the function of thought with its subject and object. And, did space permit, we could easily complete and verify our explanation by exhibiting volition and emotion, in their contrast to thought as other developments by the same machinery from one single foundation./268/

Ward's Response, 1887

Bradley's approach to psychology as a science was a position much closer to advocated by the associationists, than to that advocated by Ward. Ward pinpointed the source of his difference from Bradley in their differing conceptions of science./269/ Ward registered his opposition to the phenomenalist approach to science advocated by the associationists and Bradley, stating:

I have assumed that science deals with facts only by means of ideas. Brute facts will never make a science of themselves, and we cannot get ideas out of them till we have put ideas in./270/

Furthermore, he claimed:

It is quite one thing to keep science clear of ontological speculations; it is quite another to refuse to give adequate definitions of conceptions that have various implications within science itself. The first procedure is wise and sober; the second is slovenly and confusing./271/
Ward, as we have already seen, contended that particular sciences require particular "simple and ultimate conceptions" in order to do justice to the facts dealt with by that science. He stated: "those conceptions ... are ultimate for a particular science, ... which ... never require analysis within the science itself."/272/ Furthermore, he claimed that phenomenalism can never represent an adequate approach for psychology because the usual definition of "phenomenon" can not be applied to such things as presentations:

A psychical event is not a mere a as distinct from a chemical event which is a b, or an electrical which is a c; for b and c become psychical events so soon as we regard them as part of the experience of a particular M or N./273/

In Ward's view it is this relation to an experiencing Ego that creates a psychical "phenomenon." The approach taken by psychology must be determined by this unique "individualistic" standpoint, rather than by the type of phenomenon it investigates. Psychical facts can be distinguished from others by the characteristic of subjectivity, and it is this characteristic alone that renders them distinct./274/ Ward pointed out that Bradley and other psychologists have, at least tacitly, admitted that "presentation implies consciousness, and that consciousness implies a subject and activity."/275/ In support of this claim, he quoted Bradley's definition of psychical facts as "the facts immediately experienced within a single soul or organism."/276/ Ward summarized his view, stating that

I have never said that psychologists should be idealists as metaphysicians but that they do and must occupy an idealist standpoint in scientifically expounding the facts of mind, just as the physicist does and must occupy a realist standpoint in treating scientifically of the facts of matter. It is the
endeavour to transcend this dualism, not the frank recognition of it, that is really an intrusion of speculation into science./277/

Here Ward was not only challenging Bradley and the associationists, but also the conception of science that had prevailed since the seventeenth century. In denying that this conception of science was adequate for psychology, he raised, by implication, the question of its adequacy for other sciences./278/ Furthermore, Ward noted that Bradley had written:

A definition in psychology is for me a working definition. It is not expected to have more truth than is required for practice in its science; and if when pressed beyond it contradicts itself, that is quite immaterial./279/

Ward suggested that Bradley's notion of working definition ought to extend to such "simple and ultimate conceptions" as the subject and physical activity. Ward pointed out that the conscious subject "whether fact or fiction itself certainly works and enables psychology to know its own business."/280/ Furthermore, he wrote that

the assumption of a conscious subject as a working conception can be kept clear of such [metaphysical] questions just as the conceptions of substance or cause can be kept clear of analogous speculative difficulties./281/

On these grounds, Ward argued, Bradley should have no objections to the employment of the conception of the subject within psychology. A similar case might be made for the conception of psychical activity.

While admitting that all we know of psychical activity is an "intellectual construction," Ward insisted that "every proposition in psychology when completely explicated becomes nonsense if this 'inference' is rejected."/282/ He concluded that

if science is to precede philosophy and to furnish its material then empirical psychology, in order 'to deal with its facts' will have to recognize, and always does recognize that
A unanalyzable element I mean by attention or psychical activity./283/

Ward argued that this conception had other methodological advantages. The notion of an ultimate psychical activity that is the prototype and source of all forms of mental activity, he wrote, considerably simplifies our account of psychological facts and represents "a gain comparable to the simplification in physics obtained by the modern conception of energy."/284/ Ward denied that he was guilty of the errors of the faculty psychologists in employing such a conception, insisting that he was not attempting "to explain psychical facts by assuming a faculty beyond them."/285/

After defending his use of such "simple and ultimate conceptions," Ward pointed out problems with Bradley's account. He argued that Bradley's analysis of the origins of the self was simply an analysis of the origins of the presentational form of the self, which is necessary for self consciousness. Ward insisted that the fact that the self is not presented to us in the early stages of experience, does not mean that the self does not exist at this point./286/

Ward also denied that Bradley was successful in reducing psychical activity to a relation among presentations. He stated that

So far from activity being resolvable into a relation between presentations, it is not possible, I maintain, to explain the psychological relations of presentations except we start from psychical activity./287/

He admitted to being confused by Bradley's claim that the feeling of activity originates in the expansion of a group of presentations against its limit./288/ Ward stated:
I not only fail to understand Mr. Bradley's natural history of the idea of activity except by admitting elements which he most emphatically excludes but, giving up the attempt to understand it, I cannot even imagine the state of mind which his description applies—viz., that it is an "expansion" which in general "gives" pleasure and at the same time "gives" a feeling interpretable as energy, force or will./289/

Ward concluded that

much as Mr. Bradley strives to get all his facts into the one plane of presentation his language continually shows that he has to admit other facts outside that plane. But the consequences of this admission seem to me hidden from him by the ambiguities of the words "feeling" and "giving."/290/

Here Ward reiterated some of his earlier points: first, that feeling is never a presentation but always a subjective state that operates in a completely non-mechanical fashion; and second, that Bradley frequently fails to distinguish between what is "given" to the psychologist and what is "given" to the individual whose states of mind the psychologist is attempting to describe, and thereby commits the psychologist's fallacy./291/ Consistent and careful use of these terms and others, wrote Ward, would force Bradley to admit facts lying "outside the plane of presentation proper."/292/

In summing up, Ward stated:

Mr. Bradley has, it seems to me involved himself in inconsistency and confusion, because he has not merely forsworn all speculation but repudiated also the fundamental mental conceptions from which speculation starts: his procedure is much like bleeding yourself to death to guard against blood-poisoning ... He denies activity to mind as a whole, but allows its elements to struggle towards an independent totality. Out of this psychical machinery he tries to develop its own presuppositions, and smuggles into it what is really distinct from it and is its only motive-power. The plausibility and a certain parallel to the old dreams of perpetual motion./293/
Summary

These interchanges resulted in decidedly strained relations between Bradley and Ward. On an intellectual level, the debate served to sharpen Ward's critique, without having much discernible influence upon Bradley. Bradley's interest in psychology was always secondary to his interest in metaphysics. During this period he was composing Appearance and Reality, which was published in 1893. The debate enabled Ward to reformulate his criticism of presentationism and his criticism of a particular approach to science. Much of Ward's later work, both in psychology and philosophy, can be seen as the outgrowth of the critiques contained in these exchanges with Bradley. Ward developed his critique of associationism into a critique of a prevalent approach to psychological problems and a particular approach to science in general.

Implications

We have seen that the Utilitarian-Associationist program was challenged in a variety of ways by these debates. The position of psychology as the foundation of a variety of disciplines was undermined by those who argued that philosophical problems cannot be treated historically. Idealist critiques of empiricism and atomism raised the question of the character of psychological science. Finally, the insistence that the self-conscious active ego is an essential component of mental life, led to the formulation of new accounts of psychological phenomena.
The Kantian distinction between genetic and non-genetic accounts of knowledge undermined the Utilitarian-Associationist account of the relationship of psychology to epistemology, logic and ethics. As we have seen, many thinkers agreed that the psychological account of the origins of knowledge could shed no light upon such philosophical matters as the validity of knowledge. And they argued, therefore, that we must demarcate clearly between psychology and philosophical disciplines. The fact that both philosophers and philosophically-minded psychologists acknowledged this distinction suggests that psychology was not simply being evicted by philosophy. For various reasons, psychologists also saw advantages in breaking the ties linking it to philosophy. However, for those in the shadow of the Utilitarian-Associationist program this demarcation of psychology and philosophical disciplines presented a problem because psychology's direction had been provided by its relation to these other disciplines. Psychology had to legitimize itself as an independent discipline and to reformulate the goals of the enterprise.

Many attempted to legitimize the status of psychology as a discipline by allying it more closely with the empirical/experimental sciences. This was the direction taken by Alexander Bain and his associates, as seen in the early volumes of *Mind.* But a number of factors worked against this attempt. The Utilitarian-Associationists had, for obvious reasons, stressed the higher mental processes and the grounds of morality. Problems such as these were, however, far less amenable to experimental investigation than were, for example, the problems of sensation and perception. Furthermore the associationist accounts of these very phenomena were under attack during
this period. Finally institutional support was lacking. There was neither money nor manpower to carry out investigations that might legitimize the new discipline. /298/

Another approach to the legitimization of the discipline was to give greater emphasis to its ties to practice. As I have argued, the ties to education were particularly strong within the Utilitarian-Associationist tradition. If psychology could contribute little to philosophy, might it not be better to redirect one's efforts toward education and other applied disciplines. The strengthening of these ties did take place in the 1880's and 1890's, fostered by the growth of primary school education. /299/ In a very real sense, psychology survived in Britain due to its practical applications. Although certain aspects of the Utilitarian-Associationist tradition faltered as a result of these debates, other aspects thrived.

One aspect of the program which was called into question was the assumption that seventeenth century mechanical science could serve as the model for a science of psychology. /300/ Many philosophers and psychologists argued that this deterministic and reductionistic framework could not adequately capture mental experience. The rejection of this model of science in this period was not confined to psychologists. New developments in physics, such as the statistical mechanics of Maxwell, and the growth of evolutionary biology played important roles in transforming the conception of science. While evolutionary thought certainly had an important effect upon psychology, the critique we have been examining suggests that there were different,
and equally fundamental grounds for the rejection of the older model of
science. The idealist attack upon atomism, the critique of
"physiological" psychology, and Ward's insistence that psychology
examines subjective experience, all suggested that psychology required a
new conceptual framework.

The Idealists had argued that the empirical account of the origins
of knowledge could not work because knowledge is not based on
particulars. All true knowledge, they insisted, involves relations.
Knowledge develops within experience, rather than being constructed in
the building block fashion described by the associationists. Organic
models of development, they argued, are more appropriate than the
mechanical models preferred by the empiricists. James Ward employed
just such an organic model in his account of increasing differentiation
within mental continua.

The physiological reductionism advocated by Bain was consistent
with the seventeenth century model of science in a number of respects.
The correlation of mental processes with a physiological substratum
provided the appearance of objectivity, thus making psychology a surer
candidate for the status of a science. But Bain's early espousal of
such an approach was based more upon hope than upon scientific evidence.
Later in his career he admitted this, stating that in most cases
physiology must be regarded merely as a rhetorical aid./301/ In 1900,
Henry Maudsley, one of the foremost proponents of a physiological
psychology, admitted that the promise of the new science had not been,
and might never be, fulfilled./302/ There was general agreement that
the establishment of a physiological psychology was premature, if not always agreement on why this was the case. Many individuals argued that attempts at physiological reduction eliminated all the purposive aspects of mind and therefore, distorted mind./303/

Several thinkers argued that to accurately portray the facts of mind we must assume an active subject. Ward asserted that psychology has a unique perspective in that it provides an account of the conscious experience of the subject. He criticized accounts of mental life that posited functions and activities in the content of consciousness, rather than in the subject. Ward's position implied that the objectivism of seventeenth century science was inappropriate; psychology can and must investigate subjective experience. He stated that analytic psychology, or the conceptual analysis of subjective experience, "must precede any attempt to treat of the genesis of experience as a whole or to correlate psychology with physiology."

The shifts described above had broad implications for the methods and content of associationist psychology. The attack upon atomism, coupled with the postulation of an active subject, implied that processes of association could not be employed to provide a full account of mind. Additional processes, such as assimilation, had to be taken into account. Furthermore, those continuing to employ principles of association reformulated them in a more contextual fashion.

The idealist attack upon atomism also implied new views of the origin and function of thought and consciousness. They argued that thought does not simply involve associations among particular
sensations, but involves instead, relations of content. This view also implies that the function of consciousness is not simply to record impressions made by the senses, but to integrate the experience of the subject. Consequently, mental growth cannot be regarded as simply a process of accumulation. Instead it involves differentiation within a mass of sensory and perceptual data, a process implied in Ward's notion of mental continua. Since this process of differentiation was presumed to be guided by a selecting consciousness, the analysis of attention became a central topic for psychology. And because this selecting consciousness was the activity of a subject, the construct of self became important for psychology.

The stress upon the activity of the subject indicated another shift. Instead of regarding cognition or feeling as the fundamental characteristic of the mind, volition came to play this role. Bain had acknowledged the role played by activity in mental life. However, he tried to reduce this activity to muscular activity. As such, it was not fundamental, but derived from the coalescence of sensations and feelings. Individuals critical of the intellectualism of the associationists, argued that volition is an inherent power of the subject.

In keeping with the shift from a building block account of the mind to an organismic account, several psychological processes were freshly depicted. The problem of perception shifted from an analysis of the elements composing our ideas, to an analysis of the development of the perceptual process. The perceptual process was described as dependent
upon the context within which perception took place, in addition to the elements perceived. The problem of memory shifted from an analysis of how our ideas can be said to faithfully represent reality, to the analysis of a selective and constructive process. Ideas stored in the mind were not depicted as permanent copies of particular experiences, but were seen as modifiable in the course of further experience. This position undermined the epistemological pretences of the associationists, and provided a more accurate description of memory processes. Finally, Ward's insistence upon the subjective character of feeling provided a partial antidote to the intellectualization of feeling found among the associationists.

In this chapter I have been primarily describing the reaction against empiricism and associationism that took place in the 1880's and 1890's. At the very least, these debates made it difficult for any subsequent thinker to propose a thoroughgoing associationist account of the mind. But did these critiques have any long-term influence upon the British psychology? A discussion of this question is best postponed until we have examined two of the 'new' psychologies proposed during this period—the psychologies of James Ward and James Sully. But first we must look at institutional developments through the 1890's.
NOTES FOR CHAPTER 8


2. Bain adopted a more critical empiricism, but continued to argue that certain "philosophical" topics could be more adequately dealt with by empirical sciences such as psychology. He did imply that physiological investigations may have somewhat more limited relevance than he had earlier claimed.

3. Bain shifted further away from a tabula rasa account of mind by positing an instincual basis for certain intellectual processes. He also acknowledged the importance of the self construct, while still insisting that the self is a product of experience.


5. Ward insisted upon a non-organic account of these processes and in so doing revealed different aspects of each. Ward's view of these processes is echoed in the work of later psychologists such as F. C. Bartlett, Piaget and in recent work on schemas in perception and memory.


11. Ibid., p. 55.
12. Ibid., p. 57.

13. Ibid.

14. Ibid.

15. Ibid., p. 58.

16. Ibid., p. 61.

17. Ibid.

18. Ibid., note 1.

19. Ibid., p. 61. Here Ward is rejecting the "copy theory of perception" that underlay empiricist epistemology. See also Ibid., p. 81.

20. Ibid., p. 42.

21. Ibid.

22. Ibid. See also Ward, "Association and Assimilation. (II)," p. 522, where Ward admits that the mechanism by which attention operates is not precisely known.


24. Ibid., p. 53.

25. Ibid., p. 60.

26. Ibid.

27. Ibid.

28. Ibid.

29. Ibid., pp. 61-62.

30. Ibid., p. 77.

31. Ibid.

32. Ibid.

33. Ibid., pp. 77-78.

35. Ibid., p. 57-58.
36. Ibid., p. 45.
37. Ibid.


41. Bain, "Ward's 'Psychology'; Bain "Note on Psychological Principles (II)".

42. Bain, "Ward's 'Psychology'," p. 457.

43. Ibid., p. 477.


46. Ibid., p. 459.

47. Ibid., p. 460.

48. Ibid.

49. Ward, "Psychological Principles (II)," p. 466; Ward, "General Analysis of Mind," p. 371. Bain acknowledged that his instrumentalism "begs the question at issue" but nevertheless elected to beg the question. Bain, "Ward's 'Psychology'," p. 460. There is some evidence that he was much more troubled by this issue than these passages suggest. See n. 164 below.

50. Ibid., p. 461.

51. Ibid., p. 461-462.

52. Ibid., p. 465.

53. Ibid., pp. 465-67. Here Bain was denying that the constructs of "extensity" and "local signs" are of any value in an account for space perception and reasserting the central role of movement in generating our perception of space. For Ward's criticism of this point of view see "Psychology," pp. 53-54 (especially n. 1).
54. ibid., p. 469.
55. ibid.
56. ibid., p. 476. Note that Bain is translating Ward's psychological term into terms more compatible with the quasi-physiological analysis he preferred.
57. ibid., p. 477.
58. Bain registered his agreement with Bradley who denied that there was any special activity of attention. ibid., p. 476. I will be discussing Bradley's views below.
59. As we have seen in the quotation above, attention corrects the course of our mental processes; it regulates the course of thought when ordinary incentives fail. Here I would suggest that attention is playing a similar role in the mental life of the individual as social and legal sanctions play in ethical conduct.
60. ibid., p. 477.
61. As we have seen, at least in one instance Bain knowingly avoided addressing such differences. See n. 164 below.
63. ibid.
64. ibid., pp. 48-49.
65. ibid., p. 54. Ward refers specifically to Bain's account of the association between feelings and movements appropriate to those feelings. See Ward, "Psychological Principles (II)", p. 484.
66. For example, Ward argued that the feelings of innervation could be the basis of a special motor consciousness unless we are aware of them and aware that we produce them. Ward then cited passages from Bain such as the following: "an adhesive growth takes place, through which the feeling can afterwards command the movement." [underlining mine] (ibid., p. 52) "the distinctive aptitude of the mature will is to select at once the movements necessary to attain a pleasure." [Ward's underlining] (ibid.)

Bain, in commenting on the desirability of writing a note in reply to this article wrote:

"Would rather refrain; but he showed a provoking tendency to pick out a few vulnerable words from an argument (in reviewing what I said in Emotions); and it may be needful to check him." Bain to G. C. Robertson, 18 Jan [1889?], All letters from Bain to Robertson are in the George Croom Robertson Papers, University College Library, University College, London.
67. Ward, "Psychological Principles (III)," pp. 61-62. As we will see, this is the charge he levelled at Wundt and Münsterberg.

68. Ibid., p. 55-58.

69. Ibid., pp. 55-56.

70. Ibid., p. 56. See n. 56 above.

71. Ibid., p. 59. Of course apperception played no role in Bain's psychology. Bain did argue that innervation was related to efferent currents and chided Ward for neglecting the "physical side of mental facts." Bain, "Ward's 'Psychology'," pp. 464-65.


73. Ibid., pp. 59-60. Here Ward is challenging the feelings-of-innervation account that Bain felt necessary to account for the "most vital distinction within the sphere of mind," the antithesis between passive and active modes of consciousness. See Chapter 3, sections entitled "The Muscle Sense and Spontaneity," and "The Received View of Bain," (in the latter the discussion of Roger Smith's work is the relevant section.)

74. Ibid., p. 59.


76. Ibid. Bain cited his treatment of sensations, as both feeling and thought, in defense of this charge.

77. Ibid., p. 312. Bain was citing Ward, "Psychology," p. 40.

78. Ibid., p. 313.

79. Ibid.

80. Ibid.


82. Bain, "Ward's 'Psychology'," p. 462. It is not at all clear why Bain chose to sidestep issues and/or to nitpick. There are several indications that he recognised the impact of Ward's criticism upon his own position. It was rather late in his career (Bain was 68 when "Psychology" was published) and fundamental beliefs are far more resistant to revision in later years. Bain's beliefs were perhaps more resistant to revision than average. James Sully described Bain as "a violent partisan . . . over-zealous in pushing his disciples into University Chairs and positions of influence." Sully, My Life and Friends (London: Unwin, 1918) p. 245. Sully added, "yet in doing this he had at least one excuse, that he
represented a heterodox and unfashionable school of Philosophy which was visibly losing ground in England, and which he, no doubt felt bound to champion to the uttermost." Ibid.

Another factor which might have played a role was the deliberately non-partisan stance taken by Bain and his editor Croom Robertson vis-a-vis the contents of the journal Mind. They were concerned that the journal reach a wide audience and not give the appearance of being the mouthpiece of any one school. Bain may have been hesitant to force a head-on collision between competing perspectives. On the other hand, he simply may have been unwilling to recognize the merits of Ward's new views.


86. Ibid., p. 166.

87. Ibid.


90. Ibid., p. 167.

91. Ibid., pp. 173-74.

92. Ibid., p. 177.

93. Ibid.

94. Ibid., p. 180.

95. Ibid.

96. Ibid., p. 168.

97. Ibid., p. 169. We see here that Bain continued to maintain the view of psychology as propaedeutic to philosophy.
98. Ibid., p. 173.


100. For Sidgwick's critique see Chapter 7 above. Bain appended a special section to the article, "Answers to Objectors" which addressed the specific criticisms made by Sidgwick. Bain "Empiricist Position," pp. 391-392. Bain wrote to Robertson about his desire,

"to take up Sidgwick's challenge about Empiricism (not necessarily in open and avowed antagonism) by an attempt to divide and separate the various met. problems." Bain to G. C. Robertson, 13 Jan 1886.

Bain stated that he had delegated this task to an associate because,

"I have a still stronger wish to follow up your remarks on psych experimentation by a little discussion of the points most and least suitable for attack at this moment: also the difficulties that arise when we go from the Senses to the Intellectual Powers." Ibid.

In the end, it was Bain who wrote the article, although preliminary versions may have been prepared by his associate (probably W. L. Davidson).

101. This awareness had three sources. The critiques of Sidgwick and Ward had, no doubt, a great impact. Perhaps greater was the influence of George Croom Robertson, his protégé and the editor of Mind. Robertson, like many in his generation, spent time in Germany as a student, and absorbed enough German philosophy to adopt a critical stance vis-à-vis empiricism. See Robertson, "Psychology and Philosophy," Mind 8 (1883): 1-21. Unlike some of the earlier critics, Robertson insisted upon a demarcation between philosophy and psychology for the sake of psychology.

102. Bain, "Empiricist Position," pp. 373-74. Bain turned this into a criticism of critiques of empiricism by adding "if it is not correct to say Difference and Particularly come first, an Agreement and Universality next, the assumption is equally unfounded that Universality is preexistent, and Particularity derivative." (Ibid.)

103. Ibid., pp. 376, 384-85.

104. Ibid., p. 392.
105. Bain avoided this matter by mentioning the problem at the very end of the paper and stating, "This, however, is too much of an undertaking to enter upon at the conclusion of a long paper," (ibid.)


106. Bain, "Definition and Demarcation of the Subject-Sciences," *Mind* 13 (1888):527-48. Here Bain also defined the province of each of the subject sciences. First, philosophy was depicted as including epistemology and ontology or metaphysics. The province of psychology was "the properties and laws of the human mind treated scientifically" while Logic is "a body of formulae for testing and for discovering truth." Ibid., pp. 529, 531. The province of Ethics is the inquiry into the ideal "standard" governing conduct. Ibid., pp. 535-36. Citing Aristotle, Bain asserted that Logic and Ethics are inductive sciences deriving their maxims from the study of actual reasonings and actual human conduct. Ibid., pp. 529-30, 535.

107. Ibid., p. 527. Bain's utilitarian aim contrasts with that of others we have seen. Green, Bradley and Sidgwick insisted upon demarcating among branches of knowledge for the sake of logical consistency.

108. Ibid., p. 542. Here Bain is attacking the demarcation question from a different perspective, giving priority to the inductive sciences in all questions. Ethics was regarded as distinctively different from philosophy (epistemology and ontology) and so was not included in the proposed reduction of philosophical problems.

109. Ibid., pp. 544-45.

110. Ibid., pp. 537-44 passim.

111. Ibid., p. 535.

112. Ibid., p. 536.

113. In a note appended to the article, Bain quoted the following passage from Lotze:

"Philosophy is a mother wounded by the ingratitude of her children. Once she was all in all; Mathematics and Astronomy, Physics and Physiology, not less than Ethics and Politics, received their existence from her. But soon the daughters set up fine establishments of their own, each doing this earlier in proportion as it had made swifter progress under the maternal influence; conscious of what they had now accomplished by their own labour. They withdrew from the supervision of Philosophy, which was not able to go into the minutia of their new life, and became weary of the monotonous repetition of insufficient counsels." Ibid., p. 548.
Although Lotze had not mentioned either logic or psychology, Bain was clearly implying that these disciplines were similar to mathematics, astronomy, physics etc. Bain wrote:

"the tendency to extrude 'Philosophy' from the exposition of the mental powers is apparent even among ourselves; and we are gradually educating ourselves to the inevitable restriction of the domain [of philosophy] as above expounded." Ibid.

It is clear from Bain's comments and the comments of other writers we have examined that philosophy and psychology were ready to be divorced. There is less agreement as to who was kicking whom out.

114. In the 2d edition Bain employed George Croom Robertson, recently back from his German studies, to revise certain physiological portions of the text. See "Memoir," in Philosophical Remains of George Croom Robertson. A. Bain and T. Whittacker, eds. (London: Williams and Norgate, 1894), p. xi. W. Leslie Mackenzie, a medical officer, undertook the revisions for the fourth edition. Senses and intellect, 4th ed., p. vii. Mackenzie was also the author of "Recent Discussion on the Muscle Sense," Mind 12 (1887):429-33. This article defended the feelings-of-innervation account—the account preferred by Bain—against the alternative sensory account at a time when the evidence favored the latter view.

115. Bain wrote to Robertson:

"What I mean to do with my next spurt of working strength is to close the rewritten chapter of the Nervous system - carefully abstracted by Mackenzie - by a thorough handling of the uses and abuses [added later] of the physical side." Bain to George Croom Robertson, 17 April 1889.


117. Ibid., pp. 20-21. Bain argued that the formulation of the laws of association (i.e., "the laws of order of recurrence of thought") could draw not assistance from physiology but that the operation of such laws was qualified by physiological conditions. Ibid., p. 20. Not everyone would have agreed that the subjective examination of these laws of sequence had reached its "culminating point." That the account of intellect represented the "culminating point" of subjective study.

118. Bain, Senses and intellect, p. 77. See Chapter 3, n. 113 above.


120. Ibid.

121. Ibid., p. 8.
122. Ibid.

123. Ibid. pp. 4, 19. Bain apparently did not see that these doctrines had implications for the higher functions of mind. Of course there may be considerable variation in just which functions are regarded as "lower" and which "higher." I would agree with Ward that memory is clearly a higher function of mind.

124. Ibid., p. 7.

125. Ibid.

126. Ibid., pp. 18-19.


130. Ibid., p. 19.

131. Ibid., p. 20.

132. This address was published in Mind as "The Respective Spheres and Mutual Helps of Introspection and Psychophysical Experiment in Psychology."

133. Ibid., p. 42.

134. Ibid., p. 44. Here again we can see Bain arguing that the empirical science of psychology can illuminate philosophical questions.

135. Ibid., p. 45.

136. Ibid., p. 48.

137. Ibid.

138. Ibid.

139. Ibid., p. 50.

140. Ibid., p. 53.

141. While it may seem strange that Bain should put forth such views at an International Congress of Experimental Psychology, we must remember that experimental psychology could claim no hegemony during this period. Henry Sidgwick was elected president of the Society for Psychical Research. See Arthur Sidgwick and E. M. S. Sidgwick, Henry Sidgwick: A Memoir (London: Macmillan & Co., 1906), pp. 501, 515-16. Sidgwick wrote to a friend in 1892:
"Ethics and Psychology (including Psychical Research) at present claim my whole attention. I have to preside at a Congress of Experimental Psychologists in August and am at present disgracefully ignorant of what has been done on the subject while I have been writing politics" Ibid., p. 513.

The Congress was divided into two sections: one for papers dealing with neurology and psychophysics; one for papers dealing with hypnotism. Bain's paper was presented first "as a fitting introduction to the whole series of discussions which were to follow". Since it was an introduction Sidgwick said he did not "propose to make it the subject of a special debate." International Congress of Experimental Psychology. Second Session, London 1892 (London: Williams and Norgate, 1892.) pp. iv, 9. As such, we have no way of directly assessing the reaction to Bain's address.

143. Ibid., pp. 360, 353.
144. Ibid., p. 357. Bain wrote,

"All the permanent products stored up in the mental organisation have found their way there through a period of consciousness; they serve their function in the mental economy mainly during a return to full consciousness." Ibid., p. 353.

145. Ibid., p. 355. For James and John Stuart Mill's views see above Chapter 3, section entitled "John Stuart Mill's Psychology."

146. Ibid., pp. 356-57. Here Bain registered his opposition to the doctrines of animal automatism proposed by Huxley and others.

147. Ibid., p. 359.
148. Ibid., p. 360.
149. Ibid.
150. Ibid.
151. Ibid., p. 361.

152. The further implication is that to employ the terms "self" and "consciousness" in any other manner than suggested here is to involve oneself in a hopeless enterprise.

153. Bain, Senses and Intellect, 4th ed., pp. 79-80. See also "Physiological Expression," pp. 11-12 from which he quotes in this edition of Senses and Intellect.


157. In short, Bain was advocating a Lamarckian position here, a position he adopted, with some qualifications, from Herbert Spencer. See *Emotions and Will*, pp. 45-53.


159. Ibid., pp. 651-54.


Bain claimed that attention to presentations was neither necessary nor sufficient to yield feeling. He pointed out that Attention to a large number of our sensations yields only intellectual imagery not pleasure or pain. While he admitted that Ward made allowance for these cases he wrote: "But a position so very open to exceptions ought to be more guarded...as a commanding generality of all mind." Ibid., p. 653.

Furthermore, he wrote, many pleasures and pains arise without and antecedent presentation to the subject; that is, the effect is conscious but the "productive cause escapes our consciousness, and never reaches the subject." Ibid.

162. Bain wrote:

"Everything is more or less vague, until we settle precisely what is included in the subject. If it is the permanent aggregate of mental growths, in all the three spheres, its capacities of responding to presentation and stimulation are, without doubt, very numerous. Nevertheless, the production of feeling by awakening echoes of the past may be expressed better, without the assumption we are now discussing." (Ibid., p. 654.)

163. Ward, "Psychology," p. 44.

164. While Bain was addressing the more fundamental issue—the postulation of a subject—he was not addressing it in a direct manner. Nevertheless, he did appear to be aware that the implications of the postulation of a subject were quite devastating to his position. During
the period of revisions to *Senses and Intellect* he wrote to Robertson, "The critique of Ward's Ego, darkens instead of clearing the Subject. There remains at last—the question with the Germans as to the relative priority of thought and feeling. Whether this is worth the powder and shot at this moment, I hardly know. It might appear in the new edit. as covering Hamilton and the more thoroughgoing German position: a position so extreme and improbable, that it could be left to die out as a mere paradox." (Bain to G. C. Robertson, 17 April 1889.)

This letter indicates that Bain was aware of the real issues and suggests that he might have chosen to skirt them in hopes that they would go away.

165. In *Senses and Intellect*, Bain provided accounts of the experiential origins of the abstractions Number, Space and Time. Bain, *Senses and Intellect*, 3rd ed., pp. 689-92. In the fourth edition, Bain added the abstraction "Self-The Ego-Personality" to these. Bain, *Senses and Intellect*, 4th ed., pp. 691-95. Here Bain gave Sully's account of the growth of the self. Bain did concede that the distinction of Self and Not-Self may "be an acquirement much beyond the educational resources of the individual" but stated that,

"this observation does not interfere with our attempts to render an [experiential] account of the process; it only shows that there is, in all probability, something entirely inscrutable in the absolutely primitive state." Ibid., p. 692.

Once again Bain was appealing to inherited experience to help himself out of a perceived difficulty.


167. This note first appeared in the second edition of *Senses and Intellect* (1864). For Martineau's criticism see Chapter 7, section entitled "James Martineau," above. In the fourth edition Bain asserted that before processes of association can operate, compound sensations must be separated into their constituent elements. Perception is therefore a process of classification that yields separate impressions. Bain said that association by similarity accounts for some, but not all, of this process of dissociation. *Senses and Intellect*, 3rd ed., pp. 682-85.

The revisions to this note reveal that his concessions to a non-atomistic and non-associationistic conception of mind were much more limited than reading of the note alone would suggest. Ibid., pp. 676-80.

169. Ibid.

170. Ibid., pp. 679-80.

171. Ibid., p. 679.


174. Ibid., p. 351.

175. Ibid., pp. 350-53. Ward quotes several passages from Bain that suggest this view but criticizes him for calling this a process of association because association must "begin and end with two individuals." Ibid., p. 350.

176. Ibid., p. 355.

177. Ibid., pp. 355, 357.

178. Ibid., p. 358.

179. Ward, "Assimilation and Association (II)," p. 528.


181. Ibid.

182. Bain, Senses and Intellect, 4th ed., pp. 702-3. The fact that Bain chose to comment upon a recent journal article in his widely used textbook indicates that he saw the seriousness of Ward's critique. The fact that he adopted a 'wait and see' attitude indicates even more.

183. Ibid., p. 702. Of course such an admission contrasts with his earlier contention that the subjective study of mind "has probably even now reached its culminating point," Bain, "Physiological Expression," pp. 20-21.

184. Yet this was the essential point upon which both Bradley and Ward based their criticisms of association by similarity.


186. Ibid., pp. 702-3.

187. Ward had earlier written that "the tendency to treat presentations as if they were copies of things—the objective bias, as we may call it—is the one grand obstacle to psychological observation." Ward, "Psychology," p. 81.
Bain clearly held this view. See "Physiological Expression," p. 20. In 1893, Ward wrote that this copy theory involved "the confusion of the psychical with the physical." Ward, "Assimilation and Association (I)," pp. 352-53 (n. 1).

188. Ward, "Assimilation and Association (II)," pp. 511-12. The psychological distinction Ward was pointing to here is between the recall and recognition of ideas.

189. Ibid., p. 512.

190. Ibid., pp. 520-22.

191. Ward cited Meynert's claim that the growth of projection fibres precedes the development of association fibres in the cortex. Ibid., pp. 523-25.

192. Ibid., pp. 524, 531-32.

193. Ibid., pp. 528.

194. Ibid., p. 530-531.

195. Ibid., p. 532.


197. Ibid., p. 55.

198. Ibid., pp. 55-56.

199. Ibid., p. 56. Münsterberg was thus following Wundt's lead in asserting that the science of mind must dispense with will.

200. Ibid., p. 70.

201. Ibid., pp. 71-75. There is a problem concerning how we come to know this activity: i.e. how we advance in 'thought-knowledge' about the self. See Ibid., pp. 68-70.


203. Ibid., pp. 72-73.

204. Ibid., pp. 75-79.

205. Ibid., pp. 69-70. Ward stated, "[subjective knowledge] advances by the discernment of new relations, not by the acquisition of new sensations." Ibid., p. 70.
206. Ibid., pp. 80-81.


209. Bain was aware of criticisms of the feelings-of-innervation account in particular and his attempted physiological reductionism in general. See Bain's discussion of criticisms of "physiological psychology" in "Physiological Expression," pp. 1-10.

210. Ibid., p. 21. Furthermore, Bain later admitted that there was room for improvement in the formulation of the laws of association. Bain, Senses and Intellect, 4th ed. p. 702. This admission was simply the preface to his claim that Ward's formulation was not, as it now stood, an improvement. Ibid., p. 703.

211. Bradley, "Is there any Special Activity of Attention?," Mind, 11 (1886):305-23. Bradley's critique was not directed at Ward, but simply at a particular view of attention. He may have found this view in the works of Carpenter who he was reading during the late 1870's. See I, B, 18 in the Bradley Papers, Merton College Library, Oxford University.


214. Ibid., p. 306.

215. Ibid., p. 309.

216. Ibid., p. 310. See below for Bradley's description of reintegration and blending. While Bradley denied that the subject had any power to intensify ideas, he found it necessary to reformulate the principles of association to account for the intensification that does occur.

217. Ibid., p. 319.

218. Ibid., pp. 319-20.

219. Ibid., p. 320.

220. Ibid.

221. Ibid., p. 318.
222. Ibid., pp. 321-22.
224. Ibid., p. 46.
225. Ibid., p. 47.
226. Ibid.
227. Ibid., p. 48.
228. Ibid.
229. Ibid.
230. Ibid., p. 49.
231. Ibid., p. 58.
232. Ibid., pp. 62-63. Ward wrote of Bradley's view: "It is, in fact, very largely but an able restatement of an able note by J. S. Mill." Ibid., p. 62.
233. Ibid., pp. 63-64.
234. Ibid., p. 65.
235. Ibid. As we have already seen Ward employed this argument against Bain's position.
236. Ibid. This argument was used to refute Bain's principle of subjective selection.
237. Ibid. Ward is here quoting Bradley in "Activity of Attention?," p. 316.
239. Ibid., p. 67.
240. Ibid., p. 65.
242. Ibid.
243. Ibid.
244. Ibid.

246. Ibid., p. 357.

247. Ibid., p. 355.

248. Ibid.

249. Ibid. Of course, Ward had denied that the postulation of a subject carried any metaphysical implications with it. In Bradley's terminology, Ward was to argue that it was a working hypothesis necessary to the representation of the facts.

250. Ibid., p. 356. Bradley also pointed out that the empiricist's atomism violated their self-professed rules against metaphysics in science.

251. Ibid., p. 357. While this sounds very similar to Ward's account there are important differences. Bradley denied that any relations were given at the outset. Ibid., p. 363. This means, against Ward, that the relation of subject and object is not a primordial given.

252. Ibid., p. 358. Here Bradley reiterated his point that "association marries only universals." Ibid.

253. Ibid.

254. Ibid.

255. Ibid., p. 359.

256. Blending thus is a principle similar to Ward's assimilation but Bradley attributed more to blending than Ward did to assimilation. Like Ward's "attention," blending takes over the role of the principle of similarity in accounting for the creative imagination.

257. Ibid., p. 360.

258. Ibid., p. 361.

259. Ibid., p. 363.


261. Ibid., p. 366. Here Bradley was criticizing the doctrines of Sully and Wundt as well as Ward.

262. Ibid., pp. 367-68.

263. Ibid., p. 368.
264. Ibid., p. 370.
265. Ibid., p. 371.
266. Ibid., p. 371. This description of the origins of the idea of activity is rather obtuse, as Ward was to point out.
267. Ibid., p. 372.
268. Ibid., p. 376.
270. Ibid., p. 565.
271. Ibid.
272. Ibid.
273. Ibid., p. 566.
274. Ibid.
275. Ibid.
276. Ibid. Ward was distorting Bradley's meaning in using the passage to make his point. This definition appeared in Bradley, "Association and Thought," p. 354. The full definition read,

"the facts immediately experienced within a single organism or soul, and those facts regarded merely as events which happen, make the object of psychology." [underlining mine] Ibid.

Bradley also appended two long notes to this quotation: the first denied that "a single organism or soul" was equivalent to subject and the second explained that such a definition was merely a working definition formulated to guide practice in psychology. Ibid., pp. 354-55.

"Ward tailored the method of psychological science to its traditional subject matter and thus abandoned determinism, objectivity and any form of the primary/secondary distinction" Ibid., p. 106.

Daston is, however, incorrect in claiming that Ward was a dualist.
281. Ibid.
282. Ibid., p. 570.
283. Ibid.
284. Ibid., p. 571.
285. Ibid.
286. Ibid., pp. 568-69.
287. Ibid., p. 575.
288. Ibid., p. 573.
289. Ibid.
290. Ibid., p. 574.
291. Ibid.
292. Ibid.
293. Ibid., p. 575.

294. For Ward's account of their relations See Ward to A. E. Taylor, 18 January 1925 in Bradley Papers, Merton College Library, Oxford University.


296. See Introduction to Part II, n. 29 above.

297. Even Bain admitted this in "Respective Spheres of Introspection and Psychophysics," p. 45. Andrew Seth wrote in "The 'New' Psychology and Automatism":

"the physiological method of study ... alone furnishes the basis for introducing experiment into mental science; ... though it can only lay siege, as it were, to the outworks of the mental citadel, to the phenomena of sense-perception and movement and a few of the simpler aspects of the mental processes." (in Man's Place in the Cosmos and Other Essays [New York: Charles Scribner's Sons, 1897], p. 70.)
298. This was certainly an important factor but not the sole factor working against the establishment of an experimental psychology in Britain. In this dissertation I have argued that psychology’s tasks were laid out by the Utilitarian-Associationist thinkers who had defined it as a propaedeutic science. The attempt to carry out these tasks within a “scientific” framework exposed problems inherent in the enterprise; problems which required conceptual solutions, not experimental ones.

299. Once again, the relative weight of intellectual and institutional factors in these developments is not clear. The early Utilitarian-Associationist thinkers viewed education as a tool of social reform. This function was downplayed in the writing of later thinkers (Bain, Ward and Sully). These individuals were working during a period when much necessary reform had already been achieved, although the anticipated millennium had not arrived.

To some degree the educational work of these individuals involved simply availing themselves of the opportunities created by educational reform: a new population of teachers-in-training required instructors and texts. However, these individuals would not have had this opportunity if psychology had not been as closely linked to education by the earlier thinkers.

300. See Daston, "Theory of Will versus the Science of Mind."


303. See Ward, "Modern Psychology: A Reflexion," and Seth, "The 'New' Psychology and Automatism." These articles are remarkably similar although there is no evidence of influence between these thinkers. However, each was influenced by Hermann Lotze.
SUMMARY FOR PART III:

INTELLECTUAL DEBATES

In Part III I have described the reaction against scientific naturalism, empiricism and associationism that took place in the final third of the century. In addition to tracing important intellectual developments, I have been concerned with demonstrating that the reaction represented more than a rearguard religious protest against science or an invasion of foreign intellectual influences. These reactions involved the recognition of serious problems in the dominant traditions of thought in nineteenth century Britain.

The first reaction developed when German scientific naturalism became allied with evolutionary thought through the efforts of John Tyndall and T. H. Huxley. Their form of naturalism, and the conscious automaton thesis associated with it exposed contradictions between the epistemological and moral aspects of the Utilitarian-Associationist program. T. H. Green's question: "Can There be a Natural Science of Man?" suggested that there might be problems with employing a deterministic and mechanistic account of man as the basis for social reform and individual development.

Huxley's automaton thesis led many to believe that a thoroughgoing critique of the assumptions of scientific naturalism was the only way to salvage morality. German idealism provided the tools for this critique, but the problems were home-bred. Idealist "borrowings" led to new views
of the role and limits of scientific explanation. The provisional character of scientific constructs was emphasized and other realms of discourse were accorded validity.

The emphasis upon the constructive character of intellectual activity (scientific and otherwise) coupled with a stress upon the relational character of knowledge led to an attack on the central assumption of the empiricists—that our knowledge is built up from sense particulars. The critique of empiricism impacted upon psychology when associationism came under fire. James Ward's critique of associationism and his claim that psychological accounts must start from the fact of an active striving individual, threatened the very foundations of the Utilitarian-Associationist program.

In Part IV, I will assess the impact of these debates upon later developments in psychology.
INTRODUCTION TO PART IV

THE EMERGENCE OF A NEW PSYCHOLOGY

Before examining the work of James Sully and James Ward as representing the "theoretical state-of-the-art" during the 1890's, I will survey institutional developments of the period. During the 1870's and 1880's there were calls for the professionalization of psychology and philosophy. This drive toward professionalism led to the proliferation and increasing specialization of societies and journals. Changes in university curricula in turn reflected these new views of philosophy and psychology. In addition, the burgeoning field of elementary education provided openings for individuals trained in psychology.

Throughout the eighties individuals associated with the University of London took the lead in many of these developments. Largely through Bain's efforts the University of London had developed an extensive curriculum in Mental and Moral Science. Since 1860 it had been possible for students to obtain M.A. and D.Sc. degrees at the University of London, degrees requiring substantial work in psychology./1/ Bain's textbooks were still widely used during this period and both Bain and Sully prepared psychology textbooks for teachers-in-training. Mind, underwritten by Bain and edited by his protégé, George Croom Robertson, was the foremost English-language journal for philosophy and psychology throughout most of the eighties./2/
Despite the apparent hegemony of the London group during the seventies and eighties, individuals associated with Cambridge were becoming increasingly influential. In the last two chapters I presented Ward's critique of Bain's view of the mind. At the same time that Ward's new depiction of the active mind was eclipsing Bain's view, Cambridgians began to overshadow Londoners with regard to institutional support for psychology. As early as 1882 Ward proposed a new mental and moral science curriculum for the University of London. This proposal drew opposition from Alexander Bain but did lead to some changes.\[^{3}\] In the nineties and the first few years of the new century Cambridgians made further advances. Cambridge men established an ongoing laboratory in psychology, took over the editorship of Mind and established the British Psychological Society and the British Journal of Psychology. The nineties were a period of transition institutionally with the balance of power shifting away from the London (Utilitarian-Associationist school) toward the Cambridge school.

Journals

All of the major English journals I have described—Journal of Mental Science, Brain and Mind—continued publication throughout the nineties. Brain became designated the official organ of the Neurological Society in 1886. The Journal of Mental Science was already affiliated with the Medico-Psychological Association.

Under the editorship of D. Hake Tuke, the Journal of Mental Science devoted some space to psychological matters but avoided discussion of psychological theory.\[^{4}\] An exception to this general
pattern was the publication of Henry Maudsley's article on the "New Psychology" in 1900. In that article Maudsley, formerly the foremost proponent of an exclusively physiological psychology, argued for the integration of introspective methods and the newer methods. /5/

Brain, edited by Hughlings Jackson, was largely devoted to neurological papers. However, Jackson believed that neurologists could profit from a knowledge of psychology, and he continued his practice of reviewing new works on psychology. In addition, the Neurological Society provided a forum for discussion of issues of mutual interest for neurologists and psychologists. In this context, Sully addressed the issue of the neurological processes underlying attention and Bastian continued his examination of volitional processes. These discussions were later published in Brain. /6/ Nevertheless, it cannot be said that such works represented a forging of an alliance between the two disciplines. Brain continued to be devoted to physiological matters regardless of their psychological implications, while Mind's psychological discussions were conducted, for the most part, detached from physiology.

The most significant development that took place in this period was the end of the Bain-Robertson collaboration on Mind. In 1891, Robertson resigned as editor due to ill-health and Bain sought someone willing to take over financial responsibility for the journal. /7/ Henry Sidgwick accepted the responsibility and Mind passed into the hands of the Cambridge group. George F. Stout was appointed editor with Venn, Ward, Wallace and Sidgwick assisting. There were rumors that the Cambridge
group intended to reverse the order of "psychology" and "philosophy" in the subtitle of *Mind*, but this change was never carried out.\(/8/\) This proposal, whether actual or not, did represent the shifts in the content of *Mind* that took place through the nineties. But before describing *Mind* under Stout, we should look at Robertson's assessment of how successful the journal had been in meeting the goals set by him fifteen years earlier.

Robertson commented on the past fifteen years in a Valedictory which appeared in his final issue in 1891. He noted with pride that *Mind* had fulfilled its central promise of being open to all writers, regardless of philosophical affiliation. On the other hand, he wrote, it had not been very successful in fostering professionalism in philosophy. He expressed the hope that the new proprietors of the journal would have more success in this endeavor.\(/9/\)

Robertson also noted with regret that the journal had not been successful in stimulating experimental work in "mental science." Although there had been an increase in the amount of experimental work published in *Mind* since 1883, he pointed out that most of this work came from American, not British psychologists/10/ The fact that Cambridge had recently awarded a grant for the establishment of a psychological laboratory seemed to him a hopeful sign.\(/11/\) And he expressed his wish that *Mind* would do much to encourage this line of scientific inquiry among the British.
G. F. Stout took over as editor at the beginning of 1892. In his "Prefatory Remarks" he noted that the new proprietorship signified no breach in continuity with the old goals of *Mind*./12/ Stout reasserted most of Robertson's values, stating that the journal would seek to publish a high standard of work in philosophy and psychology (professionalism) without favoring any special school (impartiality). Furthermore, he expressed the hope that the journal would be able to introduce a larger number of reports on current work by specialists than had appeared in the past./13/ In short, Stout adopted a substantial portion of the program set earlier by Robertson. But how successful was he in fulfilling this program? A review of *Mind* during the nineties suggests that he was just about as successful and/or unsuccessful as Robertson had been./14/

*Mind* in the nineties was characterized by the same catholicity as the earlier volumes. Bradley, as the British representative of absolute idealism, appeared frequently and engaged in debates with those having different points of view such as William James and F. C. S. Schiller./15/ G. E. Moore and Bertrand Russell—as representatives of newer viewpoints in philosophy—had articles in *Mind* during the nineties and in the early years of the new century./16/

In other respects, the journal served to impartially inform the British educated public of current work in philosophy and psychology. Stout restored the practice of reviewing foreign philosophical and psychological periodicals and included abstracts of important articles. These sections of *Mind* reveal a proliferation of philosophical and
psychological literature abroad, a trend not matched in Britain. For example, the first Psychological Index (1894) contained 1,312 titles.\textsuperscript{17} Competitors for psychological literature included the American Journal of Psychology and the Psychological Review in the United States; the Revue Philosophique in France and Philosophische Studien; Zeitschrift für Psychologie, Philosophische Monatshefte and Zeitschrift für Psychologie und Physiologie des Sinnesorgane in Germany among others.

During the nineties Mind did publish articles by Bain, Ward, McDougall, Titchener and others, but they tended to be theoretical articles or informational pieces rather than experimental reports.\textsuperscript{18} In this respect, Stout's Mind differed little from Robertson's. Both hoped to increase the number of experimental or specialist reports, but neither was remarkably successful in doing so. Stout's failure to attract this kind of work was compounded by the fact that during his editorship Mind drifted away from psychology, even of a theoretical sort. Mind became increasingly a philosophical journal and for a short period served as the house organ of the Aristotelian Society.\textsuperscript{19}

Despite this shift, Mind was still nominally Britain's journal for psychology until 1904. It was in this year that the British Journal of Psychology, edited by James Ward and W. H. R. Rivers first appeared, signalling a new era for psychology in Britain.\textsuperscript{20}
During the early nineties the Aristotelian Society was the society with the most ties to psychology. Ward was elected a member in 1891 and both G.F. Stout and Alexander Bain served as vice-presidents. Despite these links, the Aristotelian Society should not be regarded as a psychological society. Psychological matters were discussed extensively on a theoretical level, but the focus shifted to philosophical issues during the nineties. When Bernard Bosanquet took over in 1895 the transformation accelerated./21/

The links between psychologists and neurologists were far more tenuous in the nineties. Many psychologists admitted that they were unable to comprehend the work of the neurophysiologists./22/ As such they rarely participated in the proceedings of the Neurological Society despite the fact that Hughlings Jackson, the president of the Society, felt that instruction in psychology was a necessary prolegomena to a career in physiology. Jackson was successful in recruiting Sully as a member of the Society, but Sully later admitted that he had understood little of what was being discussed at the meetings./23/

In 1892 the Second International Congress of Experimental Psychology was held in London, with Henry Sidgwick presiding. Sidgwick was elected to host the conference as a result of his work in psychical research rather than any work in psychology, philosophy or neurology./24/ Because of this the Society for Psychical Research might be regarded as the group having the largest institutional impact upon psychology in the nineties. Sidgwick, with characteristic honesty,
admitted knowing nothing of current experimental psychology and
recruited James Sully to handle the rounding up of "ordinary"
experimental psychologists for the Congress./25/

The Congress was held in the early days of August 1892 with over
300 people attending. Partly because of the large amount of material
presented, the program was divided into two sections, one, on "ordinary
psychology" with papers on Neurology and Psychophysics; the other, on
"extraordinary psychology" with papers on Hypnotism and related
subjects. Bain opened the "ordinary" section with a paper asserting the
primacy of introspection over experimental methods, but this paper did
not set the tone for the Congress./26/ Among the papers presented were:
Victor Horsley on localization of movement; Ebbinghaus and Christine
Ladd-Franklin on theories of color vision and Binet on the psychology of
insects./27/ Lloyd Morgan presented a paper on the limits of animal
intelligence which contained his canon of parsimony that asserted: "in
no case is an animal activity to be interpreted as the outcome of the
exercise of a higher psychical faculty, if it can be fairly interpreted
as the outcome of the exercise of one which stands lower on the
evolutionary ladder."/28/ American psychologists reading papers
included James Mark Baldwin, E. B. Titchener and Lightner Witmer./29/

The second section of the Congress, devoted to hypnotism and
related subjects, was dominated by French participants. Bernheim
Liebeaut and Janet were among those presenting papers. Representing
other countries were Delboeuf, Hitzig, Sidgwick and Ebbinghaus. In
Mind's report on the congress it was noted that among participants
"there was a tendency to greater agreement as to fact and to greater
diffidence as to theory."/30/ More specifically, there was widespread
agreement on the therapeutic value of hypnosis but the importance of
self-suggestion—i.e., on "what the patient could accomplish for himself
by resolute effort of will"—was also emphasized. In addition, while
there was widespread agreement that hypnotic susceptibility was
unrelated to hysteria and that the Salpêtrière theory was erroneous,
there was little agreement as to what theory should take its place./31/

Despite the fact that the British hosted the conference, their
contributions to the proceedings were very limited. Bain contributed a
theoretical paper but only Horsley and Sidgwick discussed actual
research. The International Congress of Psychology was not held in
Britain again until 1923./32/

Other societies which had ties to psychology during the nineties
include the British Child Study Association (1894), the Childhood
Society (1896) and the Medico-Psychological Association (1865). Sully
was elected the first president of the London branch of the Child Study
Association in 1894, the year preceding the publication of his work
Studies of Childhood./33/ The Child Study Association and the Childhood
Society joined to form the Child Study Society in 1907. Hearnshaw,
among others, has described the work of these groups as lacking in
methodological sophistication and as having an amateur flavour./34/

On the other hand the Medico-Psychological Association, which had
been in existence longer, had distinctively professional character. In
the nineties this association promoted training schemes for nurses
working with the insane and issued a handbook for attendants in insane asylums./35/ The association represented a somewhat specialized sector of those concerned with psychological matters, but it was the most highly evolved of these incipient professional bodies.

Excepting these associations it was not until the turn of the century that organizations were founded to recognize the work of psychologists and to represent their interests. The British Academy was founded in 1900, specifically to honor those working in scientific fields not already represented in the Royal Society. Several psychologists including James Sully and James Ward were elected Fellows of the Academy, but Bain was not invited to join./36/

In 1901 the British Psychological Association was founded. The Association modelled itself after the Neurological society but membership was restricted to those who were recognized teachers in some branch of psychology or who had published work of recognized value. Founding members included James Sully, Sophie Bryant, William McDougall, W. H. R. Rivers, W. G. Smith and A. F. Shand./37/ Three years later the British Journal of Psychology was founded with James Ward and W. H. R. Rivers serving as co-editors./38/ In 1914 the Society took over responsibility for the publication of this journal.

Although it was not until the twentieth century that a full fledged professional organization existed for psychologists, programs were already in place for the training of psychologists within some of the British universities. during the 1890's.
Universities
University of London

During the eighties a large number of revisions had been made in
the Mental and Moral Science curriculum at the University of London.
Most significant was the preparation of a detailed syllabus which did
not merely list the topics covered in Bain's texts. Combined with the
statement that examination questions "will have no special reference to
the writings of any one author or school of authors," these changes were
potentially liberating. During this period the Medical School also
declared its independence from mental philosophy by establishing an
examination in mental physiology. Finally, the requirements for the
D.Sc. degree were revised so that original research must be conducted
by all candidates.

In contrast, the nineties were a period of relatively few changes.
In large part this was because discussions over the reorganization of
the University predominated during this period.39/ Curriculum changes
were put on hold until late in the nineties to coincide with the
establishment of the new University of London.

The 1898 changes reflect an increasing differentiation of
psychology from other subjects. The mental and moral science option on
the old B.A. honours examination had contained papers on logic, logic
and psychology, psychology, and ethics and philosophy. The revised
mental and moral science option contained four distinct papers—logic,
ethics, psychology and philosophy.40/ The B.Sc. requirements reveal
an even greater degree of differentiation. Students could elect an
option in psychology which included papers on general and comparative psychology, experimental psychology and a practical and viva voce examination on experimental psychology./41/

The curriculum for advanced students was revised significantly. The MA Branch III examination, which had covered mental and moral Science, political philosophy, history of philosophy and political economy was divided into two examinations. The two political economy papers were dropped from the Mental and Moral Science Examination (now Branch VI) and a separate Political Economy Examination (Branch VII) was established./42/ On the new Mental and Moral Sciences examination the political economy papers were replaced by a metaphysics paper and an advanced paper of the candidates choice (either history of political theory, advanced psychology or symbolic logic.)

More subtle indicators of change can be found in the questions appearing on examinations. These questions reveal that examiners expected a greater sophistication concerning the methods of psychology, as well as a more critical attitude toward previously orthodox views. Questions concerning the relative sphere of introspection and observation in psychological investigation appeared on the B.A. examinations in the nineties./43/ In 1899 candidates for the B.A. honours degree had to give an account of the application of experimental methods to the problems of association and memory./44/ In 1895 candidates for the B.Sc. pass degree had to describe how Weber's law had been revised by the work of Fechner and Wundt./45/
During the nineties candidates were also expected to critically evaluate the doctrine of human automatism, the tripartite view of the mind, the doctrine of the muscle sense and the copy theory of knowledge, among other topics. In short, students were expected to be knowledgeable concerning some of the central intellectual controversies in psychology. In addition, the essay topics presented to M.A. candidates reveal a shift away from the hegemony of Bain's doctrines. In 1892 and again in 1899, students were asked to critically evaluate relations between psychology and philosophy. In 1899 students were asked to write on "the conception of activity in psychology" and/or on "the self as the starting point for knowledge." In 1900 they could elect to write on "teleology in psychology and metaphysics." 

The critique of Bain's psychology was also reflected in changes in the psychology curriculum. Topics dropped from the 1884 curriculum included "freedom of will," "belief and knowledge," "Self and the external world," and "relations of body and mind." The exclusion of these topics reflects a deemphasis upon philosophical issues in this examination, while the new topics indicate a shift away from Bain's views. These included "consciousness and subconsciousness," "hypothesis of unconscious mental states," "development of self-consciousness," and "mental development." "Attention and other fundamental psychical processes" replaced the topic "attention" and the earlier topic, "laws of association," became "association and suggestion."
The revised curriculum still reflected the bias of Utilitarian-Associationist psychologists toward the investigation of conduct and the study of the higher mental processes. Although by 1898 there was a separate ethics paper on all of the mental and moral science examinations, questions about volition and volitional control were still appearing on examinations. Questions of a practical nature—concerning the results of too rapid reading on memory or the selective influence exercised by a prejudice—often appeared on examinations during the nineties.\textsuperscript{50/}

Although there were a number of curriculum changes, the nineties must still be regarded as a period of relative stability. The revisions mentioned did not come into effect until 1899 (B.A.) through 1902 (B.Sc.), a considerable time after the previous revision. These changes had their greatest impact on students in the early years of the twentieth century, not upon students in the nineties. Furthermore, although we can detect shifts in the questions on the examinations, such shifts may simply reflect idiosyncracies on the part of individual examiners.\textsuperscript{51/} Certainly the examinations themselves cannot be regarded as instruments of change. The number of students taking these exams was never very high and it dropped further during the nineties.\textsuperscript{52/} Although many individuals were busy with the task of redefining psychology during the eighties and nineties, their results were presented to a limited audience.
University College

University College was the scene of a number of changes during the nineties. George Croom Robertson resigned from the Grote Chair in 1892. The ensuing contest for the chair was between Samuel Alexander, W. E. Johnson, J. S. Mackenzie, G. F. Stout and James Sully. The committee eliminated Johnson as being too narrow, but could reach no decision among the remaining candidates. Henry Sidgwick was consulted concerning the relative merits of the candidates and Sully was awarded the chair.

During Sully's tenure at University College course enrollments dropped and a decreasing percentage of the successful B.Sc. and M.A. candidates were drawn from his courses. These facts were a matter for concern, as Grote had stipulated that continuance in the chair was, in part, dependent upon successful teaching. The review committee expressed their concern and Sully did acknowledge that "it does look rather odd." However, he attributed the decline in enrollment to the popularity of correspondence courses and their success in prepping students for examinations.

While Sully did not have any deep or widespread influence upon a new generation of potential psychologists, he did introduce several new courses at University College. In 1893 he introduced a course on aesthetics; in 1895 a course on Experimental Psychophysiology and in 1898 a laboratory course in psychology. However, only the aesthetics course was taught by Sully. L. E. Hill taught the course in Experimental Psychophysiology, while various individuals--including
W. H. R. Rivers and William McDougall—taught the laboratory course./58/

Sully also helped to establish a Psychological Laboratory at University College in 1898. A number of individuals donated money to purchase a portion of Münsterberg's psychological apparatus and the College provided a room to house the apparatus./59/ Unlike the Cambridge laboratory, which was officially founded in the same year, this laboratory attracted few researchers in its early years.

After ten years of less than enthusiastic teaching, Sully retired. In the resulting contest for the Grote Chair, psychology suffered further set-backs./60/ From a field of eleven candidates, five were chosen for serious consideration—W. R. Boyce Gibson, G. Dawes Hicks, Thomas Loveday, Carveth Read, and W. G. Smith. Loveday was eliminated due to his "lack of important achievement."/61/ Hicks received more serious consideration but was eliminated due to lack of teaching experience./62/ The committee expressed concern about Gibson's idealism as well as idealistic tendencies in the work of Smith./63/ Smith's candidacy is of interest as illustrating the fate of an experimental psychologist in an institution purportedly hospitable to psychology. Smith had received his Ph.D. under Wundt in Leipzig and had taught at Harvard and Smith before returning to a position at Kings College. Despite such impressive credentials, the committee bypassed Smith in favor of Carveth Read, a logician who had stated emphatically that he had no desire to be responsible for the teaching of experimental psychology./64/ As a conciliatory gesture the committee recommended the
establishment of a Readership in Experimental Psychology, to be awarded to McDougall.

Read's appointment marked the nadir of psychology's fortunes at University College. While a separate position was created for experimental psychology, it was only a part-time position and McDougall actually spent more time at Oxford than at London. It was not until Spearman succeeded McDougall in 1907, that psychology in London was revived. However, Spearman and his successor to the Grote Chair, Cyril Burt, propounded a distinctive brand of psychology which differed in many respects from the Mill-Bain-Robertson-Sully tradition. I contend that psychology's fortunes in London began to decline in the nineties, while Sully was still in the Grote Chair. While Sully instituted some progressive changes—the establishment of a psychological laboratory and of a laboratory course in psychology—their timing suggests that he was simply trying to keep pace with developments at Cambridge. Furthermore, the individuals selected to perform these new functions did not remain at University College very long. The year following his appointment, Rivers left on the Torres Straits Expedition. After his return, he worked exclusively with C. S. Myers at Cambridge. McDougall preferred Oxford to London, despite the fact that he was surrounded by critics at Oxford and nominally prohibited from experimentation.

A number of factors were responsible for the decline on psychology's fortunes at University College. The organization of the University with its split between teaching and degree granting
functions, was perhaps the largest single factor. The fact that the University had become associated with a particular school of philosophy, a school heavily criticised in the eighties, no doubt damaged its reputation. Also of importance was the fact that the University failed to hold onto good teachers and therefore failed to attract students. Sully's lack of enthusiasm for the position stood in marked contrast to Bain's partisan zeal as an examiner and Robertson's more tolerant concern as a teacher. Although other factors played a role, Sully must be held responsible for a good part of the decline of the fortunes of psychology at the University of London during the nineties.

In contrast, at Cambridge University psychologists established stronger footholds during this period. Sidgwick, Ward and Stout helped pave the way for a future generation of psychologists. It is to their work that we now turn.

*Cambridge University*

Individuals at Cambridge were considerably ahead of those at London in seeking to establish laboratory work in psychology. Venn and Ward had requested funds for psychophysical research in 1886 and again in 1888 although both these requests were turned down. A course of lectures on psychophysics had been presented in 1888 by the American, James McKeen Cattell, and an informal laboratory was set up under his direction.
Three years later the General Board of Studies approved a grant of £50 for the purchase of psychophysical apparatus.\textsuperscript{66} Although this was not a great deal of money, it represented a victory for psychology. In 1897 a small room was set aside for a laboratory. Although larger quarters were provided in 1901, it was not until 1903 that regular monies for equipment and expenses were provided, and not until 1911 that a specially built psychological laboratory was provided.\textsuperscript{67} While Cambridge's psychological laboratory was not fully established in the nineties, more of the preliminary steps had been taken there than in London.

Cambridge also offered a greater number of academic posts for individuals working in psychology. In 1894 a second lectureship in Moral Science was created and G. F. Stout, who had been giving lectures on psychology since 1885, was appointed.\textsuperscript{68} When Stout left for Aberdeen in 1896, the lectureship passed to W. E. Johnson who had been one of Sully's competitors for the Grote Chair in 1892. In 1896 the Knightsbridge Chair of Mental Philosophy and Logic was created and awarded to James Ward.\textsuperscript{69} The following year W. H. R. Rivers was appointed University Lecturer in Physiology of the Senses and Experimental Psychology, a position he held until 1907.\textsuperscript{70} Later developments also aided the growth of psychology at Cambridge. In 1904 C. S. Myers was appointed to assist Rivers in the laboratory work and in 1907 he became University Lecturer in Experimental Psychology. After 1911 Myers was assisted in teaching and laboratory work by G. Dawes Hicks and Cyril Burt.\textsuperscript{71}
The Moral Sciences Tripos was revised twice during the nineties—in 1893 and 1900. These revisions reveal that there was concern about the role of the Moral Sciences Tripos at Cambridge and that there was recognition of the increasing independence of one of the moral sciences. However this science was not psychology, but political economy.

In 1883 the Moral Sciences Board adopted a two part curriculum for the Moral Sciences Tripos. Psychology was one of five subjects on Part I—the general and elementary portion of the examination. A more detailed and advanced knowledge was required for Part II and advanced psychology and psychophysics was one of six subjects appearing there, of which students must select two.

Revisions to this scheme were adopted in 1889 and came into effect in 1891. These revisions streamlined the first part of the examination. Students were now required to write a paper of general essays as well as two papers on each of the following subjects: psychology (along with ethical psychology), logic and methodology, and political economy. The two parts of the examination were given in successive years, thereby easing some of the pressure on students. Ethics, metaphysics and political philosophy—subjects which had previously appeared on Part I of the exam—became compulsory on the revised Part II. In addition, students wrote papers on one or two special subjects chosen from history of philosophy, advanced logic and methodology, advanced psychology and psychophysics and advanced political economy, plus a general paper covering all of these topics. The revised Tripos required greater depth of knowledge but less breadth on Part I, while permitting more
specialization on Part II.

The psychology curriculum underwent only minor changes, in line with the inclusion of ethical psychology as a subtopic. New recommended readings included Sully's *Outlines of Psychology*, Bernstein's *The Five Senses of Man* and Ward's "Psychology." While Bain's *Emotions and Will* was recommended, *Senses and Intellect* was only listed as a work to be consulted. Spencer's *Principles of Psychology* dropped from the recommended list to the "should be consulted" list. Two new American works also appeared on this secondary list--Dewey's *Psychology* and Ladd's *Elements of Physiological Psychology*.

Following these changes, the number of students completing the Moral Sciences Tripos declined. During the period from 1883-89 an average of nine students per year took the exam. For the period from 1893-99 this figure dropped to six, despite the fact that more students were taking Part I of the Tripos. The decline in students was one factor leading the Moral Sciences Board to recommend further changes in the curriculum in 1897.

These revisions, which did not come into effect until 1900-01, involved broadening the scope of Part I and making it possible to specialize in either philosophy or political economy on Part II. A compulsory paper on ethics was added to Part I making that examination more like the pre-1893 versions. Part II was divided into a philosophical and a politico-economical branch. If students opted for the philosophical branch they were required to write two papers on metaphysical and moral philosophy and one on general history of modern
philosophy. One or two additional papers could be written on (1) advanced psychology and psychophysics, (2) advanced logic and methodology or (3) a special topic in the history of modern philosophy. Students opting for the politico-economical branch wrote one paper on political philosophy and three on advanced political economy./79/ These revisions seem to represent a step backward for psychological study. Not only could students completely avoid the subject of psychology on Part II, those who opted for it now had to write only one paper, instead of the previously required two. In fact, the situation vis-à-vis psychology was not really very different than it had been on prior curricula. Since 1883 it had been possible for students to omit the psychology papers on Part II of the examination. In the period from 1893-1899, only one student had earned a distinction in psychology./80/ Despite this fact the laboratory was attracting students and by 1901 three researchers hoped to conduct original investigations if adequate space could be provided by the University./81/ Although the Moral Sciences curriculum may not have encouraged the study of psychology it also did not deter students from the subject.

Cambridge clearly took the lead in psychological studies during the nineties. Nevertheless another "moral science"—political economy—was advancing far more rapidly as a discipline than psychology. Since the early 1880's the Moral Sciences Board had given preference to the needs of political economy over psychology./82/ In the late nineties the Board granted it a virtually independent status on the Moral Sciences Tripos. Such a course of development did not take place for psychology
in the nineties or afterwards. While the Moral Sciences Board was hospitable to psychology, it did not actively pursue its development as an independent discipline./83/

It was not until 1919 that the Moral Sciences Board admitted it was unable to "devote sufficient attention to such arrangements as will meet successfully the now rapidly increasing practical demands by which psychology is confronted."/84/ When work in World War I had demonstrated that psychology can be of benefit in practical situations, it began to be granted an independent status in academic settings./85/

Teacher's Training

Cambridge

The Teacher's Training Syndicate, organized in 1879, continued to provide lectures on the theory, history and practical aspects of education during the nineties. Psychologists, such as James Ward and James Sully, were employed to deliver the theory lectures which traced relations between psychology and education.

Students obtained a certificate of proficiency after passing examinations in three areas. During the nineties the number of students increased significantly. From 1888-1890, 206 students obtained certificates. From 1893-1895 the number was 273 and in the period from 1898-1860 the number reached 403./86/ Alongside this increase in enrollment, there were considerable fluctuations in the rate of passing. Examiners were most critical about candidates' performance on the theory portion of the examination. In their comments on the papers they noted...
that it was "too obvious that they 'got up' psychology for the test alone," and that the answers were "too mechanical."/87/ Whether this reflected deficiencies on the part of the students, deficiencies on the part of the lecturers, the difficulty of applying an incomplete theory to an unfamiliar practice, or all three factors, is not clear. While psychologists were able to play a role in such teacher training schemes, their impact was limited, for a variety of reasons./88/

There were further developments in teacher's training at Cambridge during the nineties. In 1890 the government Education Department issued a set of regulations governing the establishment of non-residential Training Colleges, and established Queen's Scholarships for study at such colleges. Led by Oscar Browning, the Teacher's Training Syndicate proposed that the University "avail themselves of the opportunity offered by the Education Department," by establishing a Day Training College./89/

The guidelines issued by the Education Department called for a three year curriculum. During the first two years the training was exclusively subject oriented but in the third year students attended courses on the art, theory and history of education. While it was possible for students to receive certification after only two years of training, the Cambridge organizers felt that most students would want to remain the full three years and obtain a University degree in the process. The Syndicate lecturers--already partially supported by the University--could provide the necessary instruction during that third year. Because of this, they argued, the Training College would require
The proposal did not meet with unanimous approval; several Senate members voiced objections to the scheme. The central issue in dispute was whether Cambridge, as "a place of liberal education," ought to commit itself to a college of technical training. Potential problems with such a scheme—both for the students involved and for the university—were raised. One Senate member wrote that if "University learning and tone" be desirable in the training of teachers then non-University affiliated Training Colleges should simply raise salaries so as to "attract successful University men to their staffs." While these objectors were willing to concede that the training of teachers was a pressing problem, they did not regard it as a problem Cambridge should help solve.

Despite such objections the scheme was approved and the Day Training College began operating in 1891. The establishment of this Training College no doubt accounts for the increase in numbers taking the Cambridge Examination in the nineties.

London

The program for teacher training at the University of London, such as it was, had a far more limited success. From the outset, London trailed behind Cambridge in providing for teacher training, although the program finally created was distinctively practical in character. London's examination in the Art, Theory and History of Teaching was established in 1883. Students took a practical test on their teaching
ability as well as a written examination. On this written examination there were two papers on practical "teaching arts" and one each on the history and the theory of teaching.

The theory of teaching was, of course, mental and moral science, and that portion of the examination was conducted by the University Examiners for Mental and Moral Science. The syllabus for the teaching examination mirrored the Mental and Moral Sciences Syllabus with some additional topics oriented to the tasks teachers presumably carried out./93/

Despite the overall practical emphasis of the London examination, the theory portion remained quite theoretical. Teachers in training for a career in elementary education were expected to answer questions like the following:

What truths has psychology established respecting the natural course of development of a child's mind, and what is their precise bearing on the method of teaching?

How may the training of the Will be both directly and indirectly developed at school? By what methods would you propose to carry it out systematically?

Various methods for "the conduct of the Understanding" have been proposed from the rise of modern philosophy. Select any one of them, and give a critical account of it. /94/

The London Examination attracted fewer candidates than the examination at Cambridge. From 1883 to 1900 only 81 people earned the London certificate, while at Cambridge more than that number earned the certificate each year. /99/ Although the numbers were low the candidates
were highly qualified, all having previously earned University degrees. At least one distinguished British psychologist, Beatrice Edgell, who later became Professor of Psychology at Bedford College, took the examination. [96] In 1902, eleven years following the founding of the Cambridge Day Training College, a London Day Training College was established. Sir John Adams, author of Herbartian Psychology Applied to Education (1897), a work not in tune with the Associationist-Utilitarian tradition, became the first full-time staff member. [97] This Training College, which evolved into London's Institute of Education, played an important role in the development of a discipline of educational psychology in Britain. But such developments go beyond the period we are examining.

Summary

During the nineties Cambridge was more extensively involved in attempts to integrate psychology and education than was the University of London. How successful such attempts were is a separate matter, and there is little evidence to suggest that these were very successful. We have seen that examiners were not impressed with the candidates understanding of the theory of education. Other evidence suggests that candidates were not impressed with the instructors of the theory of education.

Nevertheless these teacher training schemes did provide employment opportunities for individuals trained in psychology. James Ward and James Sully earned a substantial portion of their early income from such
work and other psychologists also benefited. Psychology and psychologists were saved by practical applications even if these practical applications were not judged as being of very great value.

Summary:
Institutional Developments in the Nineties

Cambridge clearly took over the lead in institutional support of psychology during the nineties. Cambridge men were editing Mind and the University established two new lectureships and a professorship that were awarded to psychologists. In addition, the rapidly growing Teacher’s Training Syndicate continued to provide employment for psychologists. Finally, the Cambridge Laboratory began to operate, although it was not a fully active research laboratory until the twentieth century.

In contrast, enrollments in the Mental and Moral Sciences at London University dropped. The Mental and Moral Sciences lectures attracted fewer students, including a number who were preparing to take the Mental and Moral Sciences examination. Although new courses were offered and a laboratory was established, these were staffed by part-timers who had primary commitments elsewhere.

There is no single way of accounting for this situation. To a certain degree, the personalities and values of individuals at the two institutions made a difference. There were a number of people at Cambridge who were interested in psychology and eager to advance its cause. Henry Sidgwick, James Ward, W. H. R. Rivers and Michael
Foster must be mentioned. At the University of London there was only James Sully, but he seems to have regarded himself as a literary gentleman rather than a professional academician.

There were also important institutional differences between the two places. Although the Cambridge Boards commanded no independent funds, and therefore had little power, they were experienced in lobbying for certain of their goals. At Cambridge, alliances among Boards were formed to achieve mutual goals. This was true when members of the Moral Sciences board served on the Managing Board of the Teacher's Training Syndicate. And it was true when the Moral Sciences Board and the Biology and Geology Board joined to recommend the establishment of the Lectureship in Physiology of the Senses and Experimental psychology and the establishment of a Psychological Laboratory.

Such institutional clout was missing in London. Unlike his predecessors--Bain as an examiner and curriculum reformer and Robertson as the first Grote Professor--Sully was not committed to the professionalization of philosophy and psychology. Additional problems stemmed from the fact that the University was undergoing a major restructuring at the time of Sully's tenure in the Grote chair.

Despite the fact that psychology fared better at Cambridge during this period, I can only detect an incipient discipline of psychology during the nineties. Many of the organizational prerequisites for discipline formation were in place in the nineties. Discussion forums, such as Mind and the Congress of Experimental Psychology; degree programs and a limited number of professional positions were all in
place, but certain essential components were missing. Although there were some professional positions, there was no great demand for psychological expertise either in the universities or elsewhere. While it was considered desirable for those teaching or working with the mentally ill to have some training in psychology, it was by no means mandatory. It was not until the 1920's that we can begin to see the formation of a true discipline of psychology. By this time increased industrial complexity and the growth of the educational system had helped create more niches for professional psychologists. Furthermore, World War I had given psychologists the opportunity to demonstrate the value of their training in research on fatigue and in the treatment of those suffering from shell shock.

Another factor which differentiates the British, the German and the American cases is the size of the University population. One might plausibly argue that prior to 1920 Britain simply lacked the critical mass of students necessary for discipline formation. In 1890 there were approximately 6,300 students in Britain, compared with 28,900 in Germany and 156,800 in the United States. By 1900 this number had reached 20,000 compared to 42,000 in Germany and 237,000 in the United States. By 1925 the number had reached 42,000 but this figure must be compared with the 120,700 students in Germany and the 597,000 in the United States. While the increase in British University students between 1900 and 1925 is certainly significant, it is somewhat sobering to note that in the United States in 1920 there were 33,407 professorial positions, rather close to the total number of students in Britain. Given these figures it is not too surprising that Britain
lagged behind Germany and the U.S. in the institutional differentiation of psychology.

While all these factors are important, they are not decisive. Under the same conditions other subjects--such as political economy and anthropology--were able to establish themselves as autonomous disciplines. I contend that to understand the case of psychology in Britain we need to look at its intellectual background. One of the foremost contributions of the Utilitarian-Associationist tradition was to establish psychology as a propaedeutic science, in the first instance for epistemology, and secondarily for other fields, such as education, ethics, law and treatment of the insane.

In this dissertation, I have traced the demise or decline of psychology functioning in such a manner for philosophy, while maintaining that the other functions remained. Indeed in several cases these functions became more important due to concurrent developments such as the growth of schools and of mental asylums.  

Because psychology was largely a "service discipline" it had a more difficult time establishing independence. When such steps were made in the 1920's they involved an explicit recognition of the multidisciplinary character of psychology.

In this dissertation I have traced the demise of a particular philosophical program; a program with very close ties to psychology. In the remainder of Part IV I will examine the work of two psychologists in the nineties--James Sully and James Ward--with two aims in mind. In the first place an examination of their work will reveal how the critique of
Utilitarian-Associationist thought affected psychological theory. Secondly, I will suggest that this critique had a more long range impact upon British psychology.
NOTES FOR INTRODUCTION TO PART IV

1. Despite the institutional apparatus there was only one successful candidate for the D.Sc. degree until 1884. In 1883 the requirements were changed making it necessary to submit original research in partial fulfillment of requirements for the degree. This brought the requirements more in line with what was expected in German Universities, but did not serve to attract more candidates. Only 3 D.Sc. degrees were awarded in the eighties and nineties.

2. This position was challenged by the appearance of G. Stanley Hall's American Journal of Psychology in 1887. In addition, Mind had stiff competition from Th. Ribot's Revue Philosophique which had also been founded in 1876.

3. The Cambridge curriculum was undergoing revision at this time and Ward and Sully sent in a new scheme for London along the lines of this revised scheme. In the Cambridge scheme, Bain's works were not listed for the advanced psychology and psychophysics portion of the curriculum. See Introduction to Part III, section entitled "University of London" above.

4. D. Hake Tuke served as the examiner for the mental physiology paper required of all medical students during this period.


7. Robertson died shortly after resigning as editor. Bain apparently felt that he had done enough for the journal although he wished to ensure its continuance. According to Bain, his actual outlay for the journal averaged £100 per year although he insisted that this information should not be made public. Bain to G. C. Robertson 14th July 1891. All letters between Bain and Robertson are in the George Croom Robertson Papers, University College Library, University College, London.

8. Robertson reported Sidgwick's purported change in the title to Bain, and asked for his opinion on the matter. Robertson to Bain, 22nd November 1891. Bain replied:

"Of course I should deplore the change of title and S could not but divine as much. His backing up of Balfour in depressing
Psychology makes him our enemy and his influence in the journal, in that way must be bad." (Bain to Robertson, 29th November 1891)


10. Ibid., pp. 558-59.

11. Robertson's own comments indicated the increasing influence of Cambridge. He wrote:

"the start is made at Cambridge where it not only was first to be looked for but has the best prospect of being followed up to good purpose. Elsewhere, north or south, academic circumstances are not, for the moment, favourable to the development of the new line of psychological investigation." (Ibid., pp. 559-60.)


13. Ibid., p. 1


15. Bradley and James debated the nature of resemblance, while Bradley and Schiller debated everything. While I have maintained that Mind became a Cambridge journal, the frequent interchanges between Bradley and Schiller in the pages of Mind coupled with the fact that Stout was "Wilde Reader in Mental Philosophy" at Oxford from 1898-1903 led some people to regard it as an Oxford house organ.

16. However, as Passmore notes, Moore and Russell did not continue publishing in Mind. For this reason, he concluded that the journal did not truly reflect some of the newer trends in philosophy, even though it did manage to document the death of absolute idealism (represented by Bradley). Ibid., pp. 20-21, 28-30.


18. Titchener defended Münsterberg (Mind 16 (1891):521-34; and 1 n.s. (1892):397-400) and contributed reports on psychological laboratories (Mind 1 n.s. (1892):206-34; and 7 n.s. (1898):311-31.) McDougall contributed a series on psychological method (Mind 7 n.s. (1898):34, 159-78, 364-87.)

19. From 1896 until 1898 selected papers of the Aristotelian Society were published in Mind. Apparently some readers objected to the "privileged position" of the Aristotelians. Stout published a note clarifying the connection between Mind and the Aristotelian Society and emphasizing that the journal was open to manuscripts from other sources. Stout, Mind 7 n.s. (1898):288. In 1899 the Aristotelian Society resumed
publication of its Proceedings.

20. Ward and Rivers were assisted in their editorial duties by A. Kirschmann, W. McDougall, C. S. Myers, A. F. Shand, C. S. Sherrington and W. G. Smith. The first volume (1904-5) contained five papers by McDougall, two each by Ward and Myers and one each by Rivers, Sherrington, W. G. Smith and Spearman.

21. A. W. Brown notes that there objections were made to the amount of discussion of psychological issues, but I have not been able to verify this.

22. In 1886 Bain wrote of his desire to employ someone "to pick out the occasional grains of precious metal in this huge stratum of physiology." Bain to G. C. Robertson, 13th August 1886.


25. Ibid. 513. Sidgwick wrote in his journal:

"Behold me, then, President-elect of a Congress of Experimental Psychologists--most of them stubborn materialists, interested solely in psychophysical experiments on the senses; whereas I have never experimented except in telepathy. Water and fire, oil and vinegar, are feeble to express our antagonism! What was to be done? How was the Congress to be got up? I took a decided step. I sought out James Sully--probably the one Englishman known to German Professors as a writer on physiological psychology--and said to him, "... be secretary: write to leading Germans and, in short, get up the Congress so far as ordinary experimental Psychology goes. [F. W. H.] Myers and I will provide the extraordinary element; and we will trust in Providence to make the explosion when the two elements meet endurable! He agreed." (Ibid. pp. 515-16)

26. This paper was later published in Mind as "The Respective Spheres and Mutual Helps of Instrospection and Psychophysical Experiment in Psychology," Mind, 2 n.s. (1893):42-53. Sidgwick did not allow time for discussion of this paper, which may indicate that Bain was invited to address the Congress because of his stature as a British psychologist, rather than because his views were relevant to discussions in the nineties. See the International Congress of Experimental Psychology: Second Session, London, 1892. "Report of Proceedings," (London: Williams and Norgate, 1892), p. 9.


30. Ibid., p. 586.

31. Ibid., pp. 586-87.

32. As E. B. Titchener was educated in Britain he might be added to the roster of British contributors which, nevertheless, remains quite small. As the Congress was always held in the country of the presiding officer, this meant that no British psychologist was elected president until 1923. In that year C. S. Myers was so honored and the International Congress was held at Oxford. Hearnshaw, British Psychology, p. 174.

33. Ibid., p. 269.

34. Ibid., pp. 269-70.

35. Ibid., p. 146.

36. Sully reported that Bain was unhappy about his exclusion from the Academy. See Sully, My Life and Friends, pp. 242-45.


38. See n. 20 above.

39. The Gresham Commission was appointed in 1892 and made their final report in 1894. In 1898 the University of London Act was passed and new statutes for the University were issued in 1900. Hugh Hale Beckett, University College London, 1826-1926 (London: University of London Press, 1929), pp. 380-81. The Gresham Commission Report stressed the need for advanced instruction and post-graduate research and scientific study and provision was made for such study in the reorganized university. J. W. Adamson, English Education, 1789-1902 (Cambridge: Cambridge University Press, 1964), pp. 436-38.

40. University of London Calendar, 1901-2.

41. These changes were made based upon the recommendations of a committee consisting of Samuel Alexander, Sophie Bryant, Lloyd Morgan, W. H. R. Rivers, G. F. Stout and James Ward. Senate Minutes, vol. 15 (1899-1900), Senate House Library, University of London.
42. These changes parallel those made at Cambridge in 1897. Students taking the new Political Economy examination were required to write a paper each on Logic and Psychology.


44. University of London Calendar, 1900:300.

45. University of London Calendar, 1896:170. Such a question had appeared on the M. A. examination eight years earlier (University of London Calendar, 1888:143) and on the B. A. honors examination three years earlier (University of London Calendar, 1893:188.)

46. University of London Calendars, 1893:100; 1900:190; 1896:220; 1900:194.

47. University of London Calendars 1893:101; 1900:193; 1900:193; 1901-2. Essay questions such as these would never have appeared on an examination prepared by Alexander Bain.

48. However, volition and volitional control appeared as new topics.

49. In addition the topic "the nervous system in its relation to psychical states," appeared, a change Bain certainly would have approved of.


51. This of course is a general problem with the technique of employing such historical materials as indicators of change.

52. During the period from 1881-89 the average number taking the B.Sc. exam each year was 4.9 while the average number taking the M.A. exam was 4.4. During the period from 1893-99 the number taking the B.Sc. exam remained stable (an average of 4.7 each year) while the average number taking the M.A. exam dropped to 2.8. Although we can detect significant changes in the curriculum, the limited audience makes it impossible to claim that these changes were widely influential. Developments after 1905 changed things considerably. Mental and Moral science was dropped although philosophy remained. An M.A. in philosophy was established. Only the B.Sc. examination retained psychology as an optional paper. However no students took honours in this subject from 1905-1908 and only 19 took pass degrees. These figures are drawn from the University of London Calendars for those years.

53. Robertson had resigned as editor of Mind the previous year due to ill health. Unfortunately he died only four months after his retirement from the Grote Chair.
54. Judged by later accomplishments this was a very distinguished group of candidates. Samuel Alexander, who had spent a year working in Münsterberg's laboratory, later became Professor of Philosophy at Manchester University. He was the author of *Space, Time and Deity* a work espousing a conative theory of knowledge culled from Stout's work and he fostered the development of psychology at Manchester. In 1909, Alexander invited T. H. Pear to Manchester as a lecturer in psychology and in 1919 Pear became the holder of the first full chair of psychology in an English University.

W. E. Johnson was eliminated early because all of his work at Cambridge had been in the field of logic. Despite this "narrow background" he lectured on the theory of education (i.e., psychology) for the Cambridge Teachers Training Syndicate during the nineties. In 1896 he succeeded Stout as Lecturer in Mental at Cambridge and Moral Sciences at Cambridge and in 1902 became Sidgwick Lecturer in Mental and Moral Sciences.

J. S. Mackenzie's work had been in the field of metaphysics where he espoused a Hegelian position. This fact was cited against him by Sidgwick who wrote:

"to take such a man to succeed Professor Robertson in the Grote Chair would seem to me a breach with the past only justifiable on the supposition of a very decided superiority in M. as compared with the other two men [Stout and Johnson]. And I do not recognize any such superiority." (Quoted in report dated June 28, 1892, AA/C/275. All University College Correspondence is in the University College Library, University College, London)

The committee noted that similar remarks might apply to the work of Alexander and concluded that the choice seemed to lie between Stout and Sully. *Ibid*., p. 23. This emphasis upon continuity of intellectual tradition within a university seems to be characteristic of British universities and may be an additional factor working against disciplinary innovation.

Stout was a fellow of St. John's and had been lecturing on psychology at Cambridge since 1885. He had recently been appointed editor of *Mind* and in many ways seemed a logical choice for the position, despite the fact that his view of psychology was at greater variance with "the past" than was Sully's. Also working against Stout was the fact that Sully had begun his work in the field ten or twelve years earlier. Sully's established reputation was cited by Sidgwick and the committee in favor of his claim, although Sidgwick added the proviso that his teaching ability should be investigated. The committee surveyed former students who indicated that "without being an eloquent lecturer, he is a thoroughly efficient teacher." *Ibid*.

In his letter to the committee Sidgwick asserted that he felt Sully to have the strongest claim. And the committee decided in favor of Sully. During this period Sully was helping Sidgwick organize the
International Congress of Experimental Psychology, a fact that may have colored Sidgwick's recommendation. On the other hand, Sidgwick may simply have been astute enough to have recognized that Sully was the only remaining individual who could carry on the tradition of University College.

I have found no direct evidence that Stout was greatly disappointed at having failed to obtain the position. Nevertheless, he later did make disparaging comments on Sully's abilities as a psychologist. Stout to Bradley, 31 January 1893. F. H. Bradley Papers, Merton College Library, Merton College, Oxford. Despite this defeat, Stout went on to a distinguished career. He was Lecturer in Mental and Moral Sciences at Cambridge from 1894-96 and from 1896-98 Anderson Lecturer From Comparative Psychology at Aberdeen University. From 1898-1903 he was the first Wilde Reader in Mental Philosophy at Oxford. In 1903 he became Professor of Logic and Metaphysics at St. Andrews.

55. During the eighties when Robertson was teaching at University College an average of 39 students per year attended his classes. "Committee Reports," 24 February 1881, 22 January 1885, 1889, AM/C/67, AM/C/164, AM/C/220. During the first three years of Sully's tenure (1893-95) this figure dropped to 33; during the next four year period (1897-1900) it dropped to 25. "Committee Reports," 18 March 1896, 5 December 1900. AM/D/A5, AM/D/130. In 1895 six University College students passed the B. Sc. examination in Mental and Moral Science, but only two of those six had attended Sully's classes.

56. "Committee Report," 18 March 1896. AM/D/45. Sully's comment was deleted from the final version of the report. Sully implied that the problem did not stem from the quality of his teaching but from the attractive offer of the "quick fix" approach of the correspondence courses. However, the typical "quick fix" of the courses consisted in recommending that students become familiar with the viewpoint of the examiners. During the years in question, Sully was one of two Examiners in Mental and Moral Science for the University of London.

57. The aesthetics course--which was described as "a course on some of the applications of Psychology to the theory of the Fine Arts"--was initially offered during the short summer term. University College Calendar, 1893, p. 55. The topics discussed varied from year to year. The Experimental Psychophysiology course involved 20 lectures and practical demonstrations on "the special senses and central nervous system." University College Calendar, 1894-95, p. 78. This course was offered only one time. The Laboratory course in Experimental Psychology was described as: "one or more courses dealing with the Physiology and the Psychology of the Senses and the Application of Quantitative Methods to the Study of Mental Processes." University College Calendar, 1897-98, p. 59.

58. W. H. R. Rivers was appointed to teach the Laboratory course during the same year he was appointed University Lecturer in Physiological and Experimental Psychology at Cambridge. After one year of teaching, he left on the Torres Straits Expedition. When he returned
his stipend at Cambridge was increased (from £50 to £150) making it no
ger longer necessary to supplement his salary with work at London. In 1900,
McDougall took over these lectures and was officially recognized with a
Readership in 1903. The following year he became Wilde Reader in Mental
Philosophy at Oxford.

59. Münsterberg was about to migrate to Harvard and was selling
part of his collection of psychological apparatus: Individuals who
corresponded to the fund included F. Galton, H. Sidgwick, A. J.
Balfour, R. B. Haldane, Sir John Lubbock and Shadworth Hodgson. Mind
6 n.s. (1897): 448

60. The new examination regulations for the University had come
into effect by this time. On the B.A. ethics and history of philosophy
became separate papers. In 1903 the Senate of University College, in
line with the recommendations of the College's founders, recommended the
establishment of a second professorship in Moral Philosophy, in order to
meet those teaching responsibilities. "Report of the Senate," 2 March
1903. AM/D/219.


62. The Report also noted that Hicks was a former dissenting
minister and therefore "excluded by the terms of the Grote trust." Ibid.
However, in 1904, when the chair of Moral Philosophy was created, Hicks
obtained the position.

63. Ibid. The fact that this was still a concern in 1903 shows
the strength of the tradition that had been established at University
College by Utilitarian-Associationist thinkers.

64. Ibid. It is difficult to assess just which factors
contributed most heavily to Smith's defeat. Although he had
testimonials from distinguished psychologists, including Wundt, they
were not as positive as the ones presented for Read. Perhaps the
Committee perceived him as simply too narrow for the position.

Concurrent with his position at Kings, Smith set up a department of
experimental psychology at the L.C.C. Asylum at Claybury. There he
carried out research on memory and association among mental patients.
Hearnshaw, British Psychology, p. 288. Smith was also one of the
founding members of the British Psychological Society. In 1905 he
lectured on experimental psychology at Liverpool under Sherrington. The
following year he moved to Edinburgh where he established the George
Combe laboratory. He ran this laboratory single-handedly until his

65. When Carveth Read retired in 1911, Spearman became Grote
Professor of Mind and Logic, a title changed to Professor of Psychology
in 1928. Spearman, under the influence of Galton, shifted the character
of London psychology so completely that later thinkers could refer to
University College's "original traditions . . . developed there by
Galton [of] 'individual' or 'differential' psychology". Cyril Burt in
Murchison, *History of Psychology in Autobiography* Vol. 4, 1952. My dissertation is about a different "original tradition" at University College. Interestingly, both traditions shared the commitment to applying psychology to practical problems.


67. The proposal for an Experimental Psychology Laboratory was initiated by the Board of Moral Sciences and the Board for Biology and Geology. Hearnshaw is partly correct in asserting that "Cambridge psychology itself was on one side the child of Cambridge physiology." Hearnshaw, *British Psychology*, p. 75. In the first place, Sir Michael Foster initiated the establishment of a Lectureship in Physiology of the Senses and Experimental Psychology to which W. H. R. Rivers was appointed in 1897. Rivers was the moving force behind the establishment of the Psychological Laboratory. Minutes of General Board of Studies, 3 February 1897, 3 March 1897, 5 May 1897, 19 May 1897, 3 November 1897. Min. 111.1, 388.5, 393.7, 394.4, 397.6, 404.3.

Furthermore, the 1901 proposal for expanded quarters originated with the Special Board of Biology and Geology, who turned it over to the Board of Moral Sciences (since Psychology formed a part of the Moral Sciences Tripos). The Board requested £35 per annum for a period of two years to cover the rent of 13 rooms in a building temporarily housing the Department of Pathology. "Report of the Special Board for Moral Science on a Laboratory for Experimental Psychology," 6 May 1901.

The request was approved, but not before Senate members registered their opposition. The comments of one such member, a Dr. Mayo, were summarized in the *Cambridge University Reporter*. He said that psychology was already sufficiently endowed and furthermore it was an "abstract science as much as Logic was and had no more need for a Laboratory than Logic had. It was difficult to understand what was meant by Experimental Psychology, ... [and] ... He could get no information as to the character of the experiments contemplated. There seemed a general ignorance in the University as to this which was without parallel in any other science. On all these grounds he was opposed to the recommendation." (Minutes of the General Board of Studies, 23rd May 1901).

In 1903 the Board of Moral Sciences proposed a move to larger quarters in Mill Lane and requested funds for equipment and expenses. "Report of the Special Board for Moral Sciences on a Department of Physiological and Experimental Psychology," 19 February 1903, CUR 28.8, 78. This request was approved, but Dr. Mayo once again registered his opposition. The *Reporter* recorded Mayo's comments as follows:
"He did not admit that the Department of Experimental Psychology had any real existence. He would be glad of any information concerning the department or anything connected with it. It was said that a Lecturer and two Graduates were engaged in researches. He could not understand this, as Psychology was a branch of Philosophy and any researches would be based on pure logic and not require any implements. The mention on the Report of the name of Dr. Haddon made him suspect that a large portion of the premises in Mill Lane would be used for the storage of the anthropological collections." (CUR 28.8, 5 May 1903)

Mayo added that the University's financial crisis had been brought on by repeated grants of this nature. Ibid. In commenting on the proposal James Ward ignored Mayo's remarks and informed the Senate that the grant awarded would only suffice temporarily. He pointed out that the Laboratory had subsisted for more than ten years on the original grant of £50 and that it had suffered as a result. "Outside England," he said, "there was no University even of the third rank which was not better equipped for this subject than Cambridge was today." Ibid.


In this report they noted that over 20 people were using the present crowded quarters and argued that the lack of space made it impossible for them to provide the kind of instruction in Psychology offered by other English Universities; instruction "adapted to the needs of those who intend to devote themselves to teaching or to the study of abnormal mental conditions." Ibid. Furthermore, they pointed out that an excellent university supported laboratory existed at Cambridge's rival institution, Oxford, and that this was presided over by a Cambridge man. (The man was McDougall but this description misrepresented the actual situation). As the coup de grace they noted that funds for construction of the building (£3700) had already been pledged and added that the largest portion (£3000) was contingent upon construction beginning without delay. The syndicate was established and the plans were approved. Construction was begun in 1911. "Report of the Laboratory of Experimental Psychology Syndicate," 2 February 1911, 4 March 1911, CUR 28.8, 95, 97. The laboratory was a three-story wing annexed to a new physiological building being constructed by the Drapers' Company. The plans called for a lecture room, two practical classrooms, a room for animal psychology, a library, 6 research rooms and several offices and workshops. Ibid. The laboratory opened in 1913 under the direction of C. S. Myers. "Report of General Board of Studies on the Appointment of a Director of the Psychological Laboratory," 15 May 1912, CUR 28.8, 102.

68. Stout, who held no college post, was awarded a stipend of £50 per year for three years. Several members of the Senate commented on the inadequacy of this stipend, but Sidgwick argued that a larger amount might jeopardize the chances for establishing the Professorship of Logic

69. Ward had held a college lectureship prior to his appointment to the Knightsbridge Chair. The Chair carried with it a salary of £700 per annum although members of the Board attempted to reduce it to £500. Minutes of the General Board of Studies, 20 May 1896, Min. III.1, 370.5. Sidgwick finally offered to reimburse the University £200 per annum for a period of five years, thus subsidizing the chair in its initial period. His offer was accepted. "Report on Professorship of Mental Philosophy," 10 June 1896 Min. III.1, 372.5.

70. The history of this Lectureship is somewhat convoluted. As mentioned above, Michael Foster initially pressed for its establishment. In February of 1897 the Moral Sciences Board in conjunction with the Board for Biology and Geology recommended the establishment of a lectureship in Physiology of the Senses. This proposal was defeated in March of that year but then passed in early May. On May 19th, 1897 the Moral Sciences Board proposed the establishment of a University Lectureship in Physiological and Experimental Psychology. This proposal was approved in November 1897 and W. H. Rivers was appointed to the lectureship in Physiology of the Senses and Experimental Psychology with a stipend of £150. In 1899, when Rivers returned from the Torres Straits Expedition, the stipend was increased to £150 per annum. Minutes of the General Board of Studies, 1 March 1899, Min. III.1, 445.12. Hearnshaw claims that Rivers held a lectureship in Physiology of the Senses from 1893. (Hearnshaw, British Psychology, p. 172). If so it was not a University lectureship as this was not established until 1897.

71. Rivers appears to have regarded his position as a dual post. In 1907 he resigned the Experimental Psychology portion of his lectureship, but retained the title Lecturer in Physiology of the Senses. This permitted Meyers to obtain his post as Lecturer in Experimental Psychology. The information about Hicks and Burt comes from Bartlett "Cambridge, England," p. 107, but I have not been able to confirm it directly. These two could only have been providing part-time assistance as Hicks held the chair of Moral Philosophy at University College and Burt was employed by the London Country Council as an educational psychologist during this period.

72. See Introduction to Part III, section entitled "Cambridge University" above.

58. Only the Ethics paper was compulsory for all. Due to Marshall's efforts, students taking Advanced Political Economy as a special subject could substitute a paper on Political Philosophy for a paper on Metaphysics. Marshall also requested that these students be permitted to substitute statistics for the logic and methodology on Part I of the examination, but this request was not approved.
74. This part of the examination shows a marked shift away from the historical work on the 1883 scheme.

75. There was an enlarged description of voluntary action including the subtopics:

"its determining causes or occasions, and their operation: Pleasure, pain, desire, aversion and their varieties: will and practical reason: conscience, moral sentiments, moral perception or judgment, moral reasoning, conflict of motives, deliberation, self-control, the origins of the moral faculty." (Students Guide to Cambridge, 1893, p. 4.)

76. Ibid. The remarks on the schedule of subjects noted the "bewildering divergence of opinion at least as regards details" and recommended that the student begin with Hoffding's Outlines or Dewey's Psychology, move onto Sully and Bain and refer to Ward's "Psychology" when "he feels the need of getting his psychological knowledge into more scientific form." Ibid., p. 24. This advice was probably prepared by Ward.

A number of German works (Volkmann, Lotze, Drobisch and Waitz) were recommended for advanced students. James' Principles of Psychology was recommended to acquaint the student with "existing doctrine and current controversies" while Wundt's Grundzüge der physiologischen Psychologie was recommended for experimental psychology. Foster's Textbook of Physiology was recommended for information on the nervous system. Works by Janet and Ribot were recommended for mental pathology. Finally, mention was made of works in comparative psychology (Romanes and Lloyd Morgan) and on the origins of language and the problem of language and thought (Max Müller and Steinthal) although some reservations were expressed about the quality of such work. Ibid., pp. 25-27.

77. Students frequently took Part I of the Moral Sciences Tripos but Part II of some other tripos which offered a greater array of fellowships or prizes. Although the numbers declined, two of Cambridge's most distinguished graduates--G. E. Moore and Bertrand Russell--took the Moral Sciences Tripos during this period. Each earned special distinctions in the advanced topic, History of Philosophy.

78. The Board reached conclusion that the preparation required for Part I was "too limited and incomplete, considering the large number of students who do not go on to Part II." "Report of the Special Board for Moral Science on the Regulations for the Moral Sciences Tripos," 10 May 1897 CUR 28.8, 50. The statement is ambiguous as to whether the Board was interested in broadening the philosophical education of those only taking Part I, or was employing the study of ethics to ensnare more students for Part II of the exam.

79. The revisions to the philosophical portion represented a desire to include more history in the second part of the exam, a move that was also a return to the 1883 priorities. The Board justified the
reduction of the advanced psychology and logic papers from two to one on
the grounds that important portions of these topics were covered under
the metaphysical and moral philosophy papers. Ibid.

80. The student was a Charles Masterman of Christ's College who
later distinguished himself as a liberal journalist and politician.


82. According to Ward, in 1882 the Moral Sciences Board had agreed
to apply to the University for money to be spent on apparatus for
psychophysical experiments. This request was withdrawn in favor of a
request to establish a Readership in Political Economy. "Discussion on
the Report of the Special Board for Moral Science, 19 February 1903,"
CUR 28.8, 74. I do not know what became of this latter request but it
seems to have been rendered unnecessary by the establishment of the
Lectureship in Moral Science to which Keynes was appointed in 1884.
Sidgwick described some of the possible reasons for the preference given
to political economy in "Philosophy at Cambridge," Mind 1 (1876):245

83. Gerald Geison has described how Cambridge's decentralized
structure presented problems for the development of physiology in
Michael Foster and the Cambridge School of Physiology. Similar problems
affected the fortunes of psychology. The Moral Sciences Board commanded
few funds; most monies came from the individual colleges and they had to
be carefully supplemented with the limited funding from the University.
Furthermore, the Board represented a variety of incipient disciplines and
could not be expected to actively crusade on behalf of them all.
From the reports it appears that much thought went into the question of
which requests were to be made.

84. "Report of the Special Board for Moral Sciences on the
establishment of a Board of Psychological Studies," 15 November 1919.
CUR 28.8, 138.

In 1919 the Board's membership included James Ward, W. R. Sorley,
G. E. Moore, W. E. Johnson, G. Dawes Hicks, C. D. Broad and F.
C. Bartlett. Their report requested the establishment of a Board of
Psychological studies to enable Cambridge to retain its "first position
in this country as a centre of psychological study and research."
(Ibid.) The new board would be empowered to grant the Ph.D. degree but
not the D.Sc. or D.Litt. degrees.

Board members asserted that the study of psychology had lately been
given a great impetus "partly owing to war and after-war conditions."
They cited the growth of "the psychological study of mental disorders"
and "the application of psychology to problems of education and
industry." In addition, they pointed out that non-applied branches of
psychology had been developed or advanced. These included
physiological, social, religious and aesthetic branches of psychology as
well as the new "specialized science of animal behavior." They concluded
that:

"Psychology is, therefore, now in the position of a science possessing a number of definitely technical branches, and, in any centre of learning where it is pursued, requires for its adequate supervision a committee on which each branch may have expert representation." (ibid.)

The report also pointed out that a new class of students was being drawn to psychological study and research. These students were trained in some other branch of natural science, in medicine or in economics and were not particularly interested in psychology in relation to "logic, ethics and metaphysics" the subjects with which it had been allied in the Moral Sciences Tripos. Instead they were interested in psychology "in connection with sciences such as physics and physiology and with those biological science with which its modern developments have brought psychology into close relation." (ibid.)

While the authors of this report acknowledged that psychology was a multidisciplinary subject, there was still apparent tension between the various branches of this discipline. In this thesis I have argued that British psychology developed primarily as a theoretical and an applied discipline. In various ways I have tried to show that nineteenth century claims that psychology was a natural or biological science involved rhetorical plays rather than factual claims. I have also argued that the fact that various psychologists did claim that psychology was a science, created tension among their self-proclaimed aims. In the 1919 document we see hints of the same tensions being revived. On the one hand, the authors stated that the recent growth in psychology was largely due to movements with a practical bearing. On the other hand, they assert that the function of the new Board will be to bring psychology "into more intimate association with natural and biological sciences."

85. While some objections were offered, in general the comments favored the establishment of the new Board on the grounds that psychological instruction was involved in so many fields (including economics, education, architecture and military science) that a special Board was required to coordinate such study. "Discussion on the Report dated 15 November 1919." 19 February 1920, CUR 28.8, 138.6.

86. "Annual Reports of the Teacher Training Syndicate," CUR 58. These files are in the University Library, University of Cambridge. One of the factors responsible for the increase in numbers was the establishment of the Cambridge Training College for Women in 1885 under E. P. Hughes. See Rich, The Training of Teachers, pp. 262-63.


88. In the first place although the Cambridge program grew, it did not grow as rapidly as the teaching profession. Certificates of teacher training were not required until well into the twentieth century. While 44% of those teaching in 1870 had obtained certificates only 42% of
those teaching in 1895 were certified, despite the rise of teacher training institutes.

A more serious problem was whether the students found the theory lectures relevant to their prospective profession. There is some evidence that they simply found these texts and lectures bewildering. M. Vivian Hughes in A London Girlhood in the Eighties, wrote that although the Sully text had been highly recommended by her teacher Sophie Bryant, she did not find much of value for the practice of teaching in it. The same author also described attending Ward's lectures at Cambridge. She said that she feverishly tried to write everything down in the hope that she might be able to comprehend it at a leisurely pace. She added that she never did go back to her notes. But she did go on to become an instructor in a teacher-training institute established at Bedford College in the 1890's. There she emphasized practice over theory. See A London Home in the Nineties (Oxford: Oxford University Press, 1937), especially chap. 2.

90. Ibid, pp. 1-3.
91. See, for example, A. Caldecott "The Proposed Day Training College in Cambridge" dated March 4, 1891. CUR 58/29. Caldecott suggested that the scheme presented dangers to the University including potentially lowering the quality of its degrees and opening it to further Government inspection and control. Possible disadvantages to the students were raised. These included concern over whether such men could handle a university curriculum and, if they could, whether they might not "yearn to leave their Training College, and aim at an ordinary college career, and even at employment in higher education?" Ibid.

Finally, he suggested that their special status, in being non-collegiate members of the University and in being exempted from certain requirements might not be "wholesome for the student's self-respect." Ibid. In short, the concerns expressed largely represent the elitist values of many at Cambridge.

92. Ibid. In another portion of the report he described these non-University affiliated Training Colleges as having "a position of unquestioned honour and credit, because they do not pretend to be anything else than what they really are." Ibid.

93. These topics included: observation and the training of the senses, the will and how to train it, habit and character, authority and discipline, rewards and punishment, and the conduct of the understanding. University of London Calendar 1893, pp. 191-92.

94. University of London Calendar 1893, p. 283. James Sully and William Knight were the examiners for this year. If such questions were representative of those asked at Cambridge, it is not surprising that the examiners found the answers mechanical.
95. The program showed some signs of growth in the early nineties, but enrollments declined again after 1894. Rich mentions that a short-lived day training college was established at University College in 1892 but I have not been able to verify this.

80. Beatrice Edgell took the examination in 1896 either shortly before or just after spending a year under Kulpe at Wurzburg. Why she took the exam is not clear, but she may have hoped to obtain employment as an elementary school teacher. This was not necessary as the following year she was appointed to teach philosophy and psychology at Bedford College. Edgell was the author of Memory (1927) and the first woman president of the British Psychological Association.


98. The figures for England and Germany come from Fritz Ringer, Education and Society in Modern Europe (Bloomington: Indiana University Press, 1979), pp. 62, 226-31. The figure for England is an estimate based upon Cambridge and Oxford attendance of 1,762 and Civic University attendance of 1,800 and an estimated University of London attendance of 2,715. The University of London figure is based on candidates for matriculation and degrees in the year 1890, excluding law and medicine. University of London Calendar, 1894-95. The figures for the United States come from Alexandra Oleson and John Voss, eds. The Organization of Knowledge in Modern America 1860-1920 (Baltimore: Johns Hopkins University Press, 1979), p. xii.


100. The predominance of psychology's "practical functions" in the nineties probably created bars against the acceptance in the more traditional universities such as Cambridge and Oxford. Ironically, while psychology was saved by its practical applications, its institutional development in these universities was hindered by these same factors.
CHAPTER 9

BRITISH PSYCHOLOGY IN THE NINETIES:
JAMES SULLY AND JAMES WARD

I. METHODS AND THEORY

Introduction

James Sully and James Ward were both born in 1843 and their careers span the last third of the nineteenth century. As L. S. Hearnshaw has noted, their career paths were remarkably similar. Each had a father whose business failed before the son was able to establish themselves in life. Each trained for the ministry but after experiencing religious doubts turned to psychology. Each travelled to Germany and studied at Gottingen and Berlin. Each was late in establishing themselves academically. Early in their academic careers each found employment giving lectures on psychology to teachers-in-training. And each lived through, and participated in, the reaction against Utilitarian-Associationist thought.

Despite these similarities there were significant differences between the two. While Ward was busy with the duties of a Cambridge fellow, Sully was attempting to make a living writing for journals and producing textbooks. Sully was more sociable than Ward and was active in many London associations. Despite this greater sociability, or perhaps due to it, Ward played a greater role in establishing psychology.
at Cambridge, than did Sully in London.

There were also important intellectual differences between the two. Although both had studied in German, Ward more thoroughly absorbed conceptions which were used to undermine the Utilitarian-Associationist view. As Hearnshaw noted, to a large degree Sully remained faithful to this tradition. His views are well worth examining since his departures from the Utilitarian-Associationist view reveal the impact of the critique levelled by Ward and others in the seventies and eighties. By the same token, it will be valuable to examine Ward's positive doctrines in a somewhat more systematic fashion. In contrast to Hearnshaw I will argue that Ward's doctrines had a positive, if limited, impact upon psychology and that his ideas continued to influence British psychologists into the twentieth century.

In the remainder of this chapter, I will be contrasting the views of Ward and Sully on a number of central issues, with one another, and with views propounded by Bain. My first aim will be to demonstrate just how far psychological theory had advanced from the theories of Bain. However, in examining the theories of Sully and Ward we will find some continuities with the earlier tradition. My second aim will be to discover what residues of the Utilitarian-Associationist tradition continued to shape their conception of psychology. Finally, in describing the views of Sully and Ward, I will be depicting the state-of-the-art in theoretical psychology during the 1890's.
Fundamental Theoretical Issues

In comparing and contrasting the ideas of Bain, Ward and Sully it will be useful to focus on a number of separate issues, keeping in mind that these issues overlap. The issues I have selected as points of reference are those to which the Utilitarian-Associationist tradition contributed a distinctive point of view. These issues include: (1) the relations conceived between philosophy and psychology; (2) the view held of the nature of science and the range of psychological method; views held concerning (3) the association of ideas and (4) the nature of will, self and attention and finally their accounts of (5) morality and (6) education. The first four of these issues will be discussed in this chapter, the remaining two in Chapter 10. In focusing upon these issues, I will be able to measure the distance between mid-nineteenth century thought and late nineteenth century thought as well as to reach some conclusions concerning inherent problems of the Utilitarian-Associationist tradition.

Relation between Philosophy and Psychology

Bain

The core of the Utilitarian-Associationist program was the precept that associationist psychology could and should provide the foundation for empiricist epistemology, for ethics and for a program of social reform. James Mill's aim in elaborating an associationist account of mind was to place philosophy and social reform upon a scientific basis.
By mid-century, when Alexander Bain was formulating his system, positivism had helped to shift the emphasis in the alliance between philosophy and psychology. While Bain still insisted that philosophy must draw upon the results of psychology, he also argued that many so-called philosophical problems were simply scientific problems. As such, they could only be properly investigated by psychology. For example, the problem of free will was subsumed under the study of voluntary power; the problem of the moral sense was replaced by the investigation of the experiential origins of conscience and the problem of disinterested behavior—a particularly acute problem for Utilitarian thinkers—was resolved by an experiential account of the development of sympathy.\(^5\)

Several epistemological problems were treated in the same manner. The problem of necessary truth was "solved" by Bain's experiential account of belief. Bain also attempted to solve problems associated with a copy theory of knowledge by physiological sleight-of-hand; that is, by employing his doctrine of identical seats for impressions and ideas.\(^6\)

In short, Bain extended the Utilitarian-Associationist precept that philosophy must rest upon psychology. In Bain's system many philosophical problems became scientific—that is, psychological—problems.

As we have seen, Bain was not completely unaware of the changes in the philosophical climate which took place in the seventies and eighties. In the late eighties he even acknowledged the logical
distinction between psychological and philosophical problems. /7/ Nevertheless, he felt that this had little impact upon his own position because he had redefined philosophical problems as psychological ones, rather than asserting that psychological investigation was the method to be followed in philosophy. A subtle distinction, to be sure, but one which served to clear Bain's own conscience.

In Utilitarian-Associationist thought psychology was also to provide the foundation for social reform, particularly the reform of the legal system and education. By mid-century this social reform was already underway, but Bain continued to assert that psychology could and should provide the basis of practical disciplines. He maintained that education, aesthetics, ethics, politics, law and sociology, among others, were "filial dependents," or applied branches, of psychology. /8/ To service these practical disciplines, particularly the discipline of education, psychological theory must give particular emphasis to higher mental processes such as memory, reasoning and imagination and to questions concerning the development of will and character.

Sully

Sully's position on the relation between philosophy and psychology clearly shows the impact of German thought, while also displaying a marked tendency to reassert the traditional view. In the first place, Sully adopted the Kantian distinction between the genesis and the validity of an idea. Early in his career he stated quite categorically
that psychology can have nothing to say concerning the legitimacy or validity of a mental act./9/ He noted also that associationists had been guilty of making this error, that is, of passing from "the history of a conscious state to its objective meaning."/10/

Despite insisting upon the importance of this distinction, Sully somewhat undermined its force by maintaining that psychological investigation must precede the philosophical discussion of certain problems. He wrote:

a psychological study of the process of cognition is a necessary preliminary to the discussion of the problems of the nature and the criterion of true cognition./11/ [underlining mine]

In making this claim, Sully was asserting his fundamental allegiance to the approach taken by the Utilitarian-Associationist thinkers. Sully also followed Bain in treating the problems of free will, the moral sense and disinterested action as psychological, not philosophical, problems.

In addition to citing the logical bases for a distinction between psychology and philosophy, Sully differentiated between the two disciplines in terms of methods. As a positive science, Sully wrote, psychology could only investigate observable facts, or "phenomena," and attempt to formulate their laws. Psychology, unlike philosophy, can have nothing to say concerning "the ultimate nature of spiritual activity, the substance of mind or the immortality of the soul."/12/ Psychology, like other sciences, is restricted to phenomena. Nevertheless, psychology still retained its propaedeutic function in this alliance with science. Sully, sounding quite like Mill and other
empiricists before him, wrote:

it is only after the human mind, as one great factor in all knowledge, has been accurately analyzed, and its laws precisely formulated, that any other science receives a definite basis . . . . the more accurate we make our study of the psychological conditions of thought, the more exact will be our logical theories and our scientific methods./13/

Sully also upheld the Utilitarian-Associationist tradition by emphasizing the moral and practical bearings of psychology. "Psychology," he wrote, "will furnish the necessary foundation for those systems of rules by which we may direct and control mental activity." Several practical sciences, including education, jurisprudence and political government, must be based upon psychology because these sciences aim at "controlling or otherwise influencing other minds."/14/

Despite the fact that Sully conceded that there was a logical distinction between the questions suitable for psychological treatment and those suitable for philosophical treatment, he continued to emphasize psychology's propaedeutic role, vis-à-vis philosophy and practical disciplines. Furthermore, Sully, like Bain before him, argued that psychology can provide the basis for scientific method.

Ward

James Ward was more consistent than Sully in adhering to the demarcation between philosophy and psychology. However, we will see that at points his thought is continuous with the Utilitarian-Associationist tradition and that his later work can be interpreted as the extension of psychologism into new domains.
Ward, as we have seen, was one of the individuals most responsible for acquainting British thinkers with the Kantian distinction between the genesis and the validity of knowledge, that is, the distinction between psychological and philosophical accounts. Ward wrote:

The world has come to see that philosophers, as such, make bad psychologists; and also, for the matter of that, mere psychologists bad philosophers: the one lacks the scientific eye for facts generally, the other the speculator's feeling for improving ideas./15/

Ward insisted upon demarcating psychology and philosophy but not simply for logical reasons. Ward argued that the philosophers who appealed to psychology as the foundation of their epistemology, were far less empirical than they claimed to be. Frequently, he charged, they simply embedded those epistemological assumptions which they wished to justify within psychology. Ward claimed that this self-serving strategem yielded a distorted view of mind and a faulty epistemology. Such assumptions as "knowledge begins in particulars," "particular ideas are copies of things," and "reasoning mimics the rules of formal logic," were among those singled out for criticism. It is clear that Ward had in mind the individuals that make up what I have called the Utilitarian-Associationist tradition./16/

In calling for a separation of philosophy and psychology, Ward was primarily interested in removing certain philosophical assumptions from psychological discourse. Moreover, he did not call for an absolute separation between the two disciplines. Like Sully, he did suggest that philosophy might draw upon psychology for the "first elaboration of its material."/17/ Unlike Sully, he did not insist upon the necessity of this approach. Nor did he imply that this approach is any guarantor of
certainty concerning the human mind. He simply stated that there was an advantage to beginning with "knowledge, or what purports to be knowledge, already in some measure formulated and systematized."/18/ In short, pragmatic considerations justify a tentative appeal to psychology on the part of philosophers.

In another respect, Ward deviated from the Utilitarian-Associationist tradition. Unlike Bain and Sully, he denied that ethical problems—such as the freedom of the will and the nature of conscience—could be reduced to psychological problems. He regarded such reductionism as one of the worst outgrowths of naturalistic thinking. Science, he argued, could never adequately deal with ethical questions for they are inherently questions of purpose and value, and it is precisely these characteristics that are missing from the scientific realm./19/

Ward's opposition to naturalistic thinking appears to clash with his stated view that psychology was the most fundamental of the "moral sciences" and, therefore, is of value for practical disciplines such as education, jurisprudence and economics./20/ Psychology as a "positive science" can not adequately deal with questions of purpose and value, yet these dimensions are inherently a part of these practical sciences.

I regard the statement of this problem as one of Ward's major contributions, for the problem lies at the core of the Utilitarian-Associationist program. Bentham, Mill, Bain and even Sully had argued that psychology could be scientific and, at the same time, have practical value. However, to be scientific, for these thinkers,
meant eschewing questions of value and without discussion of values, or ends, how is it possible to offer guidance in normative matters? How can a deterministic theory of conduct, inform our notions of moral responsibility? How can a descriptive account of the development of mind, inform educational practice without some prior notion of what we wish to achieve through education?

One solution to this problem, one which Ward even suggested at times, was to state that the sciences must work hand-in-hand with philosophical enterprises in these matters. Philosophical disciplines, such as ethics, provide an account of the ends to be obtained, while psychology can tell us how to obtain them. The philosophical disciplines are concerned with ends, while the scientific concern themselves with means./21/

A more radical solution is to reject the notion of value-free science. This was the solution later explicitly adopted by Ward for the moral sciences and biology. He argued that the notions of end, purpose and value are indispensible to the moral and biological sciences, and that by employing such notions we may be able to "resolve the antinomy that otherwise arises between the mechanical and the moral."/22/ In other words, a revision of our conception of science—-and Ward implied that such revision might also be appropriate for the physical sciences—is necessary for us to obtain a more adequate view of the world we live and act in./23/
Before turning in a more detailed fashion to these individuals' views on the nature of science, I must point out that Ward, later in his career, was also criticized for being overly psychologicist. In criticizing those who employed psychology for epistemological purposes, Ward argued that psychology was more closely related to metaphysics than to epistemology. He further argued that psychology must be taken into account in order to decide between, monistic or monadistic theories of the universe, whether idealistic or realistic, and the dualism of ordinary common sense.24/ 

Ward later followed such an approach in the development of a spiritualistic metaphysics. This "psychologicist" approach drew fire from critics. It is somewhat ironic that one of the individuals most responsible for exposing psychologism in Britain should later be found guilty of the same charge.

While there was a shift away from the view that psychology must provide the foundation for philosophy, the idea that psychology should inform the practical disciplines remained. This latter view was conceptually problematic, for how can a value-free science provide guidance in normative matters. Despite such conceptual problems, it was psychology's practical applications which enabled it to survive within British institutions.
Like each of the Mills before him, Bain asserted that the study of the human mind could be rendered scientific by adopting the methods of the empirical sciences. Because he maintained that all knowledge was drawn from particular sense experience, he stressed the value of careful observation and methodical rules of induction such as had been provided by John Stuart Mill. Bain's praise of Mill as "a preacher of the highest faith of the human mind," bordered on religious fervour. \(^{25}\)

In asserting that psychology must adopt the methods of "modern positive science," Bain was concurring with the view that determinism extended to the mental realm, and that objective methods must be employed in psychology. On the other hand, he maintained that analytic introspection must be the primary tool of the psychologist. Bain attempted to circumvent the problems connected with the subjectivity of this approach by stressing the need for careful and systematic observation and by maintaining that every psychical process has a physical correlate.

With regard to the first suggestion, Bain insisted that the introspectionist must take certain precautions to maximize the objectivity of his results. He wrote:

That observations should be made with care, that they should be noted down carefully on the instant, that they should be repeated under various circumstances, that different observers should compare their results—is all a matter of course if we aspire to work after the manner of science. \(^{26}\)

In addition to the suggestions it contains for improving the technique of introspection, this quotation indicates that Bain regarded
psychology as aspiring to, rather than as having attained, the status of a positive science. Bain argued that psychology should emulate the biological sciences and that it could best do so by adopting the "Natural History" method. According to proponents of this method, important natural relations among facts can be revealed through systematic classification. Although Bain employed this method chiefly in his treatment of the senses and the emotions, its influence can be found throughout his work. There are good reasons for regarding Bain as "the Linnaeus of psychology rather than the Newton or the Cavendish."/27/

Bain's psychophysical parallelism, combined with his stated goal of "making psychology as physiological as possible," has earned him much respect from twentieth century psychologists to whom scientific psychology equals physiological psychology./28/ Moreover, if it were possible to identify objective correlates for each of the subjective processes examined, Bain would have been able to circumvent the problem of subjectivity engendered by his claim that introspection is the primary tool of psychologists. However, as I have already shown, there were significant limitations to Bain's program, quite apart from the questions of its success. Early in his career Bain asserted that the investigation of the intellect—the formulation of the laws of association—must proceed entirely upon subjective lines. While objective methods—the observation of other minds for example—may aid in enhancing our knowledge, the final arbiter is always the introspective examination of our own mind./29/
More damaging to the views of those who regard Bain as the first physiological psychologist is the statement, made later in his career, that the identification of physiological correlates for subjective states is not at all necessary. Bain wrote that while such correlates, real or hypothetical, could possibly help us to arrive at a clearer view of psychical phenomena, "it is a matter of choice whether or not we care to have these adduced."/30/ Not only does this contradict the standard account of Bain's position, it reveals that the objectification of psychological research was not to be achieved by physiology.

Bain's views on the nature of scientific psychology were programmatic at best. That he may have had doubts about the scientific potentiality of psychology is indicated in the prospectus issued for the new journal Quarterly Review of Mental Science, the journal that finally appeared as Mind. One of the main goals of the new journal was reaching a decision upon the status of psychology as a science./31/ A closer examination of Bain's writing makes it clear that he was rather tentative about the scientific character of psychology.

Bain was clear about his belief that psychology could offer something to the sciences. He insisted that scientific practice must be systematized so as to minimize the harmful effects of the mind's natural limitations. We should "express each fact in as definite a language as possible; [and] . . . . Express each fact under as many forms as possible," for precise language and multiple examples aid us in forming clear conceptions of facts./32/ We should "give separate expression and attention to every part into which a fact can be divided" for such
analysis enables us to maximize our intellectual power in scientific investigation. Finally, we should "extract from every fact all the conclusions that are necessarily bound up with it" that is, we should practice economy of scientific investigation. /33/

A further aspect of Bain's psychology of science is of interest here. Bain argued that analogical reasoning, or "the bringing together of remote things through the attraction of sameness...is the right-hand of a scientific inquirer." /34/ He also insisted that such an approach is of particular value for psychology since "human actions, feelings and thoughts are often so concealed in their workings that they cannot be represented without the assistance of material objects used as comparisons." /35/

Here we get a different perspective on Bain's "physiologizing" of psychology, one more consistent with his later statements. Physical concomitants have an analogical, rather than a factual status. Their value lies in helping us to think more clearly about the psychic realm. Again, the "natural limitations" of the mind play a role here. In Education as a Science, Bain argued that teachers should take into account the general rule that the child's mind proceeds from the corporal to the incorporeal./36/ This rule apparently also applies to the minds of scientists.

It is also clear that Bain followed this advice in his own work. He employed this analogical technique in his discussions of nerve force, his organic account of memory and in his view that the senses were the key to the intellect./37/ These rhetorical devices sometimes took on a
life of their own, both in Bain's work and in the work of Bain's commentators, and such reification of analogies is not without its dangers. Despite such problems, Bain's recognition of the role analogical reasoning can play in scientific psychology suggests that he was groping his way towards a more sophisticated version of inductivism.

Sully

Sully, like Bain, regarded psychology as a positive phenomenal science. While psychology investigated the human mind, it restricted its view to the mind qua phenomena. He insisted that the study of psychical phenomena, in and of themselves, was the primary task of psychology. For this reason he, like Bain, asserted that introspection was the primary tool of psychologists. Unlike Bain, Sully took pains to point out that the employment of introspection makes psychological method different from that followed in the natural sciences. However it is a difference of degree, rather than a difference in kind. In principle, he argued, it is possible to avoid most of the dangers associated with that method. In fact, he pointed out, there may be certain scientific advantages to the technique, since it minimizes the likelihood of certain kinds of errors—the errors which arise from inference. Finally, he agreed with Bain that objective methods could and should be employed to augment the view of mind gained through introspection.

According to Sully, psychology, like the physical sciences, has to collect and arrange its facts, then seek to explain them by help of general principles. These goals are attained by employing, what
Sully called, the methods of analysis and synthesis. The method of analysis is reminiscent of the atomistic reductionism of the Mill's and Bain; it involves resolving "the complex facts of our mental into their elements and ... [showing with] the help of properly psychological laws, how these elements group themselves into the variety of complex forms which we find in the human consciousness."/41/ It must it must be noted that Sully did not lay the same stress upon the value of classification as did Bain./42/

In yet another respect, Sully deviated from the views of Bain. Sully insisted that analytical inquiry must be supplemented by a synthesis which involves an "historical unfolding of the course of psychical development."/43/ Since Sully had been influenced by biological theories of development, he had a more sophisticated view of this process of mental formation than had Bain. According to Bain, our mental development consists of the combination and recombination of mental elements via the laws of association. Sully, on the other hand wrote:

the process of psychical formation, being one of organic change, must differ from a mechanical combination of parts. It is essentially a process of development in which elements are elaborated into more or less new forms determined by the organism, and in which consequently their individual characteristics become disguised./44/

In contrast with Bain, who sought to account for all complex states as the product of association, Sully wrote:

The ultimate problem of psychology is, indeed, to explain all the higher and more complex mental states as products of development. Hence the most important class of laws for the psychologist are the laws of mental development./45/
Even if Sully's view represented merely a shift in emphasis, it would be a very important shift. But it was more than that. Although Sully admitted that the laws of association are laws of mental development, or mental elaboration, he denied that they were the only such laws./46/ Moreover, Sully's conception of development was decidedly different from Bain's view of the growth of the mind. He wrote:

intellectual development may be described . . . as a progressive double process of separation and combination with the result of an emergence of more and more complex or highly elaborated products./47/

There are additional complexities to be taken into account. Development is not just "a simple succession of unlike phases" because the earlier phases continue to advance after the later ones have been added. In addition, "the development of the higher phases of intellect reacts on the lower phases" so that percepts are overlaid with images and concepts./48/ It is clear that Sully had a much more complex view of mental development than had Bain./49/

Although Sully followed Bain in asserting that physiology can be of assistance to psychology, he quite clearly indicated that there were limitations to the aid it could offer. Like Bain, Sully argued that the reference to nervous conditions could augment the results gained by psychological analysis. However, he warned that psychical and physical phenomena are essentially disparate and stated that "we cannot in any case derive a fact of consciousness from the nervous actions which are its physical substratum."/50/ Furthermore, the more complex the mental process, the less aid we can expect from physiology.
Sully asserted, contrary to what was implied in Bain's work, that the investigation of thought and volition could receive very little assistance from physiology./51/

While Sully still maintained that psychologists should employ such results of physiology as are relevant, he regarded this approach as rather more limited than had Bain in his earlier writings. In fact, Sully gave rather more weight to the need for physiologists to employ the results of psychological analysis in their research./52/ On the other hand, Sully was more optimistic about the scientific potential of experimentation and the use of statistical methods in psychology than was Bain./53/

As I have already mentioned, Sully argued that psychology could be of value in refining our notions of scientific method. That is, he argued, there could be a psychology of discovery./54/ Unlike Bain, he did not elaborate upon this point. Nor did he devote much attention to the role of analogical reasoning in scientific discovery. This is not too surprising, for Bain's account rested upon the law of association by similarity and Sully denied that this was a distinct law./55/

While Sully continued to hold that psychology is a positive phenomenal science, his view of appropriate methods differed somewhat from Bain's. He downplayed the value of physiological methods but was optimistic about the potential contributors of experimental and statistical methods. His most significant departure lay in the stress he placed upon the developmental approach to mental life. We will see this emphasis elaborated in the work of James Ward.
Ward departed radically from the view of science accepted by Bain and Sully and his view of psychology reflected this shift. Both Bain and Sully had argued that psychology was a phenomenal science, differentiated from other sciences by virtue of its subject matter—which was the subjective phenomena of mind. Ward denied that the distinction between mental phenomena and material phenomena could provide a basis for differentiating psychology from other sciences. These terms, he wrote, implied a greater and a lesser difference than really exists. Calling certain phenomena mental, and others material, obscures the fact that *qua* phenomena, they each denote that which is presented to an individual mind.\(^56\) Referring to each type of manifestation as a phenomena overlooks important differences in the mental and the material point of view. In examining his "phenomena," the physicist abstracts from the actual conditions of presentation; that is, he ignores the facts of attention and feeling that accompany presentation. The psychologist, on the other hand, cannot ignore these factors, for his interest is in individual, rather than universal experience.\(^57\) The difference between psychologist and physical scientist lies in their point of view, not in any intrinsic difference in their subject matter.

It is important to see the larger significance of what Ward was doing here. In denying that there was any intrinsic difference between material and mental phenomena, Ward was rejecting the primary/secondary quality distinction which underlay science since the days of
Galileo./58 Nevertheless he denied that he was sacrificing objectivity in so doing. Although the standpoint of psychology was individualistic, while that of the "object-sciences" was universalistic, both were objective "in the sense of being true for all, consisting of what Kant would call judgments of experience."/59/

Ward also stated his accord with the psychological standpoint of the English empiricists—Locke, Berkeley and Hume. However, he denied that psychology must pledge itself solely to the introspective method. He wrote:

There is nothing to hinder the psychologist from employing materials furnished by his observations of other men, of infants, of the lower animals, or of the insane; nothing to hinder him taking counsel with the philologist or even the physiologist, provided always he can show the psychological bearings of those facts which are not directly psychological./60/

The "psychological bearing" of such facts was to be made clear by showing how they related to an individual consciousness. Here we see another departure from the Utilitarian-Associationist account of psychology. Since the distinctive standpoint of psychology was that it regarded experience from the viewpoint of the conscious willing subject, Ward held that any adequate psychological theory must postulate the subject as a central construct./61/ Of course, such a postulation of an ego or soul appeared to violate the central tenets of the Utilitarian-Associationist tradition, and this, no doubt, accounted for Bain's objections to the construct./62/ While Ward denied that this construct necessarily carried any metaphysical implications, he did not hide the fact that it was a teleological construct which must be at odds with any mechanistic view of science. In fact, he welcomed such a
confrontation because he felt mechanistic science had distorted mind. He wrote:

It is not so long since the world was shocked at Lange's mot about a psychology without a soul, but the "modern" psychology is a psychology without even consciousness. "Content of consciousness" as much as you like, but consciousness itself, consciousness as activity, is not our affair; we leave that to metaphysics, say our "modern" teachers./63/

Although Ward argued that psychology must employ the common sense concept of mind as its central construct, he did not deny that objective correlates, such as states of the nervous system, could be adduced. But there were limits to this approach, as Ward made clear in an early essay on the relation of physiology to psychology./64/ There he pointed out some of the dangers in the approach of psychophysical parallelism and the limitations of the psychophysical methods./65/ He argued, like Bain and Sully, that the psychologist must rely upon introspection to establish correspondences. Furthermore, while it is possible to establish such correspondences in the case of simple experience, we can not identify them for our more important experiences—the higher intellectual, aesthetic and moral states./66/ Furthermore, he noted that what might be "in principle" possible, has not come close to being realized. Ward wrote:

the utmost progress of the so-called physiological psychology accomplishes literally nothing towards identifying psycho-physical and physical objects./67/

Ward did admit that psycho-physicists, such as Weber and Fechner, have been somewhat more successful at relating physiological phenomena and psychical intensities, but charged that this work was also fraught with ambiguities./68/ Nevertheless, he admitted that "we may imagine a mathematician calculating the physical equivalent of our attention from
time time . . . . [and telling us] that in foot-pounds or heat-units its value is so and so."/69/ He insisted that this fact should not shock us. He wrote:

it behooves us perhaps to remark how little this means after all . . . . [for] there is everywhere aw ide [sic] difference between the form which is significant and the matter of which it is composed; . . . . between the face of nature, which is also the reality of nature--so far as reality stands for meaning and worth--and the decompositions, whether logical or material, which aid our curiosity when we try to press beyond . . . . and a chill disappointment is sure to seize us if we imagine that the reality is what we have reached by analysis and dissection instead of being what we left behind./70/

The solace Ward offered to those disturbed by the spectres of modern science rests upon a distinction between two realms of discourse, realms that he later called the world of science and the world of history./71/ This distinction, which was fairly common among neo-Kantians, enabled many thinkers to advocate the methods of modern mechanistic science (in the phenomenal realm), without having their sense of moral security threatened./72/ At this early stage in his career, Ward appeared satisfied with this solution. Only later in his career did he insist upon the need for bridging these two realms, whereupon he reached the conclusion that to do so it was necessary to reject the presuppositions of mechanistic science.

I raise these issues because, too often, Ward's critique of the physiological approach in psychology is regarded as anti-scientific./73/ Yet his criticisms of this approach stem from a period in which he had no real need to be "anti-scientific"--the world of science had no bearing on questions of worth and value.
A closer look at Ward’s later criticisms of the physiological approach yields the same conclusion. Ward conceded that psychical and physical phenomenon could be correlated, although this possibility had a different metaphysical significance for him than it had for Bain. Ward simply insisted that it was premature to attempt such a correlation. Neither physiological, nor psychological science had been far enough developed to make this a worthwhile enterprise. Ward wrote:

When psychologists as such are sure of their facts and neurologists in like manner sure of theirs, we may expect a great advance of knowledge from careful endeavours to correlate the two. A hopeful beginning has indeed already been made; but meanwhile the most disastrous confusion has befallen the more difficult inquiry through plausible but hasty interpretations of unverified physiological hypotheses./74/

Ward did not develop a psychology of science, perhaps because he adhered more strictly to the distinction between the genesis and the validity of knowledge than did Bain and Sully./75/ Nor did he have much to say concerning the role of analogy in scientific creativity. Nevertheless, he showed an implicit understanding of the power of such analogies, when he argued that the biological sciences, particularly cellular biology, provided more adequate analogies for the growth of the mind./76/

It is clear that there were significant shifts in views of the nature of science from Bain to Ward. While Sully agreed that psychology is a "positive science," the nature of that science was revised by incorporating the notion of development within it. Ward also adopted this new idea of development, but reached the conclusion that our notion of science had to be revised completely. Teleological constructs were necessary to provide any adequate account of human experience.
With regard to psychological method, Bain and Sully continued to assert the primacy of introspection as a psychological method. And to different degrees, each grappled with the problems inherent in that method. Ward did not deny the importance of introspection, but he did not insist upon it being the central method for psychology. Ward was the first true advocate of pluralism in psychological method, although he did insist upon psychologists taking a particular standpoint in their interpretation of these facts.

Finally, we have seen that there were a broad range of positions adopted (both within and across thinkers) on the value of physiology. Ward's view, that at this stage the two disciplines should be kept wide apart, gains merit upon closer examination. I will now turn to somewhat more specific aspects of their psychological theories and will examine their positions on association, will, self and attention.

**Association**

**Bain**

Although Bain's account of association has been frequently described, a brief summary will be helpful here. To account for the workings of the mind, Bain postulated certain fundamental powers which provided the basis for the operation of the laws of association. These fundamental powers included the receptive powers—discrimination and agreement—and a retentive power which was organic in character. Association then operated to generate all of our other intellectual functions, including memory, judgment, reasoning, abstraction and
Bain postulated two fundamental laws of association and two supplementary laws. The law of contiguity played a central role in his accounts of the growth of memory, habit and various learning processes. The law of similarity, which Bain regarded as the more fundamental law, played a central role in his accounts of reasoning and abstraction. A supplementary law, concerning the formation of constructive associations, was based upon this law of similarity. With the help of this law, Bain attempted to explicate the imaginative processes and creative thought. Another supplementary form of association, compound association, was described. Here Bain attempted to account for more complex patterns of associations, by taking into account the complicating effects of emotion and volition. With the aid of this supplementary law, he also attempted to account for the directional character of our thought.

Bain's view that the law of similarity is the most fundamental principle of association was a marked departure from the associationism of James Mill. Mill had argued that contiguity was the only principle of association. There were serious difficulties with this view, which Bain attempted to circumvent with the postulation of similarity. But Bain also employed the notion of "attraction of like ideas," to account for intellectual functions that had been neglected in the associationist tradition, functions like creativity and imagination. Nevertheless, later thinkers such as Ward were particularly critical of this notion of association by similarity.
Bain's attempt to extend the range of the laws of association was paralleled by an extension of the set of elements which could enter into association. In addition to sensations and states of feeling, Bain asserted that actions could be elements in associations. This brought action more clearly within the sphere of mechanistic explanation.

Bain buttressed the copy theory of knowledge with his doctrine of the identity of the seat of impressions and the seat of ideas. This quasi-physiological doctrine served to ensure that our ideas were directly related to sensations, while the laws of association ensured that the order of our ideas followed the order in nature. Bain's implicit epistemological program also shaped his building-block account of the development of mind. Bain wrote:

Our education from first to last takes principally the form of adding unit to unit under the retentive or adhesive attribute of our nature, with which we are so marvellously gifted; and any other process of development is quite secondary in comparison.

Ward

As we have seen, Ward criticized Bain's theory both as epistemology and as a psychological account of the mind. Ward asserted that the subject was the central construct in psychology, and that all knowledge stemmed from the subject actually attending to objects. According to Ward, it is the attention of the subject, rather than the pre-existing order of objects in the world, that determined which, and in what manner, objects were associated. This view had a number of implications. First of all, it presented problems for the empiricist
view that knowledge is veridical, because it copies the world. On Ward's account, knowledge is constructed by the mind, not copied from nature. This fundamental purposive activity of the subject also accounts for such facts as the directional character of thought, rendering Bain's law of compound association superfluous.

Ward rejected the postulation of an independent law of similarity. His argument resembled the one formulated by Bradley, which rested upon the observation that the relation of similarity only exists when both ideas are before the mind. Therefore, similarity can not operate to call up ideas that are not already before the mind. Ward did not deny that some such process takes place, but he asserted that it was mediated by contiguity, not similarity.

How did Ward circumvent James Mill's problems, when he asserted that contiguity was the sole law of association? On a strict contiguity view, association could not operate to call up an idea \( b \) which had previously been paired with \( a \), for the mind could not recognize that the present \( a \) corresponds to the past \( a \) appearing in the pair \( a-b \). Ward recognized that this was a problem, but denied that a principle of association was required to solve it. Instead he postulated a new, non-associational process called assimilation.

The process of assimilation involves the coalescence of a new presentation with the corresponding older presentation. Assimilation is the process underlying the recognition of impressions and it provides the foundation for association by contiguity. However, it is not a process of association, because no distinct images are involved.
Assimilation involves a change in the presentation continuum, a merging of new distinctions within that continuum with the prior distinctions that have already been developed.\textsuperscript{85} 

The concept of a presentation continuum was one of Ward's most original contributions to psychology. In maintaining that the growth of knowledge and action involves increasing differentiation of this sensori-motor continuum, Ward was rejecting the elementalism of the Utilitarian-Associationist tradition.\textsuperscript{86} Ward argued that knowledge is not constructed in a building block fashion from discrete particulars. The growth of knowledge involves the development of increasingly complex presentations from a background of already related presentations.\textsuperscript{87} 

Although Ward rejected the elementalism of the Utilitarian-Associationist thinkers, he did praise Bain for stressing that action was one of these mental constituents.\textsuperscript{88} On the other hand, he rejected the claim that feelings could enter into association. Feelings, he argued, lack the distinctness necessary to make them potential elements in association.\textsuperscript{89} 

Sully 

Ward's critique of associationism was thorough and damaging. Sully's account of association provides us with an opportunity to assess the impact of this critique of association. In spite of his fundamental allegiance to the Utilitarian-Associationist program, Sully departed quite significantly from their view that association was the fundamental process governing the growth of the mind.
In the first place Sully criticized the tendency in recent English psychology that led to an undervaluing of the active side of intellect. He wrote:

the manner of regarding all mental products as brought about by the realization of certain nervous conditions, which naturally attaches itself to the associational view of the mental life serves still more, perhaps, to fix the psychological habit of treating mental processes as purely passive, mechanically determined ends./90/

Sully argued that to correct this tendency, we must make the idea of mental activity prominent; we must "rehabilitate the volitional factor in thought." Sully did this by following Ward in asserting that attention the fundamental power of the mind, underlying all intellectual elaboration./91/ Unlike Bain, who argued that discrimination was a fundamental property of mind, Sully argued that attention underlay the differentiation which led to the "marking off" of distinct sensations. While Sully did not fully accept Ward's notion of the presentational continuum, he did adopt the idea that experience involves "successive differencings of what was before confused."/92/

These "differencings" are later recombined in various ways according to certain principles of integration. Sully denied that association was the sole such principle and he denied that similarity was a process of association. Instead, like Ward, he replaced similarity with the non-associational principle of assimilation. He described assimilation as a process of "sensational integration", that is, a process whereby sensations (or other psychical contents) attract and tend to combine or coalesce. And he posited a range of levels of assimilation from the automatic assimilation underlying the sense of
familiarity to conscious, comparative assimilation wherein we begin to attend to the relation of similarity. /93/ Although he denied that there was a true process of association by similarity, he spoke of the higher process of "assimilative suggestion" which involves the "attraction of similars."/94/

Sully concurred with Ward's view that contiguity was the sole process of association. He described association as:

that process of psychical combination or integration which binds together presentative elements occurring together or in immediate succession.

and added,

such integration has for its main condition . . . a mental reaction on these, either in the shape of a simultaneous grasp of them by attention, or of a movement of attention from the one to the other./95/

This view of contiguity is certainly more wholistic than Bain's, while somewhat less so than Ward's. Sully also said that the intensity and distinctness of the elements influenced the formation of associational bonds. Since all these factors depend upon the movements of attention, this power plays a central role in association.

Sully, like Ward, rejected the "mental chemistry" approach to mind and the related building block view of the growth of knowledge. Instead, Sully argued that psychic development is analogous to biological development involving "a progressive double process of separation and combination with the result of an emergence of more and more complex or highly elaborated products."/96/
Sully and Ward both drew upon recent developments in biology for this account, but Sully was somewhat more explicit about the merits of the analogy. He argued that the psychic process of differentiation was analogous to the process of organic segmentation; while integration corresponded to organic coordination (the formation of structural arrangement). Intellectual development involves advancing from lower psychical forms (percepts and images) to higher psychical forms (thoughts). Since these latter forms depend most highly upon growth in the power of attention, and since attention is an individualizing force, these latter forms are likely to be the most highly individualized.

During the nineties there was general agreement that associationism could not provide a complete account of mind. The new accounts developed by Ward and Sully attempted to overcome the passivity of the older view by giving attention a central role to play in the growth of knowledge. Association was given a more wholistic interpretation and its operation was supplemented by the non-associationist principle of assimilation.

Both these thinkers rejected the tenet that knowledge was built up from particular sensations. Instead, they argued that knowledge is actively constructed when movements of attention lead to differentiations within a mass of already related sensations and ideas. The development of knowledge is depicted as an organic process, rather than a mechanical or chemical process. While it is clear that both Ward and Sully radically revised the traditional account of the growth of intellect we must still examine what they had to say about the will and
related topics.

Will, Self and Attention

Diverse assumptions about the nature and operation of the will were intertwined with discussions of voluntary action during the last half of the nineteenth century. Within the Utilitarian-Associationist tradition the problem of will assumed a particular importance. In the first place, the phenomenalism of this tradition led to will being regarded as simply the state of mind preceding action. Secondly, to meet scientific standards, a psychic determinism, whereby will was fully determined by motives, was postulated. But this approach was not without its problems. The tradition also gave a special status to introspective evidence and the experiences of freedom, choice and self-determination were compelling. Moreover, since this tradition advocated social reform, questions relating to these matters assumed a new importance. Such questions as the extent to which character can be shaped and/or reformed and the extent to which individuals are responsible for their actions could not be ignored. As reform was to be guided by scientific findings, the task of accounting for freedom, choice and individual responsibility within a mechanistic framework, fell within the province of psychology.

Bain

Bain, as we have seen, responded to this challenge by redefining the problem of the will as the problem of voluntary action./99/ However, as he recognized, it involved something more than
this, as volitional processes play a role in thought as well as movement. In Bain's account, the voluntary control of thought was depicted as a special case of voluntary action./100/ As we have seen, Bain developed a new account of the origins of the will and provided physiological underpinnings for its operation. I will briefly review each of these aspects of his account.

Bain revised the traditional account of the origins of will, in order to provide a more adequate account of its active character. A natural spontaneity was posited which led to random movements. Such random movements as yielded pleasure continued, while those yielding pain ceased. Sufficient repetition of the movements under the impetus of pleasure and pain led to the formation of associations. These associational ties operated to stabilize the execution of actions. Bain's account of the genesis of the will involves a process of trial and error, with a random initiation of trials./101/

Bain's account of the operation of the will was fundamentally the same as the Mill's. Voluntary actions are those preceded by the state of mind we call "will." Such states of mind are determined by motives, which derive their power directly from expectations of pleasure or pain. Furthermore, every action has a sufficient motive; the will is completely determined by motives which have resulted from associations between actions and pleasure or pain. The will is not some spiritual power emanating from the ego and controlling all our actions. It is simply the term we use to denote the action of motives. To set the will in motion, a determining motive--some pleasure or pain, given in reality
or idea—is necessary. This determining motive fully determines the will; action always follows the strongest motive./102/ But more is required than this determining motive; a guiding antecedent is also needed. This guiding antecedent is an internal presentation of the movement to be enacted. It is a complex idea consisting of associations between the sight of the action, the muscular sensibility accompanying the action and "the central impulse that gives the direction and degree proper for the performance of the act."/103/ Bain wrote:

the will is a machinery of detail . . . . the fancied unity of the voluntary power, suggested by the appearance assumed by it in mature life, when we seem able to set going any action on the slightest wish, is the culmination of a vast range of detailed associations whose history has been lost sight of or forgotten./104/

Bain recognized that the traditional account of the will as "a machinery of detail" had problems. Specifically, the state of mind we call will is a distinctly active form of consciousness. This first-hand experience of activity had led many thinkers to posit will as an original power of the mind. Bain, tied to the tenets of the Utilitarian-Associationist tradition, denied that such a step was necessary or that it was desirable. Our consciousness of activity or effort, he argued, is not solely a psychic fact. It is he explained, the psychic concomitant of the outgoing motor impulse. When we are conscious of activity we are merely experiencing a form of muscular sensibility, either that occurring presently or the remnants of such embedded by association in the guiding antecedent./105/
To summarize, Bain employed the sensory-motor paradigm to account for all action. However, to overcome the passivity of such an account he posited an active consciousness grounded in muscular sensibility.

Ward

Ward criticized Bain's account of action, but in a less clear and less detailed fashion than he had criticized his account of thought. In several respects their differences are clear. Ward insisted that all action was volitional. He described different levels or stages of volition, each involving somewhat different processes. He stated that pleasure and pain were not the sole determinants of action and that they operated indirectly by controlling the movements of attention. Other aspects of Ward's account seem continuous with the Utilitarian-Associationist tradition. Despite the fact that his account of the determinants of action was considerably more complex than prior accounts, he did not clearly escape from the determinism of those accounts, especially in the earliest version of the theory. Secondly, his account remained overly intellectual, albeit not simplistically intellectual. Finally, although he insisted upon the necessity of a concept of self within psychology this construct only played a limited role in his theory. It was attention, guided by interest, that played the greatest role in Ward's theory of action.

Ward was highly critical of Bain's account of the origins of will, and particularly of his construct of spontaneity. He denied that the "proofs of spontaneity" were any such thing and asserted that the construct was based upon a false analogy between nervous centers and
Leyden jars. He also criticized the trial-and-error account of the growth of volition by denying that the smoothness we observe in mature action could be produced during the period allotted. Ward's alternative account related the origins of action to emotional expression. Voluntary movement, he argued, is an elaboration of primitive emotional manifestations which have a vague and diffuse character. He wrote:

Such "diffusion" is evidence of an underlying continuity of motor presentations parallel to that already discussed in connexion with sensory presentations, a continuity which, in each case, becomes differentiated in the course of experience into comparatively distinct and discrete movements and sensations respectively.

But the development of movement and sensation do not exactly parallel one another. The fact that motor presentations depend upon feeling gives them a distinctive character. Unlike sensory presentations, which simply spring up, motor presentations have distinctive psychic antecedents and can be said, therefore, to have a subjective initiative. More will be said about this subjective initiative—desire—shortly.

It is important to recognize that on Ward's view all action is volitional. He obliterated the earlier distinction between voluntary and involuntary action by arguing that so called "involuntary" actions are merely degraded forms of voluntary action. This view is not quite as implausible as it might seem. Ward was employing the analogy of secondarily-automatic action here. Actions which, through frequent use become habitual—actions such as walking or writing—are said to be secondarily automatic. Ward argued that what we call "involuntary
action," including even instinctive action, was once voluntary but had become automatic in the course of evolution.

Nevertheless, there is a process of development of volition from simpler to more complex forms and this volitional development is intertwined with intellectual development. At the lowest level we have what Ward calls "presentation prompted action." Here, we attend, non-voluntarily, to a change in the sensory continuum. This non-voluntary attention leads to a feeling of pleasure or pain which influences the direction of attention, thereby producing changes in the motor continuum and change of movements./111/ The following examples may help to illustrate this account. A balloon is held before a child. This new sensory presentation produces pleasure which leads to a concentration of attention upon the balloon and/or flapping of arms in a playful manner. Here the pleasure arrests movement, or elicits diffuse movements. Again, a bright light is placed before a child's eyes. The child struggles in its presence and eventually succeeds in averting his or her eyes. Here the new sensory presentation produces pain, which leads to movements aiding withdrawal of attention from the presentation. Again, a child is touching various objects in succession. Upon touching one that is hot, the exploration ceases. Here a motor presentation (reaching out and touching) is followed by pain. The result, in Ward's terms, is that attention is withdrawn from the motor presentation and action ceases.
These examples can be used to describe certain distinctive features of Ward's account. First of all, pleasure and pain do not determine action directly. Instead they operate upon attention, which is the proximate cause of action. When a sensory or motor presentation produces pleasure, attention is concentrated upon it; when it produces pain, attention is withdrawn, and this withdrawal of attention is facilitated by the movements that follow pain./112/

Secondly, pleasure and pain are not symmetrical in their effects. Ward argued that pain played a much greater role in the development of purposive action than pleasure. He noted that pleasure tended to either repress movement, or to elicit increased but indefinite movement. Such would be the case first, if the child was fascinated by the balloon and second, if the sight of the balloon prompted flapping of the arms and other playful movements. On the other hand, when sensory or motor presentations are the occasion of pain, movement invariably follows. Attention is withdrawn from painful sensory presentations (e.g., we struggle in the presence of a too bright light and eventually learn to turn away) or, in the case of motor presentations, the movement is suspended (we withdraw our hand after pain results from reaching). Ward argued that pain is more intimately related to movement, and that pain-prompted movements more quickly acquire a purposive character than pleasure-prompted movements./113/

At a higher stage of development, action comes under the control of ideas. It is this form of action that the Mill's and Bain had regarded as genuine voluntary action. Ward's account of this type of action
differed in two main respects from the earlier accounts. First, he argued that a shift in attention was the proximate cause of change of movement. Second, while he continued to assert that desire was the precursor of this type of action, he denied that desire was solely a function of pleasure and pain.

In Ward's account desire operated to shift attention, thus leading to a change in the intensity of motor presentations and a change of movement. Here Ward was taking ideomotor action—the operation of the fixed idea—as illustrating the process underlying all forms of voluntary action. While Bain had recognized this type of action, he held it to be an exception to the general principle governing the operation of the will, which is that "without some antecedent of pleasurable or painful feeling . . . the will cannot be stimulated." Ward insisted that the proximate cause of movement was attention, although this in turn was determined by feeling. Ward's principle of subjective selection described how attention was determined by feeling. He wrote:

out of all the manifold changes of sensory presentation which a given individual experiences, only a few are the occasion of such decided feeling as to become objects of possible appetite (or aversion). The representation of what interests us comes to be associated with the representation of such movements as will secure its realization, so that . . . we can by what is strangely like a concentration of attention convert the idea of a movement into the fact, and by means of the movement attain the coveted reality.

The principle of subjective selection is the psychic counterpart of the principle of natural selection, and it operates to aid the individual in successful adaptation to the environment. Ward regarded the will as the main instrument of individual adaptation. Given this view, it is not at
all surprising that he saw pain as playing a larger role than pleasure as a determinant of action. Furthermore, these determinants operated differently than in earlier accounts. To see how, it is necessary to discuss two constructs—interest and desire—that are not presented very clearly in Ward's own work.

Ward employed the term "interest" frequently in his work without ever carefully explicating its meaning. Later writers, such as William James, employed the term explicitly to denote a teleological determinant of the will, and it is likely that Ward intended something similar. At the very least, this construct implied a much more complex view of the operation of pleasure and pain, for interest implies a stability of feeling that operates to determine movements of attention. Interest, as a mode of feeling is much more than the simple prompting of pleasure; more even than the sum of such pleasures enjoyed in the past. As the presentation continuum becomes more highly developed, feeling becomes attached to more complex forms of consciousness, and attention shifts from mere sensation to interests. One important consequence of this shift is that attention can be more economically employed in such cases, and an attention-sustaining pleasure results from this effective employment of attention. An example may help here. Ward spoke of the "pleasurablebness of a rhythmic succession of sounds or movements" versus the "painfulness of flickering lights, 'beats' in musical notes, false tins, false steps." In the first case, attention may be more economically employed due to the harmonious organization of the components; in the latter cases, the disharmony frustrates attention.
Ward implied that an analogous organization of ideas may be one of the outcomes of the elaboration of the presentation continuum. He also held that as this continuum becomes more complex, the causes of feeling become much more complex.\textsuperscript{120} Finally, "as the causes of feeling become more complex internal and representative the consequent actions change in like manner."\textsuperscript{121}

While Ward didn't fully explicate the interest construct it is employed, at the very least, to provide a more complex view of the operation of feeling. Ward's account of desire is, in places, even more obscure than his account of interest. Ward described desire as the state in which "the intensity of the re-presentation is not adequate to the intensity of the incipient actions it has aroused."\textsuperscript{122} He wrote:

the source of desire lies essentially in this excess of the active reaction above the intensity of the presentation (the one constituting the 'impulse,' the other the 'object' of desire or the desideratum), and that this disparity rests ultimately on the fact that movements have, and sensations have not, a subjective initiative.\textsuperscript{123}

While these descriptions shed little light on desire, the main points in Ward's account are, I believe, the following. At a certain stage of psychic development there are already well formed associations between ideas and the movements necessary for their realization, e.g., between the idea of fresh air and the movement of getting up and opening the window as well as the movement of breathing deeply. Whenever such an idea is presented, the incipient movements attached to it are also presented. The state of desire arises when these incipient movements are somehow thwarted; i.e., when there is a "pent-up stream of action." However, these movements must be thwarted in a particular manner. Not
only must there be an obstacle to the realization of what is desired but the obstacle must be provided "by means of the actions its representation has aroused."/124/ In other words, the incipient actions aroused compete with the actions that might operate to gain the desired object. The idea of fresh air, for example, leads onto the incipient movements of breathing deeply, as well as the more instrumental one of getting up and opening the window. If all one does is sit and breath deeply, a strong desire may be forthcoming, but little fresh air.

Ward argued that the strength of desire was simply the strength of this impulse or striving to act./125/ Obstacles blocking action serve only to increase desire. There are various other conditions that determined the strength of this impulse. In the first place, desire varies with the contents of consciousness at any given time. When there are few present interests, or these are weak, or when there is pain "attention is ready to fasten on any new suggestion that calls for more activity, requires a change of active attitude, or promises relief."/126/ Moreover, certain nascent movements are more likely to be restored including those which are "fresh" and also those which have been frequently executed and so are readily aroused through habit. In addition, the impulse to act will be stronger. Ward wrote that "the greater the available energy, the fewer the present outlets, and habits apart, the fresher the new opening for activity."/127/

It is clear that Ward was presenting a more dynamic view of desire than his predecessors, although it is still a rather intellectual account because it is cognition, in the first instance, that determines
feeling and thereby volition./128/ Nevertheless, Ward recognised important interactions between volition and cognition. He noted that desire prompts us to the search for means to its end, sometimes involving the evaluation of possible alternative courses of action. In this manner, desire provides us with motives to begin thinking. Nevertheless, while Ward was attempting to make volition central, he was not able to completely escape the intellectualism of earlier accounts./129/

Ward did deviate from earlier accounts in an important respect—pleasure and pain were not directly related to desire. Ward wrote:

Pleasure in the past, no doubt, has usually brought about the association between the representation of the desired object and the movement for its realization; but neither the recollection of this pleasure nor its anticipation is necessary to desire, and even when present they do not determine what urgency it will have./130/

In support of this account he pointed to habitual desires which show that "desires do in fact become more imperious, although less productive of positive pleasure, as time goes on./131/

In another respect, Ward deviated from the earlier accounts. He denied that the operation of desire was involved in rational action, and stated that "desire is blind without the present certainty of sense or the assured prevision of reason."/132/ He also denied that rational action was determined by pleasure, at least in the sense normally given to pleasure. Here of course, he was denying the central tenet of the Utilitarian creed. But he was not denying that pleasure played a role in action, for to do so would nullify his own principle of subjective
selection. Instead, Ward insisted that what is pleasurable is relative to the individual's stage of development—both to cognitive development and to the development of self-consciousness which proceeds alongside of cognitive development. While we choose that course of action that is pleasurable, these pleasures can by no means be catalogued or quantified. Ward wrote:

the causes of feeling change as the constituents of consciousness change and depend more upon the form of that consciousness as that increases in complexity. When we can deliberately range to and fro in time and circumstances, the good that is not directly pleasant may indeed be preferred to what is only pleasant while attention is confined to the seen and sensible; but then the choice of such good is itself pleasant,—pleasanter than its rejection would have been. /133/

As this passage suggests, Ward was not willing to abandon all forms of determinism. Volition is determined, although in some cases the "determining motive" may be an idea of an end. In the 1880's Ward argued only for a limited form of freedom—that of self-rule or autonomy. He wrote, "that man is free 'externally' who can do what he pleases, and when we talk of internal freedom the same meaning holds." /134/

However, in a later version of this article, Ward continued to reject "absolute indeterminism" and also rejected the usual interpretation of determinism by motives. He wrote:

the rigidly determinist position can only be psychologically justified by ignoring the activity of the experiencing subject altogether. At bottom it treats the analysis of conduct as if it were a dynamical problem pure and simple. But motives are never merely so many quantitative forces playing upon something inert, or interacting entirely by themselves. At the level of self-consciousness especially motives are reasons and reason is itself a motive. In the blind struggle of so-called "self-regarding" impulses might is the only right; but in the light of principles or practical maxims right is the only right. /135/
Here he was asserting that rational action or conduct is qualitatively different than action controlled by desires. It is self-consciousness, and its power of attention, that creates this difference. Ward brought together his critique of earlier accounts of thought and action and argued that,

Authoritative principles of action, such as self-love and conscience, are no more psychologically on a par with appetites and desires than thought and reason are on a par with the association of ideas. /136/

While there were considerable differences between Ward's account of volition and earlier accounts, Ward did not go as far as he might have in following out these differences. Ward argued that all action was volitional, but that the nature of volition changes as it develops. However, since the development of volition is directed by cognitive development, we can question whether conation was the central factor in Ward's theory. Furthermore, while Ward argued that the development of self-consciousness played an important part in volition it was attention, not the self, that carried all the explanatory weight. The mechanisms that control attention, such as interest, are certainly more complex than the operation of pleasure and pain. But because the interest construct remains rather vague, it is difficult to decide whether it represents an advance over the earlier view of determination by motives under the control of pleasure and pain.

Sully

Sully's account of the will resembled Bain's account more than Ward's. He was critical of Ward's notion that all action is volitional. His account of the origins of action was a revised version of Bain's.
And he held that all voluntary action was determined by motives. In short, Sully accepted the explanatory framework of the Utilitarian-Associationist thinkers.

On the other hand, he recognized that the associationist tradition had emphasized passive aspects of mind and insisted that the role of mental activity must be acknowledged if we are to formulate an adequate psychology. However, because he felt psychology must be scientific, he insisted that psychologists must recognize only phenomenal activity. As we will see, Sully rejected Ward's notion of the pure ego while continuing to insist that the self (in the form of self-consciousness) played a central role in volitional phenomena. We will also see that Sully employed the constructs of attention and interest to help provide a more active depiction of mind.

Sully rejected Ward's idea of the primacy of volition. He denied that reflex action was "secondarily automatic" and argued that voluntary action developed largely out of instinctive movements.\textsuperscript{137} Sully's account of the origins of volition was a revised version of Bain's with a much larger role given to instinct.

Sully postulated three sources of volition: (1) Random automatic movements, (2) Sensory-motor movements and (3) Instinctive movements. At the outset movements were produced as an immediate response to sensations. At a later stage

this crude form of movement will be seen to be complicated by ideational processes, suggestion of desirable object, and of appropriate action, till in the highest type of volition this internal ideational factor becomes the main determinant under the form of deliberation and rational choice.\textsuperscript{138}

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Voluntary action develops out of instinctive action but differs from these simpler forms in that an "active consciousness" is present along with a representation of the movement to be enacted. In addition, actions which become voluntary are those which lead to pleasure or lessening of pain. An important process in the development of volition is the formation of associations between movements and satisfying or pleasurable results of such movements.\textsuperscript{139} In Sully's account, as in Bain's, volition depends upon "guiding antecedents" and "determining motives."

Sully did revise Bain's account of the origins of volition in important respects. In that account, random movements had been the sole source of voluntary action. Sully denied that these random movements played a large role. Since they were not feeling-initiated they had to lead to positive pleasure in order to figure in the associational processes which develop volition. In addition, there are not very many such movements.\textsuperscript{140} Nor are reflex movements good candidates for such development, for they normally remain "at best but a subconscious psychological phenomenon."\textsuperscript{141} Sully argued that instinctive movements offered advantages over these other classes of movements because their psychic antecedents include feeling and active impulse. He concluded that "it is this type of wide-ranging, unspecialized, feeling prompted movement which supplies the nucleus of a truly volitional action."\textsuperscript{142}

Sully's account considerably streamlined the trial and error process of the development of volition. We have seen that the length of such a process of development had been a problem for Bain. Sully wrote,
"in proportion as the element of instinctive prompting (Trieb) is powerful, and its direction specialised, the process of volitional acquisition is shortened"./143/ Notice also the similarity between Sully's description of these instinctive origins, including "early undifferentiated expressive movements," and Ward's description of the motor continuum./144/ However, for Ward, these primitive movements were always expressions of emotion. Sully's instinctive movements were more general, and more specialized than Ward's primitive movements.

Sully maintained that voluntary movements arose by a process analogous to natural selection. As we have seen, Ward disavowed analogy at this point and formulated a distinctive teleological principle—the principle of subjective selection. Underlying this principle was the idea that a process of psychic selection accounted for our adaptation to the environment./145/ Sully had a similar idea, but chose to couch it in vaguer analogical terminology.

Nevertheless, Sully maintained that conation was a distinctly active process in contrast with intellect and feeling. Like Ward he maintained that attention played a central role in active states. Unlike Ward, he insisted that muscular activity also played an important role. He wrote "to desire is to be incipiently active, to be stirred to muscular exertion."/146/

Sully also reverted to Bain's account of the origins of our active consciousness. Sully went further and criticized Ward for failing to provide an account of conation that distinguished it from intellect and feeling. Apparently, Sully regarded the active consciousness derived
from muscular activity as the distinctive feature of conation. Although Sully acknowledged that attention can "develop and intensify" ideas, he assigned it a more limited role in volition than had Ward.

Like his predecessors, Sully took great pains in analyzing the state of desire that precipitated voluntary action. In his account, desire was related to both intellect and feeling. While an idea of pleasure is a part of every state of desire, this idea is commonly perceived as inferior to actual pleasure. Like Ward, Sully stressed that the state of desire is one of pain, or want. For Sully this is due to the fact that the objects of desire are always "unrelised situations or experiences of the self."

Sully returned to earlier views in arguing that the state of desire is largely determined by the magnitude of pleasure presented. He did qualify that account in a manner similar to Ward, by arguing that the determining condition is the magnitude of pleasure "represented at the present moment." Other modifying circumstances were mentioned—including the degree of physical vigor and the effects of habit—but for the most part Sully regarded the strength of desire as proportional to the pleasure anticipated. And since motives are simply desires transformed into incentives for action, the strength of motives is also determined largely by pleasure. Finally, since Sully held that action followed the strongest motive, the will was determined by the anticipation of pleasure.
While Sully acknowledged that we can distinguish between lower and higher forms of conation, he argued that the higher forms were continuous with the lower. The higher forms of conation involved greater complexity in the movements performed, as well as greater complexity of motive.\[152\] Higher forms of conation also involved a consciousness of self. However, unlike Ward, Sully argued that this self is not a primitive given. Self-consciousness—which is the only form of self we can speak of in a phenomenalist framework—arises as a byproduct of the growth of voluntary movement.\[153\]

According to Sully, when the growth of voluntary movement has reached a certain stage, the consciousness of self as an agent appears. This comes about in the following manner. Conation involves distinctive states of consciousness as well as bodily movements. As these states of consciousness (including the active muscular consciousness) become more complex, there is a corresponding shift in our idea of what is self and what is not self. At some point we come to regard the self as "the imagining and desiring subject" as opposed to bodily movements. The self is then conceived as agent—as the power behind such bodily movements.\[154\]

The idea of the self as agent is developed further and comes to play an important role in conduct. The "reflective self" represents an advance over the "impulsive self", because it is capable of concentrating the mind on certain motive-ideas thereby creating an "intensified consciousness . . . . [and] extended processes of ideation or reflection.\[155\] At a higher stage of development this conflict
between the reflective and impulsive selves gives rise to a clear consciousness of freedom; that is, an apprehension of self as "freely intervening and determining the result."/156/ Sully was quick to point out that this consciousness of freedom implies nothing whatsoever about the metaphysical reality of freedom. While it also ought not imply anything about the metaphysical unreality of freedom, Sully adopted the stance of a scientific psychologist and stated that "all actions, just as all other psychical processes, are ultimately determined by groups of psychophysical conditions."/157/

While Sully eagerly employed the new terminology, it was utilized within the old explanatory framework with its emphasis on efficient causes. Within such a framework it may be possible to talk of consciousness of self, just as it is possible to talk of consciousness of freedom, but this must not be interpreted as asserting the metaphysical reality of either the self or freedom. Ultimately it is in terms of metaphysical commitments that the significant differences between Ward and Sully appear./158/ The important question is, of course, whether or not these metaphysical differences produced significant differences in their views of psychology, and whether one set of metaphysics produced a more adequate psychology than the other. I will not treat these matters in detail here, but some comments are in order.

Focusing just upon the descriptive adequacy of their accounts of will, there is not a great deal of difference between the two. Within their respective frameworks, each was able to describe the conscious
self as actively engaged in adapting to the environment./159/
Ironically, of the two, Sully provided the clearer account of the role of self in volition. However, it is not clear that he always remained within his phenomenal boundaries in so doing./160/ And each account appears overly intellectualistic from contemporary perspectives.

Focusing upon the explanatory adequacy of the two accounts there appear to be costs associated with each view. The assumption of psychic determinism led Sully to postulate motives in a circular fashion. However, it is not clear that Ward's account escapes from the same charge. The movements of attention are determined by interest, but there seems to be no way of obtaining independent evidence concerning the existence and relative strengths of such interests.

These matters deserve a fuller discussion./161/ However such a discussion is best postponed until after Chapter 10 when we have seen how these two thinkers employed their new accounts of thought and action to inform the practical disciplines of ethics and education.
NOTES FOR CHAPTER 9


3. Ibid.

4. Hearnshaw tends to group Ward with the enemies of scientific psychology who divered psychology from the correct path identified by Bain. See Ibid., pp. 136, 139.

5. See Chapter 3, section entitled "The Utilitarian-Associationist Tradition and Bain"; Chapter 4, section entitled "Sympathy"; and Chapter 5, section entitled "Bain's Account of Belief."

6. See Chapter 4, section entitled "The Physical Embodiment of Mind."


10. Ibid., p. 354.


12. Ibid., 1:14.


18. Ibid.


"attained the position of a positive science; ... possessing its own methods, its own specific problems and a distinct standpoint altogether its own ... its inquiries are restricted entirely to 'facts.' In pursuit of these it is brought into close relations with biology, physiology, pathology and again with philology, anthropology and even literature. Its results also have important practical applications for the educationist, the jurist, the economist, quite apart from their theoretical bearing on the problems of the epistemologist and the moralist." (Ibid., p. 1.)

Portions of this statement are at odds with views Ward expressed elsewhere. However, in a joint statement of an official view of psychology, Ward may have been willing to yield on certain issues. It is clear however, that he did support the idea that practical disciplines, such as education, should be based upon psychology. See *Psychology Applied to Education*, G. Dawes Hicks, ed. (Cambridge: Cambridge University Press, 1926), pp. 1-5.

21. This is the solution adopted by Bain and Sully, although not consistently adhered to by either. One problem with this position is that the scientific stance may carry with it certain implicit values. Another problem is that the language of science is incommensurable with the language of morals.


27. Bain's introduction and systematic employment of the tripartite view of mind is one example of this classifying technique. Its influence is also seen in his accounts of character and the laws of association among other topics. J. A. Cardno in "Bain and Physiological Psychology," Australian Journal of Psychology, 7 (1955):117, refers to Bain as "the Linnaeus of psychology."

28. See Chapter 3, section entitled "The Received View of Bain" above.


30. Ibid., p. 10.

31. "Prospectus for the Quarterly Review of Mental Science (1874)" George Croom Robertson Papers, University College Library, University College, London. This prospectus stated

"It is for those who maintain the possibility, [of a phenomenal science of mind] to make it manifest by submitting their inquiries to every test suggested by the procedure of recognised sciences; and there is not a more signal test than the publication of a continuous record of fresh results cohering alike with one another, and with facts known or principles allowed, before. The new Review will have done something to determine a question of the highest moment for science in general, if it succeeds and, if it fails, may not have done nothing. (Ibid)


33. Ibid.

34. Bain, The Senses and the Intellect, 3d ed. (New York: D. Appleton, 1868 ([1859]), p. 507. Unless otherwise noted all references will be to the third edition of this work. The full quotation makes it clear that Bain regarded the "attractive energy" of similarity as the right hand of the scientist rather than analogical reasoning per se. Yet I do not think I am greatly distorting Bain's meaning by simplifying the quotation in this fashion.
35. Ibid., p. 530.


37. The power of such analogies may be suggested by observing that while Bain regarded the senses as the key to the intellect, Ward regarded the intellect as the key to the senses. At the same time we must remember that the use of analogies often leads to oversimplification, the present instance not excepted.

38. Sully, Human Mind, 1:15.

39. This included the study of "remarkable minds," infant minds, abnormal states of mind, the collective mind and the animal mind. Ibid., 1:18-21.

40. Ibid., 1:14.

41. Ibid., 1:23.

42. Unlike Bain, Sully never mentioned the Natural History approach. There are also shifts in the description given of analysis. Sully wrote: "Analysis into constituent elements or factors is . . . always in a measure artificial," (Ibid., 1:24) and that in seeking to get back to psychical elements we have to carry out a process of ideal construction analogous to that which the physicist carries out in constructing his material atoms. That is to say, we invent a kind of hypothetical fiction as a necessary presupposition of the knowable psychical phenomena." (Ibid., 1:27)

43. Ibid., 1:28.

44. Ibid., 1:26.


46. Sully asserted that Differentiation, Assimilation and Association, aided by the process of attention were the elementary processes constituting intellect and that "our mental life unfolds by help of the renewal of these elementary functional activities." Sully, Human Mind, 1:169.

47. Ibid., 1:198.

48. Ibid., 1:201.
49. Since Sully’s views on the nature of mind are clearly influenced by developmental biology, I can be faulted for not including much discussion of the impact of evolutionary theory on these thinkers. Sully regarded evolutionary method as a challenge to traditional psychology since it advocated a focus upon the objective, rather than subjective, side of the phenomena. See “The Relation of the Evolution Hypothesis to Human Psychology,” in Sensation and Intuition, pp. 1-22. Sully noted that evolutionists were often too quick to posit inherited ideas to account for feelings that are not clearly the effect of the immediate environment. Ibid., p. 11. Moreover, he pointed out that it was difficult to ascertain instinctive origins of human feelings and actions. Ibid., pp. 13-14. He mentioned other problems with the evolutionary method such as the fact that the study of animal behavior is fraught with methodological problems and, moreover, cannot reveal much about human consciousness. Ibid., pp. 15-18. Sully concluded that there were enough remaining “subjective” facts and that these were of a sufficiently complex character, to warrant their separate treatment by psychology. Ibid., pp. 8-10.

Sully did feel that evolutionary theory had contributed some important ideas to psychology, including the notion of development and a quasi-teleological account of the organic world. Sully, Human Mind, 1:32.

50. Ibid., 1:33.

51. Ibid.


53. Sully cited research on association and hypnotism as well as psychophysical research as valuable new experimental trends. Human Mind, 1:22-23, 30-31. Sully also maintained that sociological factors must be taken into consideration when attempting to understand the individual human mind. Ibid. 1:34-35. Sully stressed the value of studying the individual mind in relation to a “community of minds.”

54. See n. 13 above.

55. Bain had argued that it was the “attractive energy” of similarity which provided the mechanism underlying analogical reasoning. Sully’s rejection of this law will be discussed in the next section.


57. Ibid.

58. This point has been made quite well by Lorraine Daston in “The Theory of Will versus the Science of Mind,” p. 106.
59. Ward, "Psychology," p. 38. Daston claimed that Ward abandoned objectivity in his revision of the nature of science but this passage shows that conclusion to be erroneous.

60. Ibid. Ward also denied that the psychologist adopting this method must accept the philosophical conclusions of these thinkers.

61. Ibid., p. 39. Moreover, Ward wrote

"however much assailed or disowned, the conception of a mind or conscious subject is to be found implicitly or explicitly in all psychological writers whatever,—not more in Berkeley, who accepts it as a fact, than in Hume, who accepts it as a fiction. This being so, we are far more likely to reach the truth eventually if we openly acknowledge this inexpugnable assumption, if such it prove, instead of resorting to all sorts of devious periphrases to hide it. (Ibid.)

62. See Chapter 8, section entitled "The 'Psychological Subject'" above.


64. Ward, "The Relation of Physiology to Psychology," (London: privately printed essay, 1875). This essay earned Ward a fellowship at Trinity College.

65. For example, he noted that the position of psycho-physical parallelism tends to collapse into materialism due to the tendency to accord a greater reality to matter than to mind. Ibid., pp. 58-59.

66. Ibid., p. 37.

67. Ibid., pp. 37-38.

68. For example, whether laws like Weber's and Fechners described relations between physical objects and nervous action or between nervous action and sensation. In the former case they would be merely physical laws, in the latter, psychological laws.

69. Ibid., p. 56.

70. Ibid., p. 57.

71. See Ward, "Mechanism and Morals."

72. This position had been adopted by Hermann Lotze, who Ward cited, as one of his two intellectual mentors (the other being Henry Sidgwick). Others adopting this view included F. A. Lange and, at times, Thomas Huxley. See Chapter 6, above.
73. See Hearnshaw, British Psychology, pp. 136-9, 186.


75. At one point Ward suggested that the proper task of philosophy may be with the assumptions involved in the methods and data of the several sciences—that is, he was suggesting the possibility of a philosophy of science. Ward, "Psychological Principles (II)," p. 154.


78. Ibid., pp. 327, 457, 545-70.

79. Ibid., pp. 570-71.

80. Ibid., p. 327.

81. Ibid., p. 338.


83. See Chapter 8, section entitled "Ward's Critique" above.

84. See Chapter 8, section entitled "Association and the Memory Continuum."

85. For the modern reader, Piaget's notion of equilibration, as covering both assimilation and accommodation, is quite similar to Ward's notion of assimilation. Ward's rejection of the law of similarity also entailed a recognition of two forms of knowing—knowledge by acquaintance and knowledge by description. See Ward, "Psychology," p. 49.

86. That some such change was needed was recognized by Hearnshaw who seems eager to attribute such a notion to Bain. Hearnshaw, British Psychology, pp. 9-10.

87. According to Ward it is attention which does all the work of contiguity. Since attention determines which presentations will occur together in consciousness. He also preferred to speak of association by continuity, rather than contiguity, and to speak of presentations being integrated into a new continuum rather than speaking of presentations being linked together. Ward, "Psychology," pp. 60-61.

88. Ward, "Psychological Principles (III)," pp. 50, 64.

91. Ibid., p. 490. Sully insisted that he was only talking about phenomenal activity without committing himself to the postulation of "an occult active spiritual principle." Ibid.
97. Ibid., 1:198-99.
98. Ibid., 1:200.
99. Although this was a new departure it reinforced the earlier tendency to restrict volition to cases of immediate action. See Chapter 1, n. 128 above.
100. James Mill had similarly taken bodily action as the model for mental volition.
101. See Chapter 5 for a more detailed account of Bain's theory of the will.
102. As in the earlier accounts this positing of motives as sufficient determinants of action collapses into circularity, unless independent evidence can be provided concerning the existence and relative strengths of such motives. Such independent evidence was not forthcoming in Bain's account.
103. Bain, The Emotions and the Will, 3d ed. (New York: D. Appleton, 1875 ([1859]), p. 351. Unless otherwise noted all references are to the third edition of this work.
104. Ibid., p. 344.
106. I have had great difficulty in following Ward's account of action. By contrast, the simple clear accounts provided by Bain and Sully have an immediate appeal.
107. Bain had considered this account as an alternative to the postulation of a primitive spontaneity but rejected it. See Emotions and Will, pp. 314-15.

109. Ibid., p. 42. Motor presentations differ from sensory presentations in another respect; thy lack the qualitative differences found among those presentations. Ibid., p. 51.

110. Ibid., p. 43.

111. Ibid., p. 44. Here Ward was rejecting both the bipartite and the tripartite views of mind. He wrote

"instead ... of the one *sumnum genus*, state of mind or, consciousness, with its three co-ordinate subdivisions--cognition, emotion, conception--our analysis seems to lead us to recognise three distinct and irreducible facts--attention, feeling and objects or presentations--as together, in a certain connexion, constituting one concrete state of mind or psychosis ... [of which] there are two forms ... viz, (1) the sensory or receptive state, when attention is non-voluntarily determined ... and (2) the motor or active state, where feeling precedes the act of attention, which is thus determined voluntarily. (Ibid.)

112. Ibid., p. 43.

113. Ibid., pp. 43, 73.

114. Ibid., p. 43. Ward was not claiming that ideomotor action was voluntary, he was simply pointing out that in this form of action the connection between attention and movement is exceptionally clear. In selecting ideomotor action as the prototype of voluntary action, Ward was departing from the tradition which regarded sensori-motor action as the paradigm case of action.


117. Ibid., p. 69.

118. Ibid. Presumably Ward here is talking about the economical employment of non-voluntary attention.

119. Ibid.

120. Ward used this evolutionary analogy to justify John Stuart Mill's position on qualitative differences amongst pleasures. He wrote:

"While we are all along preferring a more pleasurable state of consciousness before a less, the content of our consciousness is continually changing; the greater pleasure still outweighs the less, but the pleasures to be weighed are either wholly different, or at least are the same for us no more." (Ibid.,
121. Ibid., p. 85. Note that this implies that feeling and action rest upon cognition. I will have more to say about this later.

122. Ibid., p. 74.

123. Ibid.

124. Ibid.

125. Ibid.

126. Ibid.

127. Ibid.

128. The intellectualism of Ward's account becomes particularly apparent in contrast with more modern views. Freud's view of desire as a fundamental striving that determines all psychic development contrasts sharply with Ward's account, even though Ward's views were relatively dynamic for his time.

129. For example, Ward stated that "desire in prompting to the search for means to its end is the primum movens of intellectio". Ibid., p. 85. At many other points, Ward insisted that sensation, not cognition was the basic characteristic of mind. However, since he argued that attention was controlled by feeling and feeling determined by presentations, it appears to me that cognition is more central in his account.

130. Ibid., p. 75

131. Ibid.

132. Ibid.

133. Ibid., p. 85. Here we may see another function of Ward's interest construct. Since pleasure stems from the efficient use of attention and attention can be more efficiently employed when directed toward a harmonious complex of presentations or ideas, new presentations may be pleasurable to the extent that they are congruent with interests. In such a manner one's self-interest may be said to determine one's movements of attention and conduct, and this may be what Ward had in mind when he spoke of self-rule or autonomy. I have not found this spelled out by Ward but it seems to be implied by his analysis.

134. Ibid.

136. Ibid.
138. Ibid., 2:180-81.
139. Ibid., 2:189.
140. Ibid., 2:189-90. Here Sully recognized that pain as well as pleasure played a role in the development of voluntary movement. Since random movements are not preceded by feeling, the cessation of pain cannot be a reason for their continuance.
141. Ibid., 2:191-92.
142. Ibid., 2:192.
143. Ibid., 2:194.
144. Ibid., 2:192.
146. Ibid., 2:201.
147. Sully, *Human Mind*, 2:177. Sully pointed out that Ward's account led logically to the volitionless theory of action of Munsterberg. To avoid this reductio ad absurdum, he argued, it is necessary to the "fundamental peculiarity of the active consciousness"; that is, to acknowledge its physiological underpinnings. However, he did not commit himself to a particular theory of muscular sensibility. Ibid., 2:212-13. Sully, like Bain, argued that whatever the physiological underpinnings were found to be, the psychical nature of the idea of movement a mode of active consciousness would not be altered. Ibid., 2:213.
148. Sully complained that Ward had widened the denotation of attention so greatly that it functioned as a hypothetical process in his theory. Sully advocated restricting the term to its more marked manifestations. Sully, *Human Mind*, 1:146, n. 4.
149. Sully *Human Mind*, 2:197. Ironically, although Sully treats only of the phenomenal self, his account of desire shows a greater recognition of the role of self than does Ward's.
150. Ibid., 2:206.
151. Ibid., 2:206.
152. Ibid., 2:216-17.
154. Ibid., 2:224.
155. Ibid., 2:292.
156. Ibid., 2:293.
157. Ibid., 2:294-95.

158. Here I mean "metaphysical" in the broad sense, including what type of constructs each was willing to acknowledge played a role in psychological theory.

159. An emphasis upon the conative striving of the conscious subject persisted among British psychologists. McDougall's hormic system is the clearest example and this system was highly influential throughout the first half of the twentieth century.

160. In describing higher stages of self-consciousness—including the sense of personal identity and the attainment of a consciousness of personality—Sully equivocates. On the one hand, he describes the difficulty of attaining such conceptions noting, for example, that "the complexity of our [conscious] mental life tends rather to the development of the idea of different selves than of one simple self." Sully, Human Mind, 1:480. On the other hand, the enduring self is necessarily presupposed in the development of all higher forms of volition. See ibid., 1:481; 2:291-95.

161. My own (tentative) conclusion is that teleological accounts, such as that proposed by Ward, provide a necessary corrective to accounts which have lost sight of aspects of experience difficult to capture in terms of efficient causes. However, I am not convinced that we should abandon the attempt to account for such phenomena within a non-teleological framework.
CHAPTER 10

BRITISH PSYCHOLOGY IN THE NINETIES:
JAMES SULLY AND JAMES WARD

II. APPLIED PSYCHOLOGY

The central thesis of this dissertation is that the Utilitarian-Associationist thinkers had an impact, both negative and positive, upon British psychology that lasted well into the twentieth century. Since the distinctive contribution of this tradition involved particular views of morality and a particular view of the relation between psychology and education, we should be able to detect this influence in what later psychologists had to say about morality and education.

Morality

Sources and Goals of Conduct

One of the most difficult problems faced by the Utilitarian-Associationist thinkers was the need to reconcile their rejection of religion and their deterministic account of human nature with their goals of creating good citizens and a good society. Since they denied the existence of a moral sense which guided conduct and the threat of an afterlife which might keep people in line, other means of directing conduct had to be sought. Ethical formulae, such as those contained in the felicific calculus, were developed to guide conduct.
more accurately than could the moral sense. Legal and social sanctions provided the functional equivalent of hell in the religious accounts. The operation of correct motives ensured correct action, although frequently the operation of actual motives needed to be adjusted through the administration of additional pleasure and pain.\footnote{1}

Psychology had an important role to play in this undertaking. In the first place, it could provide a detailed account of how motives operated to determine volition. The laws of the mind also provided the foundation for programs of social reform. Specifically, it was thought that these laws could help us decide how to reform the legal system to improve conduct, and how to develop our educational system so as to shape sound character. Finally, psychology ought to help us decide upon the goals of a moral life.

In this section, I will be comparing the ethical views of Bain, Ward and Sully with the views propounded by Bentham and Mill. Before turning to the later thinkers it may be useful to present a brief summary of the utilitarian ethical doctrines.

For Bentham, the basic fact of motivation was that individuals seek pleasure and avoid pain. In the utilitarian system this fact was erected into a moral principle: action was rational and/or moral when it was chosen so as to produce the greatest happiness for the greatest number.\footnote{2} Underlying this principle was an account of volition that was completely deterministic. Actions were fully determined by motives, which in turn derived their power from desire (or the feeling of pleasure derived from the anticipation of an action). Rational action
only differed in involving a comparison of pleasures to be derived from different courses of action. Even here, it was the strongest motive—the one having the greatest pleasure value—that ultimately determined action. /3/

Since the utilitarians denied that we are innately moral, some external factors must operate to ensure moral conduct. And since stable conduct is morally desirable, they developed the notion of individual character as the sum total of characteristic motives predominating in an individual. The formation and maintenance of sound character became one of the foremost practical problems of ethics. Both Bentham and Mill argued that institutions played an important role, but they differed in their assessment of which institutions were most important. Bentham argued that legal institutions were the most important since legal sanctions can be applied generally and in a consistent manner. Although James Mill agreed that social political influences shape character, he felt that character was fixed relatively early, and therefore he argued that education played the most important role in its formation. /4/

Both Bentham and Mill described the goals of conduct as well as means for attaining such goals. Bentham’s Deontology was a recipe book of conduct. the goal of such conduct is happiness which rested upon Prudence and Benevolence. Bentham felt that enlightened self-interest involves bringing these virtues into harmony with one another. /5/ James Mill had a somewhat fuller list of moral qualities to aim for. He cited the four moral virtues of the Greeks—Temperance, Fortitude, Generosity and Justice—as the goals of conduct. /6/
Within the utilitarian tradition there existed a conflict between the depiction of human motivation and what was considered desirable moral action. On the hedonistic account, individuals are motivated to maximize their own pleasure. On the other hand, the principle of utility stated that individuals should maximize social happiness. The problem was to convince people to align their own happiness with that of others. Bentham felt this could be achieved by employing supplementary sanctions which augmented or offset the pleasure and pain individuals derived from particular courses of action. Political reform—particularly the reform of the legal system—was designed to achieve this goal.

Mill, on the other hand, argued that individual and social interests could be aligned if certain qualities of the mind were developed through education. Most important of these are the virtues of generosity and justice. Apart from this programmatic assertion, Mill did not deal with the conflict between his account of individual motivation and his social values. Later thinkers, such as Bain, did address this problem in their discussions of the sources of "disinterested action."

Bain

Although I have maintained that Bain is the descendent of these thinkers, I have not fully described the similarities between their accounts of morality. We have already seen that Bain envisioned a special relationship between psychology and ethics. Scientific psychology was to redeem morality by purging it of the taints of
intuitionism and theism. The scientific treatment of freedom of will, of conscience and of disinterested action was to replace fruitless ethical controversy. Only one distinctly ethical question remained—whether the standard of behavior ought to be provided by social Utility (Utilitarianism), an instinct implanted within us (intuitionism), or a revelation of duty (Theism).\footnote{9} Although this question was retained for ethics, Bain's psychological treatment of "ethical" problems left no doubt concerning the superiority of the utilitarian position. Bain selected those problems for psychological (i.e., scientific) treatment which had been central to the utilitarian tradition, or which presented it with particular problems. Freedom of the will was shown to be illusionary by developing a deterministic account of voluntary behavior. Conscience was depicted as an outgrowth of experience, rather than of divine origin. Finally, he described the development of disinterested or altruistic action as an outgrowth of hedonistically--based action.\footnote{10}

Bain adopted the utilitarian view of motivation and attempted to give it a "scientific" basis by correlating pleasure and pain with nervous conditions. Bain's law of self conservation—that pleasure leads to an increase in vital force while pain leads to its abatement—provided a speculative physiological basis for the utilitarian account of motivation.\footnote{11} Bain also adopted the utilitarian view that it is rational to act in accordance with these promptings. He wrote, "when rational, we desire everything according to its pleasure value."\footnote{12}
Bain provided a much more detailed account of character than had the earlier thinkers. The basic elements of character were habits, rather than dispositions, and these habits were fixed when pleasure and pain became associated with particular movements or ideas. Bain revised the earlier account significantly by introducing the notion of temperament, involving biologically based characteristics. Individuals differed in terms of temperament: while one might be primarily intellectual, another is primarily affective and a third is primarily conative. According to Bain, individuals also differ in the degree of spontaneous energy they display. These temperamental differences provide the groundwork of character. Pleasure and pain operate upon temperament to provide the characteristic pattern of habits we call character.

In Bain's account, biological factors are one important source of character. Since he stressed the importance of early habit formation, he regarded the family and the school as other important contributors to the growth of character. The development of moral character involved other social factors; the most important being the social sanction of punishment. Bain adopted a position much like Bentham's in arguing that the discipline of society--the public dispensation of punishment and reward--constituted the single most important factor in the development of moral character. But here Bain provided a new twist, by arguing that conscience could serve this function in the absence of external sanctions. Childhood experiences of punishment (real or imagined) form the basis of conscience, which Bain described as "an imitation within ourselves of the government without us."
Bain clearly cast his lot with the utilitarians in asserting that the fundamental goals of conduct were self preservation and social security. The cultivation of particular moral habits was the means toward this end. Habits of temperance such as obedience and control of excessive emotions were stressed. Habits aiding in the attainment of maximal mental efficiency, such as the control of attention, were also regarded as important. Certain social habits were regarded as desirable, including the habit of authority, habits of promptitude, activity and alertness and habits of grace and polite demeanour. Such habits befit a man of industry, someone useful to himself and in harmony with the needs of society.

On a different level, Bain described general moral qualities which ought to be cultivated. The first of these qualities, prudence, encompassed industry, thrift and temperance, the factors he had emphasized in his discussion of moral habits. Justice and benevolence completed the triad.

Although benevolence was regarded as a virtue, some forms of benevolence are difficult to explain on a hedonistic account of motivation. Bain, probably more than early utilitarians, perceived the importance of disinterested action as well as the difficulty of accounting for it on the hedonistic view. John Stuart Mill had argued that the pleasure and pain connected with social feelings accounted for altruistic acts, but Bain, as well as many others, regarded this solution as unsatisfactory. Instead he admitted that the existence of such acts constituted a "glorious paradox," but denied that this
presented a problem for utilitarian moral theory. Such acts, he argued, fall outside the purview of moral theory because they transcend that which constitutes morality--duty./21/

Bain, however, did not rest content with this attempt to define the problem away, but went on to describe the psychological mechanisms underlying such acts. Sympathetic action, he argued, was a form of ideomotor action. We are able to form an idea of the pains felt by other people. When such an idea is vivid enough it leads on directly to actions which would relieve these pain./22/ This ideomotor account of sympathetic action did not even convince Bain for very long. In the final edition of *Senses and Intellect* he argued that such behavior was ultimately grounded in an instinct of sociability./23/ Of course this latter account was ad hoc and it clashed with utilitarian precepts. Although Bain attempted to solve one of utilitarianism's central problems within a psychological framework, he did not succeed in this attempt.

**Ward**

As we will see, Ward rejected most of the principles of utilitarian ethics. Those that he did not reject were significantly revised. His sharpest criticisms applied most clearly to Bain, since they pertained to the reduction of ethics to psychology. In contrast to Bain, Ward insisted that the two disciplines must be kept widely apart. Moral conduct, he argued, can not be reduced to the action of motives for it is determined in part by man's sense of worth, values, purposes, and ends. Against Bain, he insisted that science can as little analyze the
growth of conscience as it can the growth of logic and mathematics./24/ And while he granted that morality went beyond the phenomenal realm he argued, against Kant, that practical reason was as rational as pure reason. He added that neither constituted a topic for science./25/

As we have seen, Ward did not reject the idea that pleasure and pain were springs of action. He did argue that these states are much more complex than usually supposed and that pain plays a comparatively greater role than pleasure./26/ Pain and pleasure can not be quantified since they are subjective states and therefore relative to the individual at a particular stage of cognitive and volitional development./27/ According to Ward, to say that action depends upon pleasure and pain is simply to utter an empty truism. The more important question is what constitutes pleasure and pain for each individual.

In an different respect, Ward deviated completely from the utilitarian program. While individuals may seek pleasure and avoid pain, the production of happiness cannot be the criterion of moral behavior. Ward argued that seeking perfection is more reasonable than seeking happiness. The goal of moral conduct is, therefore, betterment of self./28/

While Ward had a great deal to say about moral character, he had a different view of the nature of character than had the utilitarians. While admitting that habitual patterns of action play a large role, he warned against the "fossilization of character" which could result from
placing too great an emphasis on the formation of moral habits./29/ Instead he stressed the control we have over our desires via our power of attention. Ward wrote that the "power by which we control our desires is precisely the same as that by which we control our thoughts—the power, by means of attention, to determine the movements of our ideas."/30/ The development of character parallels the development of control over attention. Since such control is gained through intellectual development, moral development rests upon intellectual development./31/

Ward's view contrasted in other respects with the utilitarian doctrine. Most importantly he resurrected the moral sense of the intuitionists writing,

To act thus and thus because conscience so bids is always the real moral reason, and only conduct so determined has any moral worth or rightness: the utility of the act is only the mark that leads the judicious man to select that at as appropriate to give his intentions effect. So regarded, it can only be called right in the sense of being fit, and when, under changed circumstances, other acts are appropriate its fitness will cease./32/

Furthermore, he deemphasized obedience to authority, because he regarded self-rule or autonomy as the heart of character. The goals of morality were justice and benevolence, with justice regarded as the more important virtue. Ward urged the cultivation of a "passion for justice" writing

It is from the sentiment of justice more than from anything else that we derive the conception of 'ought' which is the cardinal notion of all morality; ... it is impossible to train to fidelity to duty at all while the love of justice is absent./33/

he continued,

no theory of utilitarianism can dispense with the sentiment of justice. It is this, the spirit and love of fairness, that has
to be cultivated, the ability to estimate the balance of advantages is a very much smaller matter./34/

It is the cultivation of this sentiment of justice that plays a large role in the development of sympathetic and altruistic behavior. First of all, Ward regarded rational and moral action as distinctive forms of action. Such action was not prompted by desire, but guided by conceptions of general and distant ends—including "the conception of the happiness or perfection of self"—and by maxims as to the best means to achieve these ends./35/ This type of action was not possible until self-consciousness reached a certain stage of development, one in which the individual had a concept of himself as a person "having such and such a character, tastes, and convictions, such and such a history, and such and such an aim in life."/36/ According to Ward, such a self concept could only arise through social intercourse. He wrote "it is through the 'us' that we learn of the 'me'."/37/ One outcome of this process is that

the extra-regarding impulses are now confronted by a reasonable self-love, and in the deliberations that thus ensue activity attains to its highest forms those of thought and volition./38/

Ward was claiming that when we reach the stage where morality is possible, extra-regarding impulses already have a priority over self-regarding impulses. Our conceptions of how we ought to act are formulated within a social context, and there is every reason to believe that these conceptions will include regard for others. According to Ward we are not social beings because it may maximize our own pleasure (utilitarianism) or because of an instinct of sociability (Bain's revised account) but because our highest form of self-consciousness,—our personality—can only develop within a social
Sully's views on morality are much closer to Bain's than to Ward's. Sully clearly demarcated between psychological and philosophical treatments of morality. The psychological treatment involves explicating the mental processes involved, while the philosophical examines the objective validity of the ideas involved. Sully wrote:

"It is obvious that there is a considerable step from the psychological determination of men's actual moral approvals and disapprovals to the ethical determination of the proper object of these feelings."/39/

Despite this demarcation, Sully argued that the moralist must draw upon the results of psychology for theoretical and practical purposes. To improve moral ideals they must be brought into agreement with actual moral conceptions, and these can be discovered by psychology. And to improve moral practice, the moralist needs a sound understanding of the psychology of motives and volition./40/ Moreover, since the central moral question concerns "the nature and grounds of duty" rather than the "highest (individual) good," psychology has a central role to play. Our sense of duty is provided by conscience and psychology can account for the growth and operation of conscience./41/ Finally, altruistic action is related to sympathy, which psychology can also account for./42/

While Sully argued nominally for a distinction between ethics as psychology, and ethics as philosophy, psychology, in fact, appropriated most of the central ethical problems. Like Bain, Sully argued that it was psychology's task to provide accounts of voluntary action,
conscience and disinterested action.

Furthermore, Sully argued that the utilitarian standpoint provides us with a valuable perspective on these matters. In an early article, the ex-divinity student, Sully, described functional similarities between religion and utilitarianism. He noted that certain Christian practices—prayer, private meditation, self-scrutiny—had a value apart from the religious doctrines they are associated with. These practices are valuable because they imply that "a good and worthy life is something for the mature man to work out himself."/43/ Moreover, these exercises do not lose their values if we adopt a utilitarian perspective. According to Sully this relative and empirical view of morality makes the value of such exercises even more apparent. He wrote:

Thought . . . directed to the ever varying and unique problem, how to realize the highest possibilities of human life; is to the spiritual life what nervous development is to the physical organism, the means of the highest—self-adjustment to environment./44/

and

the utilitarian theory presents us with the most complex intellectual problem in the discovery of duty and the appreciation of excellence./45/

Sully, like other utilitarians, held a hedonistic view of motivation. Like Bain, he tied the experiences of pleasure, and pain to nervous action. According to Sully, moderate stimulation leads to pleasure, while deficit or excess of stimulation leads to pain./46/ He maintained that there were instinctive impulses to seek pleasure and avoid pain and that these underlie desire. Like Bain, he asserted that strength of desire is proportional to the magnitude of pleasure.
anticipated, but he did note that there were a number of limiting conditions to this relationship./47/

Sully rather carefully analyzed the various meanings of character and adopted a view of it midway between that of Bain and Ward. The word character, he noted, is used to mark off differences in mental qualities, more particularly those "qualities, belonging to the active side of mind."/48/ Sully followed Bain in arguing that character, in this sense, was a product of a person's psycho-physical nature or temperament and the selective development of certain of these idiosyncrasies by environmental forces./49/

Sully noted that there is a further sense in which the term is employed to connote "good character." This moral sense of character implies "the disposition to think and feel (as well as to act) in ways conducive to the ends of morality."/50/ Social discipline and education work to develop character in this sense.

In describing moral character as comprised of organised habits and conscious reflection, Sully steered between the views of Bain and Ward. On the one hand, he maintained, excellence of character consists in the stability and dominance of certain virtuous habits. However, these dispositions suffice only insofar as they are suitable for particular physical and social conditions. When these conditions change, or when our values clash, reflection is required in order to decide upon the morally correct course of action. In such cases, character is judged by the quality of such conscious reflection. Sully maintained that sound character involves both these features. He wrote:
a perfect character, is one that combines promptitude and even a
certain impatience of reflection in cases allowing of, and
calling for, rapid and partially automatic responses, . . . with
a readiness to pause and reflect as soon as new features, and
especially an unfamiliar complexity, present themselves./51/

For Sully, duty is the goal of conduct. What that duty consists in
may be seen from the virtues he identified. These included private
virtues, such as temperance and prudence, and public ones, such as
veracity, justice and benevolence./52/

Sully addressed the problem of sympathy, specifically noting that
in its "active phase" it leads to disinterested or altruistic action.
To account for sympathy, Sully, like Bain in his later work, posited an
instinct of fellow-feeling./53/ But this just provided a grounding;
sympathy is a much more complex affair. Sully argued that true sympathy
is not possible until we have reached a stage where we can imagine
another's feelings and relate them to emotional states we have
experienced. Sympathy is an intellectual, emotional and active process.
It involves our ability to understand another's feelings; to "share in"
those feelings and the active desire to further the other's
happiness./54/

In examining the positions of these three thinkers we can see that
utilitarian ideas continued to have an impact upon their psychological
doctrines to varying degrees.

All three of these thinkers argued that pleasure and pain were the
main determinants of action. However, Ward had a considerably more
complex view of these feelings than did Bain and Sully. On Ward's view
the calculation of pleasure-value needed to employ the felicific
calculus would be simply impossible.

Although Bain adopted the utilitarian view of character as fixed disposition or habits, Sully and Ward, in varying degrees, shifted away from this view. Ward stressed the role of conscious reflection as an element in moral character and Sully admitted that such reflection played an important role in certain situations.

Finally, Bain and Sully both followed the utilitarian practice of attacking moral issues as scientific problems. Ward, particularly in his later work, denied that this could be done and called for a sharp distinction between psychology and ethics. We have seen this scientific reduction attempted (and criticized) in the case of sympathy; now we will examine their accounts of freedom of the will and the related problem of moral responsibility.

Freedom of the Will

The early utilitarians denied that there was anything like acts of "free will." There were only motives operating to determine action, and action always followed the strongest motive. This view of a completely determined will clashed with traditional accounts of individual moral responsibility, which had been assumed to be the basis of good conduct. This clash was not felt very strongly by the early utilitarians, because they believed that the manner in which social and political institutions dispensed sanctions was the primary determinant of conduct. If anything, their determinism led them to a sense of greater urgency in reforming those institutions.
The early faith in the power of institutional reform faded and the need to acknowledge some form of individual moral responsibility reasserted itself in the writings of John Stuart Mill. The younger Mill asserted that we have a power of self-determination, that the individual himself is one of the agents at work in the forming of character. The feeling of moral freedom stems from this power to modify our character. But because this desire to modify our character is elicited by experience, the determinism of motives is not violated.

Bain endeavoured to explain away the problem of free will by providing a scientific account of volitional phenomena. His "refutation" of free will rested on the claim that in no case of human action yet discovered was there an exception to uniform causation. Although Bain admitted that we have a consciousness of freedom, he denied that this implied a break in the invariable sequence of desires, motives and actions that constituted volition. Our sense of effort, of power and the sense of flat which accompanies a decision made after deliberation, are all the product of conflicts between motives. In each case volition follows the course dictated by the strongest set of motives. Nor was Bain willing to admit that we have any power of self-determination that violates uniform causation. The only sense in which we can speak of self-determination is as the "opposition of permanent and enduring motives to temporary and passing
Ward

Ward, of course, both admitted that we have a self and argued that knowledge, feeling, and volition are all self-determined. When we look at what he meant by this we find a definition remarkably like Bain's: "freedom is held to imply a certain sovereignty or autonomy of self over against momentary propensities and blind desires."/60/ Where Ward differed from Bain, particularly in his later works, was in his view of how such actions came about. Instead of arguing that motives prompted the behavior, he maintained it was guided by maxims or principles. Against "the rigidly deterministic position" he pointed out that motives are never merely so many quantitative forces playing upon something inert, or interacting by themselves. At the level of self-consciousness especially motives are reasons and reason itself a motive. In the blind struggle of so-called "self-regarding" impulses might is the only right; but in the light of principles or practical maxims right is the only might./61/

Neither in his earlier, nor his later work, did Ward deny that nature and mind were law-like. What he argued was that these laws did not fully constrain action and that within these laws there was room for the operation of a form of freedom guided by reason. Ward offered a spiritualistic view of the world as an alternative to the mechanistic, and maintained that only practical outcomes could prove the superiority of one world view over the other./62/
Sully

Sully returned to the "rigidly deterministic position" of Bain, although he was somewhat more cautious about the implications of this scientific determinism. He pointed out that the scientific investigation of voluntary action could never really say anything about the reality of metaphysical freedom. However, after asserting that all action has a sufficient motive, and that our consciousness of freedom arises from more intricate-conative processes, he concluded that the study of consciousness offered no grounds for the supposition of metaphysical freedom. Unlike Bain, Sully did not argue that the problem of freedom of the will is merely a psychological problem. Nevertheless, they reached the same conclusions about the possibility of freedom.

Sully spoke of self-control rather than self-determination. Self-control was possible because

the later and mature stage of volition implies a systematic and intelligent regulation of the earlier and more instinctive impulses through the stable formation of motive-ideas and motive-principles.

Although Sully mentioned the operation of motive-principles these principles could not function in the same manner as Ward's. For Sully the attainment of self control presupposes a process of physiological development.

The "higher nerve centres" function to stimulate, or to inhibit, action, feelings or thoughts. Such a view of the underlying process would have been anathema to Ward who would have denied that principles
can be motives and that they could be reduced to nerve centres in the brain.

Summary

It is clear from this examination of issues related to morality that Sully's position is much closer to Bain's than to Ward's and that Bain clearly lies within the utilitarian tradition. The differences between these three thinkers on such issues ought to be reflected in their accounts of education to which we now turn.

Education

Each of these three thinkers made contributions to education from the standpoint of psychology. Bain's text Education as a Science (1879) can be regarded as the first English psychological work on education.66/ During the 1880's both Ward and Sully were lecturing upon psychology at teachers' training colleges. Ward's lectures were later published as Psychology Applied to Education (1926).67/ Sully recognised that there was a new market for psychological works and prepared his text Outlines of Psychology (1884) so it could be used in teacher training colleges. Two years later he published Teacher's Hand-Book of Psychology (1886).68/

These works are very different in character, which makes comparison of their views difficult. Bain defined education quite narrowly as "the work of the schools" and much of his text dealt with organizational matters within schools. The polemical aim underlying the work was the refutation of the faculty view of mind and the educational practices
based upon that view. Ward lectured on the theory of education so little attention was paid to specific organizational matters. He defined the task of education as the educating or drawing out of the powers of the mind, including both intellectual and moral powers. Almost half of Ward's lectures were related to moral development. In contrast, Bain argued that moral education was not a central task of the school.

Unlike Bain, Sully had a broad view of education. He wrote that education involves the development of the "natural powers of the child, so as to render him able and disposed to lead a healthy, happy and morally worthy life." Sully explicitly stated that education concerns more than just the training of the intellectual faculties.

Psychology and Education

Bain, Ward and Sully all maintained that psychology had important bearings upon education. For example, psychology traced the relations between physical fatigue and inattention, relations teachers must take into consideration to maximize the effectiveness of instruction. Psychology described the course of mental development, so that appropriate educational tasks could be assigned at different ages. And psychology described the fundamental mental operations which must be understood by anyone wishing to shape or guide mental development. All three of these thinkers accepted the utilitarian idea that psychology is of value for practical enterprises, and stressed its particular value for education. However, while Bain and Sully took this relationship for granted, Ward examined it more closely. Although he concluded that
psychology could and did have something to offer to education, this relationship was examined, not simply assumed.\footnote{73}

Of particular importance for their accounts of education was the view each held of the nature of the mind and the development of such processes as perception, memory, imagination, etc. An overview of the accounts of these processes as they bear on education is in order.

**Bain**

Bain's chief aim in *Education as a Science* was the refutation of the faculty view of mind and criticisms of educational doctrines based upon this view. In contrast with James Mill, Bain adopted a modified Helvetian view of the mind. The mind was not depicted as a tabula rasa. Underlying the mind was the brain, which had its own distinctive characteristics. As we have seen, Bain traced individual differences to differences in this underlying physical substrate. In terms of character, the fundamental differences stem from the predominance of the intellectual, emotional or volitional aspects of mind. Having greater educational importance were differences in the amount of spontaneous energy, in the power of discrimination, and in the degree of natural retentiveness.\footnote{74}

Bain argued that these underlying physiological or temperamental differences must be taken into account by educators. The development of the mind, or more accurately, the growth of the brain, places limits upon what can be effectively taught at any stage. For example, in the early stages of development, spontaneous activity and emotions are very
strong and block the effective use of reason./75/ Later, during the period from 6-10 years of age, natural retentiveness is maximal. Bain urged educators to take advantage of this heightened plasticity and focus on the acquisition of language and the learning of facts. He added that moral impressions are of great value at this point, and that maxims of behavior may be acquired, even if not fully understood, at this age./76/

Bain distinguished between the psychological and the logical order of subjects, the former dependent upon the stage of development; the latter upon logical characteristics. Although this distinction is valuable he in fact gave greater emphasis to the logical order of subjects. The psychological order was determined by the facts of brain growth. The growth of the brain determined at which point instruction on certain topics should begin. However, once the proper stage of development is reached, the logical order of subjects regains priority. The principles governing this logical order included the following: the simple should precede the complex; the particular, the general; the indefinite, the definite; the unqualified, the qualified; the empirical, the rational; the outlines, the details; the corporeal, the incorporeal./77/

It was Bain's view that the most difficult of these transitions is the jump from the particular to the general; from the concrete to the abstract. He argued that express teaching is required to reach higher levels of abstraction and offered concrete suggestions for facilitating this transition. The recommended process involved presenting a large
variety of exemplars of the concept. Clear examples should be provided first, with the gradual introduction of a greater variety of examples. These must be presented systematically, so that similarities and differences among cases can be noted. Bain stressed the importance of exemplars in concept formation because he held that an image or representation was an essential part of all our concepts. Bain also described the role schools could play in the development of other psychic functions. Although he placed great stress upon the value of accurate observation, he argued that the development of perception is not a school matter. On the other hand, the development of memory was regarded as the primary task of educators. Bain argued that we can not cultivate our "memory power," because retentiveness is a predetermined physiological characteristic. Instead, the educator's task is to foster certain classes of acquisition by employing the laws of association; i.e., to stock the memory with useful and accurately ordered images. Such a well stocked memory provides the bases for the "development" of other mental functions. Bain argued, for example, that while creative imagination can not be trained, a good supply of images is necessary for its operation.

In discussing imagination, Bain distinguished between our conceiving faculty and creative imagination; the former largely intellectual and the latter more closely related to emotion. Neither of these powers can be directly trained by the schoolmaster, just as memory could not be trained. But the schoolmaster must be on guard against the excesses of imagination and seek to subdue
them whenever possible. Bain echoed Bentham's distrust of the imaginative processes of the poet and the artist. He advised the schoolmaster to repress the extravagant emotional preferences, and favour the complete and impartial exercise of that really great function of intellect—the power of conceiving, in all the exact lineaments and proportions, scenes and events that have not been experienced—the historical imagination as distinguished from the poetical. Without rejecting the aid of emotional interest, an instructor endeavours to counter work its bias and particularity, not to speak of its distortion and falsification of reality./84/

Judgment, like imagination and memory, cannot be trained by the schoolmaster. According to Bain, it arises only after prolonged experience and study in particular departments of knowledge. Reasoning—a higher form of judgment—can be trained by a thorough study of logic./85/ Although Bain maintained that moral development fell outside the province of the school, he did argue that the schoolmaster plays a limited role as a moral teacher./86/ According to Bain, the teacher can indirectly influence moral development in a variety of ways. He or she should, for example, provide illustrative cases of the various virtues and vices, and these cases must be realistic. Students should be taught the important distinctions between types of motives (self-regarding vs. social) and be helped to develop the "language and diction necessary for moral suasion." Bain made a number of practical suggestions regarding the conduct of such lessons, including avoiding direct lecturing and appealing to the self-regarding motives./87/

Bain's social values can be discerned in the recommendations he made for the teaching of morality. The teacher must persuade the young to "abandon ease and self indulgence for labour."/88/ Social problems
must be discussed but they must not be oversentimentalized. For example, when discussing poverty, the teacher must "dwell on its remedial side." Bain urged that the facts of inequality be presented realistically, and that the teacher must acknowledge the "fact" that inequality "has its first legitimate justification in superior industry, energy and ability" and that "affluence is the fruit of an industrious career."/89/

Ward's view of the nature of mind and its development differed radically from Bain's. Although Ward was not a faculty theorist, the emphasis he placed upon power of attention and its development made his educational theory much more similar to faculty accounts than to Bain's. For Ward, the primary goal of education was not instruction, or the stocking of the mind with a large quantity of ideas; but training, or the development of the powers of mind. Such training was envisioned as a process of directed growth resting upon the spontaneous activity of the child./90/ Although Ward described the child as "advancing under the prompting of its own growing powers," the teacher could facilitate this development, particularly if he or she understood certain principles of psychological development./91/

For Ward, psychological development was not simply brain growth. Underlying Ward's depiction of psychological development was an organic metaphor—the mind unfolded in stages much like those we observe in biological development. In contrast to Bain, Ward had a true stage view of development. Not only did "development" fix the time at which
studies could be introduced; the stage of development determined the manner and order in which they would best be assimilated./92/

Ward outlined three stages of intellectual and moral development. The first stage, lasting from 0-7 years of age, is characterized by concreteness. During this stage, infants are mastering the rudiments of perception and movement and the language which specifically relates to these functions. This stage is described as concrete, because there is little imagination and less thought./93/

During the second stage, lasting from 7-15 years of age, the development of conception begins. The development of this process is aided by the development of language, reflection and imagination, and by the clearer perception of the external world. At this stage, growth is restrained by limitations in our control of attention. During the latter part of this stage we develop our sense of time (including the ideas of past, present and future) and our consciousness of self. These developments make it possible to work with more abstract concepts during the next stage (15 years and older). Although more abstract thinking is possible during this stage, Ward argued that it is moral training, not intellectual training, that should be given priority here./94/

In all of these stages, interest plays the primary role in intellectual development. It is the teacher's task to secure interest in a wide variety of objects. Interest is important because it determines the movements of attention, which, in turn, leads to the elaboration of the presentational, memory and ideational continua./95/ It is the training of this power of attention that is the
primary task of intellectual education.

For Ward, attention played an important role in all the intellectual processes including perception, memory, imagination and reasoning. One of Ward's original contributions was to reconceptualize perception and memory as intellectual processes. Ward argued that intellectual training begins with sensory objects, because the perception of objects involves elaborating our sensory perceptions to more complex detailed mental objects.\footnote{96} Attention plays a role here, because it is in the perception of objects that our power of attention is first exercised.

As we have already seen, Ward depicted the memory continuum as an outgrowth of the presentational continuum developed through perception. This view of memory differed radically from Bain's organic view of memory. Because the memory continuum results from the further elaboration of the presentational continuum, Ward argued that the cultivation of understanding ought to precede the cultivation of memory. One of the factors involved in this elaborative process was association by contiguity. According to Ward, ideas could be associated either in the original order presented, or in an order determined by the movements of attention. Bain had insisted that the order of acquisition determined the order of ideas, due to the operation of contiguity. Ward pointed out that these original links inevitably fade away due to the "disintegrating action of obliviscence."\footnote{97} According to Ward, it is not the original order of impressions that determines the order of ideas, but the order in which we reiterate, or rehearse, these ideas.
We can, of course, reiterate the sequence in its original order; this is what is generally meant by memorizing. Ward, however, argued that such a procedure had limited value. More often it makes sense to forget these "original, more or less accidental associations," and to reassociate ideas "according to their deeper and more important relations."/98/

This latter process of discovering the deeper relations among ideas is usually regarded as the function of understanding, and as a process independent of memory. Ward denied the distinction between memory and understanding, and argued that the only difference between the two lay in the mode in which the order of associations is determined: "whether it shall be that of the original presentations or an order determined by the mind for itself."/99/ Furthermore, he maintained that the latter mode of determination—the one formed by the mind itself—leads to associations that are stronger and more efficient./100/ Ward wrote:

Train to attentive and accurate understanding and leave the memory to take care of itself is what I should say . . . . you cannot exercise their understanding without improving all that is good in memory; but, in making it your first concern to strengthen their memories . . . the chances assuredly are that you may dwarf their intellects./101/

In Ward's account imagination, not sense, furnishes all the material for higher processes of thought. It does this in a two-fold manner. In its passive aspect, imagination simply refers to the rising of representations in consciousness. The order of these representations—the stream of consciousness—is determined by the intensity of the images, their compatibility, certain verbal associations and our power of attention./102/ This later factor
predominates in the active aspects of imagination. In active
imagination, attention operates to rearrange the material we receive
through our senses. The more adept we are at rearranging this material,
the more successful will be our elaboration of representations and the
more rapidly will intellectual and moral development progress./103/

Ward's endorsement of the power of active imagination contrasted
sharply with Bain's dictum that thought processes must closely follow
reality and his distrust of creative imagination. Ward did admit that
some such concerns were justified, as "an extravagant and ungoverned
imagination is antagonistic to the reasonable in thought and
action."/104/ However, instead of shackling imagination, Ward
recommended that we learn to govern it. In contrast with Bain, Ward
insisted that

A quick and lively imagination is as dispensable as quickness or
fineness of sight and hearing; and, like these can only be
improved by exercise./105/

Imagination lies at the heart of thinking in Ward's account. In
thinking the movements of representations, which normally are under the
control of imagination, receive additional guidance from language.
Language aids in the control of these imaginative processes and
increases their efficiency, but Ward denied that there was a one-to-one
correspondence between symbols and ideas or between the relations of
symbols and the relation of ideas./106/ Since actual thinking processes
cannot be reduced to the manipulation of symbols, the laws of logic are
not the laws of thought, even though they may help us improve our
thinking. Ward pointed out that there is a wide gap between actual
reasoning processes and the laws of logic. Instruction in logic may
help us make our thought more consistent and more systematic but it can not teach us how to think./107/ We learn to think by learning to control our imagination. Despite Ward's emphasis upon imagination, he argued we can distinguish between thought and fancy by the aims which guide each process. The aim of thought is to produce truth, while the aim of fancy is to please, or to produce beauty. Although thought is constructive, it constructs under the regulative idea of truth./108/

On Ward's account, individual differences arise from differences in the employment of attention. These differences may be primarily intellectual--due to differences in the development of the various continua--or they may be moral. These latter differences--comprising differences in tastes, dispositions and characters--are wider than the intellectual. Ward wrote "intellectual differences are largely a difference of degree, but moral differences amount to differences of kind."/109/

At the heart of moral conduct, for Ward, was our power of reflection. Moral development and intellectual development both involve the same underlying power, although they need not proceed in parallel. According to Ward moral training should "make the young masters of themselves," through the development of self control and "lead them to consecrate themselves to work."/110/. Ward stressed the necessity of self control, but also the value of work for humans. The teacher's primary job is to help students identify interests that they can work on continuously.
While Ward noted that habits played a role in character, he did not place much emphasis upon the shaping and reshaping of such habits. He warned that too great an emphasis upon training habits can defeat the true goal of moral training. He pointed out that

We want to avoid imprisoning the soul in a set machinery of habit as the genius in the Arabian Nights was sealed up in a bottle; we want to have our habits behind us fixing our work, not before us barring our advance./111/

As with Bain, Ward's social values influenced his view of morality. Ward maintained that in relations with others, justice and benevolence should be the guiding principles. The teacher should cultivate a "passion for justice" from the outset because "love of justice is the foundation of the social virtues." Initially, all that can be done to this end is "to treat them [pupils] fairly, check their own unfairness, and encourage to a generous unselfishness."/112/ When students have attained a degree of self-consciousness "the sacredness of justice should be taught, and justice be everywhere given and demanded till an earnest zeal for it be evoked."/113/ Nor should obedience to authority be one of the primary goals of moral training. Ward acknowledged that it is sometimes necessary to command obedience "for the good of the community and the interests of right and order" but urged that this enforcement not be capricious./114/ He wrote "there should be no appearance of personal inclination other than that of respect for the law." and he repeated Kant's rule: "Make no one a mere means to your own ends, but regard everyone as an end in himself."/115/
Sully

Sully's account of the mind combined a view like Bain's with some of the newer accounts of mind, like Ward's. Like Bain, he insisted that we had to take the brain and nervous system into account in our treatment of mind. Unlike Bain, he gave inherited instincts a large role to play. Like Ward, he regarded attention and interest as central to the mind's development, and he viewed mental development as more complex than brain maturation. Because Sully combined both these views, the number of factors requiring the teacher's attention was rather large.

Along with his complex view of the mind, Sully had a complex view of the sources of individual differences. Like Bain, he argued that there could be basic differences in temperament and differences in retentive power. Like Ward he spoke of the differences which arose from interest patterns. Sully also mentioned differences in attentional style and differences in mental power (including memory, imagination and reasoning). Sully regarded a recognition of these differences as essential for effective education and discussed various techniques for testing intellectual faculties. He wrote:

One of the most hopeful developments of modern psychology is the attempt to reach an exact quantitative estimate of mental process.

and that

a sound scientific method of testing the strength of children's intellectual faculties has now become possible. It is greatly to be wished that by the cooperation of teachers and psychologists a definite scheme of measuring faculty may soon be developed.
Sully described mental development without tying it wholly to brain growth. Like Ward, he argued that the student's stage of development determines when activities should begin and how far they can be improved. Sully also insisted that those faculties that develop first must be exercised first, and that the development of higher powers rests upon the development of the lower.

As rough guides to the process of mental development, Sully presented two schemes of development: Beneke's and Pfisterer's. The latter scheme has four stages: (1) 0-2 where bodily life, sensation and instinct are in the ascendancy; (2) 2-7 where memory and imagination are active; bodily activity is abundant and the germ of self-consciousness are first manifested; (3) 7-14 where intellectual processes gain in steadiness under volitional control, self-control begins to exert itself, and social, intellectual and

Sully stressed the importance of careful training in sense observation as preparation for the development of higher thought processes. Echoing Bain he wrote:

The special aim of the educator should be to awaken a warm, wide-reaching interest in objects, to foster a jealous regard for accuracy and to develop a habit of close, painstaking observation. In this way he will be laying the foundation of that higher faculty, the trained observation of the expert, whether this be employed in the scientific examination of physical phenomena, or in the artistic study of nature.

Sully, like Bain, emphasized that the "training, exercise and discipline" of children's memory was an important portion of intellectual education. Like Bain, he insisted that a well stocked memory is the necessary condition of all the higher operations of the
understanding. Like Bain, he argued that the early period of school life should be devoted to learning concrete facts, as it is the period of "maximal plasticity."/123/ As we will see, Sully provided tips on how the teacher should go about training the memory.

Although Sully did not exalt imagination to the degree Ward had, he did argue that imaginative power played an important role in mental processes. Imagination is required for the elaboration of new ideas, as well as to attain insight into the thoughts and feelings of other people./124/ Deviating sharply from the utilitarian position, Sully recommended the study of poetry and imaginative literature in order to foster the development of imagination./125/ On the other hand, Sully retained some of the old scruples about unrestrained imagination. He warned that unlimited indulgence of imagination carries moral and intellectual dangers and suggested that the educator remember that "imagination, like fire, is a good servant but a bad master." But he added that

Educators have been wont, perhaps, to overestimate the evils of children's flights of fancy . . . It is only in special cases, where there is a specially lively fancy and a too tenacious hold on the imaginary world with a corresponding want of interest in adjacent realities, that decided interference by the educator is called for./126/

Sully's account of concept formation, or the process of abstraction was virtually identical to Bain's account./127/ In his account of the training of judgment and reasoning, he placed greater stress upon the initiative of the learner. The educator, he wrote, should draw out the child's power of judgment about simple matters in the child's own experience. Reasoning powers could be trained by carefully, and in an
interesting manner, answering the child's spontaneous questions. A habit of inquiry should be fostered by questioning the child about the causes of what happens around him. At the higher stages, logic can aid in this line of instruction./128/

Sully's interest in aesthetics led him to regard the culture of feelings as an important part of education. Like Bain, Sully noted that the teacher must attempt to weaken undesirable feelings, Sully also pointed out that the teacher had the task of strengthening social feelings and the "abstract sentiments."/129/ For Sully, sympathetic feeling should be developed because it played a role in a broad range of areas. Imitative sympathy, for example, led children to reflect feelings displayed by their parents and close companions. Such sympathy can be of educational value if the student adopts the enthusiasm of his teacher./130/ Finally, as we have seen, sympathetic feeling is central to the development of morality.

Like Ward, Sully maintained that the development of will and moral conduct is an integral part of any plan of education. Because he treated the problem of will as the problem of voluntary action, he held that the first stage of training of the will involved physical education./131/ Since action is determined by motives in Sully's system, the training of the will involves shaping good conduct by supplying the proper motives. Sully asserted that "moral discipline is . . . based on the power to enforce obedience by punishment," but warned that severe punishment will never produce "conscious and willing obedience to authority."/132/ Although Sully stated that the habit of
obedience is "one chief virtue of childhood" he stressed that such obedience to personal authority is not an end in itself. He wrote that "commands are a scaffolding which performs a necessary temporary function in the building up of a self-sufficient habit of right conduct."/133/

For Sully, character was not simply built up from habits. simply upon habits. The power of reflection also had an important role to play. For this reason the educator must encourage reflection and judgment and strengthen the "higher emotions" which may operate as motives in such cases./134/ Sully suggested that play had moral value as it provided an arena of activity unrestrained by authority, yet offering opportunities for reflecting and choosing. He insisted that in the moral as well as in the intellectual region it is indisputable that the child's faculty is far more effectively exercised when he discovers a truth for himself, than when he is merely taught it by another./135/

Summary

Each of these thinkers regarded psychology as relevant for educational theory. In citing psychological principles relevant for education, each displayed their characteristic views. Bain stressed stocking the mind with clear images and ensuring that thought was systematic and closely tied to reality. Although he stated that educators must take into account the mind's development, it was really brain growth that mattered, and this only in a limited fashion. His utilitarianism was displayed in his assertion that one of the primary tasks of the educator is to adjust pupils to a life of industry, instead
of their preferred one of ease and self-indulgence.

Ward stressed the need to train the effective use of attention through the development of interests. "Creative imagination," involving the use of attention, was seen as the key to all intellectual activity and this activity played an important role in shaping conduct. Ward's psychological principles led him to pay closer attention to individual differences than had Bain. While both Bain and Ward described encouraging work as one of the tasks of the educator, they described it in very different ways. Ward described the goal of "consecrating oneself to work" as a type of personal mission, whereas Bain's exhortations to industry are seen as a necessary corrective to man's real nature.

Again Sully displayed a mixed position. Like Bain, he stressed the need for careful observation and for a mind well stocked with images. Like Ward, he held that imagination played an important role and displayed a greater awareness of individual differences.

Educational Goals

Bain

In defining the scope of education and identifying educational goals there were wide differences among these thinkers. Bain defined education the most narrowly, perhaps in reaction to the overly broad definition of James Mill. Education is schooling, he wrote, and the tasks of education are the tasks of the school. /136/ The stated goal of education is to "build up the acquired powers of the mind," but for Bain
One of the main goals of Education as a Science was to provide an alternative to faculty views of education. He therefore explicitly rejected the idea that education should aim at developing the powers of faculties of the mind. Information was what was required; particularly information of great practical value. Arithmetic operations, language usage, historical and geographic facts, facts related to "the arts of life," such as cooking, and some scientific knowledge was what was called for. Moreover, such a course of studies was not restricted to "mere information" for "when we touch the higher degrees [of such information], we come upon something that involves the best faculties or forces of the mind."/138/

Although Bain talked about individual differences, the fostering of individuality was certainly not one of the goals posited for education. For example, he recommended the preparation of manuals listing the prevailing errors and vulgarisms in the district which were to be corrected by the teacher./139/ The "habituation to obedience" was described as the first and greatest part of moral education./140/

While Bain was clearly not proposing a system of education for the aristocracy, he was not particularly interested in the working classes either. He tacked on a few paragraphs about the education of the "labouring population" which recommended that they receive as much "methodized knowledge of the physical and moral world and as much literary training as their time will allow."/141/ This cursory recommendations was followed by the statement that "it seems vain to
discuss any more special adaptation to the supposed exigencies of the
general mass of people."/142/ Bain certainly had less of the democratic
spirit than his predecessors.

Ward

In contrast with Bain, Ward sounds like a supporter of the faculty
view of mind. He argued that the task of education was the development
of the faculties of the mind, and in this regard cited John
Locke./143/ Ward distinguished between training, which seeks to develop
the powers of the mind; and instruction, which seeks to enlarge the
mind's possessions. Against Bain, Ward argued that instruction is the
surest way to deaden intellect because it requires a solely passive and
receptive attitude. Students exposed to such a regimen are likely to
end up like a certain species of ants who were

fed and cared for by slave-ants of another species so long, that
one of them . . . kept alone, shewed no signs of eating in the
midst of plenty, and would certainly have been starved to death,
had he not put in a slave, which at once fell to, washed and
brushed the idler, and filled his mouth with food./144/

For Ward, this type of education had even more serious limitations for
it rendered the teaching of virtue impossible. Ward wrote "to make your
pupil virtuous, you must not preach to him, but lead him to
practice."/145/ And for Ward, the teaching of virtue was one of the
primary goals of education. He wrote:

Moral vigor, moral worth, are the primary things; and next comes
such exercise and culture of physical and mental resources, as
shall render these through life as efficient as
possible . . . the _theory_ of education is a systematic
exposition of the methods by which this end is to be
attained./146/

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Elsewhere, Ward argued that the aim of education was the development of such personal moral goals as self-autonomy and the consecration to work, along with social goals as benevolence and justice. Education should help the individual on the road to perfectability of self, but it must also help fit the individual for their role as citizens within a community. Ward described the conflicting claims of society and individuality and recommended that teachers take equal notice of each; not sacrificing the community for the individual nor vice versa.

Nevertheless Ward regarded the development of individuality—for individuals of all classes—as a far more central goal than had Bain. In two essays written at a later period, Ward further developed his idea that the first task of education is "to draw out and develop individuality." Employing an analogy from evolutionary theory he pointed out that progress depends upon variety, the variety that can only be provided by fostering individuality. Ward repeated his fundamental educational dictum "train the mind and the healthy assimilation of knowledge will take care of itself" and added that "the assimilation is healthy assimilation only when the individuality of the student is fostered to the utmost."

Nowhere can Ward's progressive views be seen more clearly than in the essay "Personality the Final Aim of Education." This essay was an impassioned plea for the educational enfranchisement of every child; that is, for the removal of every hindrance and the provision of every facility, so that freedom of thought and action may be displayed within the steadily enlarging bounds of juvenile life.
Ward wrote this essay at a time of social, political and educational ferment after World War I, when people were re-examining the means of promoting a civic and moral life. Education, involving the shaping of character, was once again seen as the solution to social problems. The eugenacists that were active during this period argued that individuals should be trained, intellectually and morally, to meet the needs of society. Ward replied that education designed to meet perceived social needs would very likely not be education in the individual's interest. /153/ He wrote that if you aim at inculcating the principles of conduct that now predominate . . . you will fall sadly short of educating to the utmost the highest possibilities of the rising race. In plainer words the type of human being that would suffice to meet the present effective demand of society is not the highest type, is very far from it. /154/

World War I had forcefully impressed the English with the need for improved scientific education and for better national defense. One of Ward's concerns was that such demands could lead to the sacrifice of the humanities and other "higher studies." He warned that a stifling of individuality would result if education was designed with "a view to a more effective economic rivalry," or if military training was provided as a remedy against "the growth of syndicalist ideas and strikes." /155/ He wrote:

Only, in times like the present, when a thorough reconstruction of society is imperative, have men ever realized the full significance of this simple truth that society has been, and always will be, what its members make it. /156/

Finally, Ward condemned the waste of human personality that had resulted from the nation's past neglect of mass education. Again, he insisted that only when we educate for the end of the individual, rather than for
the ends of society, can social justice and social progress be attained.

Ward wrote:

The value of a single man or woman of open mind, independent judgment, and moral courage, who requires to be convinced and refuses to be cajoled, is only concerned to be right and not afraid to be singular, deferring to reason but not to rank, true to his or her own self, and, therefore, not false to any man—the value of such a man or woman, I say, is priceless: a nation of such would leaven and regenerate the world. That is the true national education at which England should aim./157/

Sully

Sully, like Ward, defended education in a broader fashion than had Bain. Education, he wrote, seeks "to develop the natural powers of the child" through "a systematic application of external forces and agencies, according to a definite plan and an orderly method."/158/ Education aims at some end (disposing the child to lead a "healthy, happy and morally worthwhile life") and is concerned with the training of the intellectual, the moral, and the aesthetic faculties./159/ Sully maintained that education involved training, rather than instruction; that it "has to do with . . . developing the mind and its various activities, and not merely with putting something into the mind./160/ However, he did maintain that the training of memory is the central part of intellectual education, and that a well-stocked memory is the essential condition of the operation of higher intellectual functions./161/ In emphasizing these factors he come closer to Bain's views of "education as instruction" than to Ward's view of "education as training."
Sully, like Ward, also emphasized the importance of individual differences in education. In his account such differences had a two-fold impact. First, the effectiveness of education depends upon teachers taking into account differences among their students. Sully noted that there was no satisfactory classification of character, but looked to cooperation between teachers and psychologists for the development of one./162/

Secondly, education should have as one of its goals the development of individuality. Sully wrote:

Variety of individual development is in itself valuable... The problem of respecting individuality in educating the young, of securing a sufficient diversity of studies in our school system, is probably one of the most urgent practical educational problems of the hour./163/

One way to achieve this end is to adapt training to the differences among individuals./164/ Like Ward, Sully argued that the freedom to develop characteristic lines of thought and special directions of feeling was an essential part of education. However Sully did warn that in encouraging individuality we must guard against eccentricity as well as incompleteness and one-sidedness of development. While individuality should be fostered, the teacher should also seek to secure "a wholesome conformity to the normal type of mind."/165/

Sully's social values are not clearly laid out in his handbook. We can clearly see that he valued individuality, so long as it was not carried to extremes. Sully regarded social interaction as extremely important for the development of moral character. He wrote: "to surround him with companions is not only necessary for his comfort, but
is a condition of developing and strengthening the moral feelings, as the sentiment of justice, the feeling of honor, and so on."/166/ Play in a group setting secures this result as well as developing a sense of reciprocity in the child./167/

Like Bain, Sully did regard obedience as one of the primary virtues to be inculcated, but noted that obedience to personal authority was only a preliminary stage. He discouraged the use of extreme punishment, except in cases where it was clearly required to counteract other motives./168/ As an alternative to punishment, Sully advocated moral blackmail:

The child should be first be led to feel how base it is to lie, how cowardly to injure a weak and helpless creatures, by witnessing the distress it causes his parent or teacher./169/

Sully also advocated "the stimulating of activity by positive inducements."/170/ Judgment was required in meting out such rewards, since the rewarded activity acquires increased value. Sully pointed out, for example, that it was better to reward effort and industry than intellectual ability, since "it distinctly recognizes the moral element in intellectual industry."/171/

Teaching and Educational Methods

Bain

In Bain's account of education the teacher played the role of natural selector. Learning was viewed as a trial and error process with the teacher providing the consequences which lead to the "selection" of one action over another. Bain wrote: "The teacher cannot dictate the
right movement; he must wait upon it, and try to clench it when it is last hit upon./172/

In another respect, the teacher served as a model to be imitated. This was particularly so in the case of language instruction. Bain stated that the teacher should serve as a model of correct pronunciation and correct usage in order to counteract local vulgarisms and errors./173/

In preparing for this role the teacher must proceed inductively—from an understanding of the laws of mind. The teacher must improve teaching practice by employing principles, and must qualify the application of principles through practical experience./174/ Certain other "arts" can help in this process. An understanding of the practical science of rhetoric can provide aid in communicating knowledge./175/ Techniques of conducting oral interrogations and managing object lessons should be mastered. An understanding of the best way to order lessons and the correct balance to be struck between oral instruction and book work is also advisable./176/

Bain's ideal curriculum for higher education would have as its primary focus science, including the basic sciences and natural history sciences./177/ The humanities, including history and other social sciences as well as universal literature also form part of this curriculum. Bain recommended that narrative history be subsumed under the science of government and social institutions. This "utilitarian" focus upon institutions was to be supplemented by the study of political
economy and an outline of jurisprudence./178/ Finally, English composition and literature should be taught./179/ Bain argued that these three departments were sufficient for the purposes of a liberal education at the university level.

Both in giving precedence to instruction in science and by proposing a broadly based education, Bain was going against the standard Cambridge-Oxford model of education. He argued against this model of education further in rejecting the traditional arguments given for the value of the study of classics. Bain's arguments had a distinctly utilitarian flavor. He pointed out that since good translations exist, these languages do not provide much information value and the requisite training is costly in time and strength./180/ Various other faults are mentioned, including the danger that the student may become "unduly impressed with the views promulgated by the Greek and Roman authors" simply due to the amount of time invested in their works./181/ Bain concluded that the time and effort devoted to this work could be more profitably invested in the learning of modern languages that have current communication and information value./182/ Bain's recommendations concerning primary education followed the same lines. The primary sciences (mathematics, physics, chemistry, etc.) should be emphasized, but geography and history should also be taught./183/ All these subjects should be taught so as to make them as useful as possible. On the primary level this requires a careful sequencing of topics so that if students leave school they do not depart with incomplete and useless knowledge./184/
The sole teaching technique described by Bain in detail was the object lesson./185/ This teaching format, which had been first described by Pestalozzi, involved organizing lessons around an object or group of objects. Pestalozzi had advocated it as a method for cultivating the senses and facilitating the acquisition of certain abstractions, such as number./186/ Bain held that the cultivation of the senses was not a proper part of schooling, but regarded the object lesson as having some value nevertheless./187/ Object lessons could be employed as a valuable instructional technique in natural history, physical science and the useful arts. Bain regarded the format as a valuable technique for imparting empirical or preliminary scientific knowledge./188/ In other words, it was a good technique for instilling facts.

To conduct such a series of lessons the teacher presented either a natural object (e.g., water, iron, mountain) or a property of objects (e.g., weight, heat, polarity). A series of lessons were prepared on different aspects of the object (or property). These lessons were to be arranged so as to lead to a progressively deeper understanding of the object. In this way the student was prepared for the more systematic instruction of the primary sciences, and gained useful information about his or her world./189/

Bain touched on additional teaching methods for most of the subjects in his revised curriculum, but his main points have already been presented there. One further point in Bain's work is worth mentioning. As we have seen both Ward and Sully described the
importance of securing the interest of students. Bain touched on the issue when he wrote that schooling involves "the artificial direction of attention through the influence and dictation of others."/190/ One way this was to be done was by awakening "self-sustaining interests . . . when they can be."/191/ It is clear that Bain regarded this approach as having limited value. He wrote:

the uninteresting must be faced . . . [the teacher must] try to measure the child's power to support the stream of forced attention and use this power to the full without abusing it . . . [the child must be] inured gradually to uninviting, repugnant and severe occupation . . . alternated with relaxation and enjoyment./192/

Ward

In marked contrast with Bain, Ward stated that the best teachers are those who are able to secure the spontaneous interest of their pupils./193/ Nor was it the teacher's task to restrain the "impetuosity and rashness" of children. Ward wrote:

It is the business of the educator not to repress youthful energy but to make the young masters of themselves; not to root out their manifold desires but to subject them to reason./194/
The teacher should simply guide the spontaneous activity of the student so that it remains self-sustaining (through the stimulation of interests), and productive (through being guided by reason.)

The teacher played another role; that of character model. Ward wrote "no other educational instrument is so powerful as the teacher's personal influence."/195/ He noted that children were great mimics since imitation "is always strongest where judgment is weakest."/196/ While Ward refrained from exhorting teachers to live exemplary lives, he did urge them to reflect upon how they might appear
to their pupils./197/

Techniques of impression management are more explicitly recommended for dealing with the problem of discipline. In disciplining students Ward wrote, "the teacher's conduct is judged by the public opinion of a whole class or a whole school."/198/ Since this public opinion has long term consequences the teacher should learn to create and guide it oneself. Ward wrote: "The schoolmaster is, intact, a statesman in miniature, the only statesman who takes office without studying statecraft or the nature of those whom he has to govern."/199/ To mold this opinion Ward recommended a number of things. The teacher should avoid "harshness, favoritism and caprice."/200/ He should be passionately and eagerly concerned to preserve and increase his pupils self-respects and all the feelings that relate thereto. This is his moral life-blood, and ridicule, crushing satire, indifference, distrust and all uncharitableness will make havoc of it./201/

Finally, the teacher must treat all students alike, regardless of personal preference. Ward wrote:

As the physician strives with equal patience to cure all, whatever be their character, so the schoolmaster must be also no respecter of persons. But, at the same time, and this it is which makes his post so difficult and delicate, he must have an eye for, and an interest in, the individuality of each one./202/

A good teacher, according to Ward, must have tact and the insight to understand his or her pupils. This involves, in part, understanding the interests of each individual, and building the training of the mind around these interests./203/ While natural curiosity should lead the pupil to form a wide range of interests, this curiosity may have been stifled earlier. The teacher should encourage the formation of wide interests, but also be prepared to work upon such interests as the pupil
Ward did not provide detailed accounts of educational methods in his lectures, since his topic was the theory of education. Other instructors in the Teacher's Training Institute provided lectures on practical aspects of education, including teaching methods. Nevertheless, it is possible to discern enough about Ward's view of teaching methods to compare these views with Bain's.

Ward, like Bain, argued that instruction must follow the psychological order of development. While he agreed with Bain's view that development must be the determinant of when activities should be introduced, he denied that there was a period that was best for committing facts to memory. Indeed he regarded such exercises as harming the mind, since they wasted its energy and repressed its spontaneity. "It is nothing better than a grim joke," he wrote, "to tell us that the child is 'highly susceptible' to torture of this kind." In addition to determining the best period for starting activities, psychological development determined the mode and order in which material should be introduced. Underlying Ward's view of educational method was the idea that the order of the acquisition of knowledge should parallel the order of its discovery. Ward wrote:

it is reasonable to expect the order in which the individual can best approximate knowledge to resemble, at any rate broadly, the order in which the human race at first ascertained and excogitated it.

In other words, ontogeny recapitulates phylogeny in intellectual as well
as physical development. Ward employed this point to criticize teaching methods, particularly those on a university level. Too often instructors present their subject in a condensed and compressed fashion. While such simplicity and compactness is desirable for those within a discipline, it renders the discipline less accessible to outsiders. Ward wrote "much that is thus extruded as of only antiquarian interest will often be found to be educationally of the highest value." Ward's critique implies that instructors must examine the history of their discipline in order to effectively teach it.

Ward also raised questions about recent trends which gave science the central place in the curriculum. He pointed out that it was very difficult to make science "a generally efficient means of intellectual discipline." On the other hand it "may be imparted as useful knowledge" or its "wonders and romance . . . may serve as an important element of culture." Ward charged that educationists had not sufficiently demarcated amongst the different uses to which science could be put, and that the teaching methods to be employed should differ widely for these different uses.

Ward also discussed the teaching of the classics and reached conclusions similar to Bain's. He argued that since thought is something apart from its form of expression, one cannot successfully argue that Greek thought can only be acquired in the original language. While he admitted that training in a foreign language might make us more aware of, and more adept with our own, he denied that
only ancient languages could achieve this goal.\textsuperscript{214/}

Ward had more problems than Bain with the "mental discipline" arguments in favor of the classics, because he did accept mental discipline as a goal of education. However, he claimed that most of the superiority of the classics in this respect stemmed from the fact that they had been taught for a longer time, with a resultant honing of teaching methods.\textsuperscript{215/} Furthermore, he said, while Latin may provide valuable preliminary grammatical training, further training is best secured in the language of use.\textsuperscript{216/} Against the claim that the classics provide a valuable logical training, Ward wrote that a superior training could be provided by logic itself.\textsuperscript{217/} The assumption of those who advocate that classics train mental discipline seems to be that the pupil's mind will unconsciously adopt the form of the language and turn it to good use upon his or her own language, as well as unconsciously absorbing and adopting logical forms of reasoning concerning this assumption, Ward wrote:

just as little as unconscious correctness of idiom will suffice in the matter of expression, so little will unconscious sagacity and intelligence suffice in the matter of discursive reasoning.\textsuperscript{218/}

With Descartes' \textit{Treatise on Method} as his model of sound intellectual practice, Ward examined the necessary steps a teacher must take to train the intellect.\textsuperscript{219/} To avoid the common errors attendant upon thinking, pupils must learn: (1) to reflect and handle evidence; (2) to require and submit proof; (3) to love truth and (4) to be minimally swayed by his own interests and feelings.\textsuperscript{220/}
The teacher can facilitate this intellectual training in a number of ways. In the first place, Ward wrote, "the pupil should learn as little as possible on authority and shape his ideas as far as possible for himself, his activity being directed but not superseded." To this end he recommended an early training in observation and simple mathematics. The same point was used against the view that the "plastic years" be devoted to memory exercises, for in such exercises the pupil's activity is directed by the teacher or the material, not by himself. Next, when pupils begin to acquire general and abstract terms, they must be clear about the sense in which these terms are used. Ward wrote "without clear conceptions it is impossible to have clear judgment; the mechanism of thought being bad, the work performed must be defective." Third, the pupil must form precise judgments and base assent upon evidence. Ward wrote: "Where certainty is not forthcoming, [the pupil] should proportion its conditional assent to the evidence, answering to evidence as a ship does to her helm and to nothing but the evidence." Ward admitted that long and careful training was required to secure this goal and maintained that training in logic should be an essential part of this training. Finally, Ward wrote, "a profound love for truth must be quickened and kept vigorous in the student's mind."

Ward was not solely interested in intellectual and moral education. He chided Bain for neglecting the physical side of education. Ward claimed that teachers should know some elementary principles of physiology in order not to fatigue their pupils. Periods of work and periods of play are essential for optimal intellectual
growth and emotional health./227/ Ward remarked that the mature man wants knowledge, but the boy wants exercise; that is, "to try his powers: gymnastic for his muscles and gymnastic for his mind."/228/

Sully

Sully's descriptions of the teacher's role, provides a picture of one who is rather more directive than Ward's teacher, but less so than Bain's. Sully noted that "knowledge begins with the apprehension of concrete things by the senses of the child," and that the educator should train these observing powers./229/ In Sully's view, the role of the teacher involved awakening interests, fostering attitudes and developing habits or skills. Like Bain, Sully argued that the teacher must employ pleasure and pain, but particularly the former, to achieve his ends./230/ Like Ward, Sully envisioned the awakening of interests as one of the teacher's primary tasks./231/ In arguing that individual initiative was the key to education, Sully sided with Ward rather than Bain.

Sully recommended that the teacher acquire a range of knowledge to aid them in their tasks. The teacher should understand the relationship of mind and body since instruction is ineffective under conditions of fatigue. One of the tasks of the teacher is to "manage" the physical constraints by offering periods of rest and relaxation as well as periods of work./232/
Teachers must understand the order of development of the individual
teachers so as to optimally exercise each in the course of
development. They must be sensitive to individual differences among
their pupils, but to maximize the effectiveness of training and to
encourage a healthy individuality. Finally, the teacher must
understand the processes underlying the formation of habit. Sully wrote
that "A clear recognition of the truth that a perfect habit represents a
long series of repetitions, will tend to make the teacher patient and
hopeful in carrying out this part of his work."/

Sully wrote nothing about the controversy concerning the classics
and little about curriculum. He did stress the importance of
careful training in sensory observation and of stocking the mind with
images and concrete examples. Much of the difficulty in teaching
abstract subjects such as the physical sciences and grammar, he wrote,
could be mitigated by such preparation.

The object lesson was discussed although, in contrast with Bain,
Sully regarded it as a technique for the training of observing
powers. In Sully's account this form of lesson involved "a careful
methodical examination of an object by means of several senses in order
to obtain "the fullest and clearest knowledge of the object as a whole
and its conditions." In conducting such a lesson the instructor
should aim at developing "a habit of observation and a taste for
scientific experiment." for accuracy and developing habits of
"close painstaking observation."/
Sully wrote "to know how to exercise the attention, how to call forth its full activity is . . . the first condition of success in education."/241/ Attention is trained, in the first place, by arousing interest. In contrast to Bain, Sully argued that forced attention to what is uninteresting is fatiguing, ineffectual and unproductive./242/ For this reason the teacher must "adapt the work to the growing intellectual and other likings of the child."/243/

Sully recommended certain techniques to be followed in the training of the memory, judgment and reasoning. Following Bain, he stated that the "plastic period," from 6-10 years of age, was the most favorable one for learning language and acquiring facts./244/ He described two different phases in the training of memory: first the exercising and strengthening of the power of acquisition; and second, practice in recollection. The first phase should be carried out during the periods of "greatest vigour and freshness." A pleasurable state of mind connected with what is to be acquired, facilitates the process./245/ A great deal of repetition is necessary and this can be conducted in different forms./246/ Finally, the teacher should point out relations among parts of the subject matter being acquired in order to bring into play the laws of association./247/ Exercise in recalling is necessary to sid the development of "the voluntary command of his acquisitions, . . . clearness and accuracy of description and . . . an orderly method of arranging his materials./248/ "fresh and clear in the pupil's mind."/248/ Drill is required and should result in a memory that is "quick and accurate in reproducing what has been acquired."/249/
In training judgment the educator should draw out the child's own power of judgment. Sully said that the main problem for the educator is to draw the line between excessive individual independence and undue deference to authority. Wisdom and skill are required to perform this task, according to Sully, but, in addition, he provided some practical pointers. The child might be given some task such as describing an object, narrating an experience or repeating something he has heard. The educator should monitor the narration and should aim at caution in judgment. The natural propensity to accept as certain what chimes in with our wishes and inclinations should be checked. In close connection with this the child should be exercised in accuracy of statement. The natural tendency of the young to exaggerate needs to be carefully watched and counteracted. At the same time this regulation of judgment is a matter of some delicacy. Children delight in vivid and picturesque statement, and a touch of exaggeration is perhaps pardonable. A too strict insistence on precision in the early stages may discourage confidence, and lead to an untimely hesitation in judgment.

The development of reasoning powers involves answering the child's spontaneous questions as well as posing questions for the child to answer. Sully urged that educators provide the simplest answer possible, but also suggested that they stimulate the child to seek their own answers. By posing questions as to the causes of what happens about him—the educator may help "a habit of inquiry." Finally, in the more systematic training of reasoning, the focus should be on avoiding the most common errors such as hasty induction, taking an accidental accompaniment for a condition or cause, etc.

In other respects, Sully departed from the utilitarian tradition. He recommended techniques for the training of feelings and physical education. Running through his recommendations on these and other
topics is a recognition of the physical, intellectual and moral benefits of play.

Summary

Although the accounts of education given by these three thinkers varied in detail, clear differences between their approaches emerge. Of the three, Bain advocated the most directive form of education, and accorded the smallest role to the powers and the initiative of the pupil. Ward's view of the role of the teacher was the least directive; the teacher existed to facilitate, and sometimes shape, the growth of the mind. Furthermore, he placed the greatest emphasis on the self-directed activity of the learner in education. Sully, once again, occupied a middle ground. The teacher must work along the lines of the student's natural interests, but the teacher also plays a fairly directive role in shaping other mental activities. The development of individuality is encouraged up to a point, but the teacher must be on guard that it not be taken to excess. Sully seems to have accepted the view that learning must be self-directed without having complete trust in the ability of individuals to carry out the task correctly.
NOTES FOR CHAPTER 10


2. Ibid., 1:1-4.

3. On motives see ibid., 1:46-47 and *Table of the Springs of Action* in *Works of Bentham*, 1:218. On the rational comparison of the consequences of an act see ibid., 1:16.

4. For Bentham's views see ibid., 1:161. Mill's view on the importance of education is given in his Encyclopedia Britannica article "Education," reprinted in *James Mill on Education*, W. H. Burston, ed. (Cambridge: Cambridge University Press, 1969). especially pp. 93, 116-17. The differences between Bentham and Mill are not really very great as Mill had an extremely broad view of education as encompassing all of the influences upon the mind. Mill's interest in education did foreshadow later developments within the context of utilitarian thought.


7. These sanctions serve to bring about an "artificial harmony of interests" which ought to arise when everyone pursues his or her own self-interest. Bowring, *Works of Bentham*, 1:14-15.

8. Burston, *Mill on Education*, pp. 64-65. See also ibid., pp. 97-98 where Mill issued the following statement of faith: "In reality, as the happiness of the individual is bound up with that of his species, that which affects the happiness of the one, must also, in general, affect that of the other."


10. As we shall see, Bain equivocated on this point. He stated that disinterested action existed and that it constituted a "glorious paradox" for utilitarianism. Bain, *On the Study of Character, Including an Estimate of Phrenology* (London: Parker, Son and Bourn, 1861), p. 292. This led Henry Sidgwick to describe Bain as the only thoroughly honest utilitarian philosopher. A. Sidgwick and E. M. S. Sidgwick eds., *Henry Sidgwick: A Memoir* (London: MacMillan, 1906), p. 77. In fact, Bain attempted to define the problem away arguing that cases of disinterested action fall outside the purview of moral theory because
such actions go above and beyond duty. The Emotions and the Will, 3d ed. (New York: D. Appleton, 1875 [1889]), p. 292. That he could not rest easy with this solution is seen in his further attempts to account for sympathetic action with the help of his motor theory of thought. The Senses and the Intellect, 3d ed. (New York: D. Appleton, 1868), p. 344. (Unless otherwise noted all further references will be to the third editions of these works.) This account was in turn revised. See Chapter 4, section entitled "Sympathy" above.


12. Ibid., p.? Bain seems to have regarded himself as a defender of Utilitarianism, specifically with respect to the felicific calculus. In letters to Croom Robertson he wrote "I like also to keep up a testimony in favour of a hedonistic calculus, which both Sidgwick and Sully surrender too unconditionally." Bain to G. C. Robertson, July 1877. All letters from Bain to Robertson are in the George Croom Robertson Papers, University College Library, University College, London.


14. See ibid., pp. 197-98, 204

15. Ibid., pp. 193-94.


17. Ibid., p. 398.


20. Bain, Education as a Science, pp. 404-6. Truth was also mentioned as an adjunct of these other virtues.


22. Bain, Senses and Intellect, p. 344.


25. Ward, Materialism and Agnosticism, pp. 77

27. Ibid., p. 67. Feeling is aroused by presentations which vary in degree of complexity and therefore the state of feeling will also vary. Ibid., p. 85. This Leibnizian view—that pleasure and pain depend upon our cognitions—underlies much of Ward's thinking.

28. Ward wrote:

"to seek your own perfection is wiser, more prudent, more reasonable than to seek your own happiness, even though common sense should declare happiness preferable, supposing the two should clash" (Psychology Applied to Education, p. 129.)

29. Ibid., p. 134.

30. Ibid., p. 120.

31. On the other hand, since attention is determined by feeling, and attention further differentiates the presentation continuum, intellectual development will be also determined by conative development.

32. Ward, Psychology Applied to Education, pp. 151-52. Ward pointed out that there was a large field of action which was not relative and that in this field

"there is a permanent coincidence between right motives and the overt acts that are their fit expression. Here it is that morality is intuitive: no sooner have we the good will to do right than we see what it is right to do" (Ibid., p. 152.)

Ward, of course, argued that this "good will" is the core of moral character. He added that

"to suppose that this can be produced, by training, from the utilitarian end is more unnatural than to suppose that a tree can begin by having branches and end by having a trunk and root." (Ibid.)

Ward's position here is very similar to that espoused by Sidgwick and he was probably influenced by Sidgwick in this respect. However, relative to Sidgwick, Ward emphasized the intuitive factor and downplayed the utilitarian.

33. Ibid., pp. 135-36.

34. Ibid., p. 136.


36. Ibid., p. 84.
37. Ibid. See also ibid., p. 75, n. 1.
38. Ibid., p. 84.
40. Ibid.
41. Ibid., 2:362-63, 162-65.
42. Ibid., 2:363, 159, 120-21.
44. Ibid., p. 149.
45. Ibid., p. 158.
46. Sully, Human Mind, 2:15-16. Underlying this account was the principle that the efficient functioning of the organism is pleasurable while inefficient functioning is painful. A similar principle underlay Ward's account of the operation of attention.
47. Ibid., 2:206. These limiting conditions included differences in degree of vigor and the operation of volitional inertia or habit. Ibid., 2:207-8.
48. Ibid., 2:282.
49. Ibid., 2:283.
50. Ibid.
51. Ibid., 2:285.
52. Ibid., 2:284. Sully also described the sociological treatment of morality wherein "moral feelings and judgments are viewed as attributes of the community and products of social evolution." But it is not clear that he endorsed this view. Ibid., 2:363. From the 1880's on, Sully was primarily a textbook writer. Since he wrote complete and balanced textbooks, it is often difficult to identify Sully's personal position on issues.
53. Ibid., 2:102-3.
54. Ibid., 2:107, 109-11.
55. Mill, Logic, bk. 6, ch. 2, sec. 3.

57. Bain, Emotions and Will, p. 486. Bain's actual words were "we have examined a very wide portion of natural phenomena, both in matter and in mind, and... no case of anarchy has ever yet been lighted on." (Ibid.)

59. Ibid., pp. 416-17, 418, 422.


61. Ibid.


63. Sully, Human Mind, 2:292-95. Sully wrote that the

"Semblance of indeterminateness is, of course, greatly increased through our ignorance of the motive-processes themselves. Nevertheless, a deeper understanding of the processes involved leads to the conclusion that in every case action is determined by the group of forces (psychical and physical) operating at the time. It may be added that a scientific psychology, which sets out with the assumption that psychical events can be explained or accounted for by certain conditions, cannot consistently make room for the idea of freedom, so far as this implies indeterminateness of action." (Sully, Outlines of Psychology, with Special Reference to the Theory of Education [New York: D. Appleton, 1892 (1884)], p. 482.)

64. Sully, Human Mind, 2:264.

65. Ibid., 2:264-65.

66. Herbert Spencer's work Education, Intellectual, Moral and Physical (London: Williams and Norgate, 1861) was published earlier, but did not emphasize the value of psychology for education.

67. Ward, Psychology Applied to Education. Since these lectures were published so much later, they could not be expected to have influenced the development of educational psychology in Britain in the early part of the twentieth century.
68. The Outlines contained notes on "practical bearings", appended to the end of each chapter. Bain described the work as "heavily laden with notes awkwardly stuffed in" and predicted that it would never sell more than a hundred copies a year "if that." Bain to G. C. Robertson 9th Feb 1884. Bain was no doubt concerned about competition for his own abbreviated text, Mental and Moral Science (1872). Nevertheless, he underestimated the success of Sully's work. By August 1884, one thousand copies had been sold and a second thousand were being printed. (Bain to G. C. Robertson 24th August 1884.) Bain's own work was selling more than one thousand copies per year during this period. (Bain to G. C. Robertson 12 November 1885.) All letters can be found in the George Croom Robertson Papers, University College Library, London. The Outlines was so successful that Sully published his Teacher's Hand-book of Psychology two years later and continued to issue new editions of the Outlines.

69. See Bain, Education as a Science, p. 139. Here Bain was adopting the negative portion of the Utilitarian-Associationist program—the stricture against positing innate faculties. Interestingly, Bentham was the most frequently cited author in Bain's work.

70. Ward, Psychology Applied to Education, p. 10. Ward cited Locke as his authority in this regard. Ibid., p. 165. Bain and Locke tie for the leading number of citations in this work.


73. Both Bain and Sully tacitly accepted the assumptions of the Utilitarian-Associationist position that a science, or systematic theory, of education was possible and that the science of psychology was its foundation. See Burston, Mill on Education, p. 45. Ward questioned both the possibility of a science of education and the value of psychology in such an enterprise. He wrote

"A science of education can never do the half of what educational theorizers have supposed, can never be comparable for exactness and distinctness to, say, the theory of navigation or the theory of structures; and yet [we] have reason to believe that such a science will be as valuable to the practical teacher as the theories just mentioned are to the navigator and the engineer." (Ward, Psychology Applied to Education, pp. 2-3.)

Ward did conclude that psychology was "at present sufficiently advanced to justify the attempt to deduce and formulate a system of educational principles," although the task of "deducing and formulating" must largely be left up to the individual teacher. Ibid., pp. 5-6.

75. Ibid., pp. 177-78.
76. Ibid., pp. 186-87.

77. On the psychological order of subjects see Ibid., Chapter 6. The logical order of subjects is discussed in Chapter 7. See especially pp. 198-201. It is not entirely clear to me why Bain regarded some of these as logical—e.g., the corporeal preceding the incorporeal—for they seem to arise from a consideration of the workings of the mind.

78. Ibid., pp. 192-96.
79. Ibid., p. 197. In addition our concepts include a name and, oftentimes, a definition, but it is the image (or "representative particular") that is the core of the concept.

80. Ibid., pp. 132-33, 186. Presumably, this is because such development takes place before school age. Moreover since he did not regard perception as inferential, it was not viewed as an intellectual process.

81. Ibid., p. 122.
82. Ibid., p. 125.
84. Ibid., p. 128.
85. Ibid., p. 124
86. Bain wrote:

"Morality is imbibed from innumerable sources; and school does not even rank as one of the chief. There are unquestionably inborn tendencies, more or less powerful, to make men prudent, and just, and generous, when once they are placed in the suitable circumstances. But experience shows that these native forces are not fully adequate to the desired end; and society superadds a special discipline to make up for the defects. The greater part of this discipline, however, is not teaching, in the common meaning of the word, but the public dispensation of punishment and reward. (Ibid., p. 398)

He also wrote

"Habituation to obedience, in prescribed lines is our first moral education, and represents by far the greatest part of that education in its whole compass." (Ibid., p. 399)

The school teacher is a moral teacher insofar as he is a disciplinarian, i.e., exerts control for a particular purpose. (Ibid., p. 401)
87. Ibid., pp. 402-20.
88. Ibid., p. 418.
89. Ibid., pp. 419-20. Of course not everyone would agree that this is a "realistic" view of inequality and as the labour movement developed it became more difficult to claim it as such. It seems clear that Bain was no democrat and he may not even have been as egalitarian as the Mill's.
91. Ibid., p. 30. See also, pp. 39-40.
92. Ibid., p. 104.
93. Ibid., p. 31.
94. Ibid., p. 35, 46-47.
95. Ward wrote
"the great means of advancing this parcelling out of experience into parts, of main groups of definite objects and acts out of an indefinite maze of sensations and movements . . . is Interest." (Ibid., p. 29.)
96. Ward argued that this sensory training was an important part of intellectual training but not for the usual reasons. Sensory training did not simply function to stock the mind with accurate images, it was intellectual training in the miniature. Ibid., pp. 51-52. Ward argued that this early exercise of "conception" had the additional advantage of being, self-correcting, because the images being elaborated were also presented to the senses. Ibid., pp. 53-54.
97. Ibid., p. 65.
98. Ibid.
99. Ibid., p. 66

100. Ward argued that the associations formed by the understanding are stronger than those formed by memory because "they are the result of greater activity of attention," and "they are more numerous and intimate." Ibid., p. 71. They are also more economical than those formed by contiguity in the same manner as the master key is to the bunch of separate keys which it supersedes." Ibid.

101. Ibid., pp. 66-67. Ward pointed out that in reducing memory to "the natural force of adhesiveness," Bain was highlighting a property found most clearly in idiots. Ibid., pp. 65, 68.
106. Ward claimed that at higher stages of thought there are no distinct images corresponding to words but rather "a certain movement of ideas in correspondence with the word." Ibid., p. 79. He added "Words do not merely correspond to complexes of ideas in imagination, but control these, and determine their movements." (Ibid.)

107. Ward, "Psychology," pp. 77-78. The charge that "logicism" has tainted the enterprise of psychology is remarkably similar to charges made against "psychologism."


109. Ibid., p. 114.

110. Ibid., p. 131.

111. Ibid., p. 134.

112. Ibid., p. 135.

113. Ibid.

114. Ibid., p. 121.

115. Ibid. These views should be contrasted with Bain's See n. 86 above.


118. Ibid., pp. 409-14.

119. Ibid., pp. 63-64.

120. Ibid., p. 64.

121. Ibid., pp. 406-8.


123. Ibid., p. 159. Sully did assert that this training should also be directed toward the improvement of the learning faculty and warned against overloading the memory. Ibid., pp. 160-61, 172-3.
124. Ibid., pp. 176-81.
125. Ibid., pp. 183-85, 190-92.
126. Ibid., pp. 180-81.
127. Ibid., pp. 201-6.
128. Ibid., pp. 270-74.
129. Ibid., pp. 298-30.
130. Ibid., pp. 300-2, 324-28.
131. Ibid., pp. 373-77.
132. Ibid., p. 391. See also ibid., pp. 396-98.
133. Ibid., p. 394.
134. Ibid., p. 390.
135. Ibid., p. 401.
136. Bain, Education as Science, p. 6
137. See Ibid., p. 322
138. Ibid., p. 138
139. Ibid., p. 326 n. 1.
140. Ibid., p. 399
141. Ibid., pp. 437-38.
142. Ibid., p. 438
143. Ward, Psychology Applied to Education, p. 165. Locke's statement is worth repeating:

"The business of education is not . . . to make the young perfect in anyone of the sciences, but so to open and dispose their minds as may best make them capable of any, when they shall apply themselves to it. It is, therefore, to give them their freedom that I think they should be made to look into all sorts of knowledge, and exercise their understanding in so wide a variety and stock of knowledge. But I do not propose it as a variety and stock of knowledge, but as a variety and freedom of thinking; as an increase of the powers and activity of the mind, not as an enlargement of its possessions." [underlining Ward's] (quoted in Ibid.)
144. Ibid., p. 11.

145. Ibid.

146. Ibid., p. 10. Ward wrote:

"A strong will is, then, even more a desideratum than a strong intellect; and we in England, at all events, admire pre-eminent determination and tenacity of purpose even more than pre-eminent intellectual endowment." (Ibid., p. 8.)

He added, "there must not only be a strong will but a good will." Ibid.

147. Ibid., pp. 131-32, 134-35.


149. Ibid., pp. 165-66.

150. Ibid., p. 170.

151. This lecture was presented in 1917 but was included in Psychology Applied to Education, as having bearing upon educational matters.

152. Ibid., p. 181.

153. Ward was specifically referring to the social eugenics movement which was seeking to promote civic and moral life through education. Ibid., pp. 172-73. Of course this wasn't the first time such an aim had been proposed and Ward's response is a measure of his reaction to the Utilitarian program. He argued that we need to formulate the ends of education apart from the question of what would best meet the needs of society. He concluded that we should train the individual to think and act morally and society will take care of itself. On the other hand, if we educate to meet the needs of society, we are likely to destroy the individuals on whom democracy depends. The German educational system was cited for illustration. He wrote:

"[Germany] affords us at this moment both encouragement and warning: she shows us at once how much social eugenics may hope to accomplish and at the same time how disastrous it may be if misapplied. For Germany has not neglected to make the formation of character the chief aim in school life; and the result she has attained is a demonstration of what method and singleness of purpose can do. But, on the other hand, the character she has succeeded in forming, has reduced her citizens severally to so many pliant instruments of an autocratic government, instead of fitting them to act collectively as the sovereign power of a democratic one." (Ibid., p. 173.)
155. Ibid., p. 175.
156. Ibid., p. 177.
157. Ibid., pp. 182-83.
159. Ibid., pp. 5, 8-9.
160. Ibid., p. 6.
161. Ibid., pp. 159-60, 172.
162. Ibid., pp. 410-14.
163. Ibid., p. 65.
164. Ibid.
166. Ibid., p. 354.
169. Ibid., p. 382.
170. Ibid., p. 398.
171. Ibid., p. 400.
173. Ibid., pp. 233, 326.
174. Ibid., p. 230.
175. Ibid., p. 231. The goal of rhetoric is, of course, persuasion.
176. Ibid.
177. Ibid., pp. 390-91.
178. Ibid., pp. 391-92. In other words, history should be made useful, it should tell us how to structure our institutions.
182. Ibid., pp. 384-85. Bain wrote that the teaching of language "is most rationally conducted when it stands on the original footing of the classical languages in the fifteenth and sixteenth centuries, i.e., when the language itself as a means of interpretation and communication, is the fact and the whole fact." (Ibid.)

183. Ibid., p. 437.

184. Ibid.

185. Ibid., pp. 132-36, 247-81, 439-44.

186. Ibid., pp. 132-33.

187. Ibid.

188. Ibid., pp. 135, 248-57.

189. Ibid., pp. 247-72 passim.

190. Ibid., p. 183

191. Ibid., p. 184

192. Ibid.


195. Ibid., p. 119.

196. Ibid., p. 140.

197. Ibid., p. 141.

198. Ibid., p. 142.

199. Ibid.

200. Ibid., p. 145.

201. Ibid.
203. Ibid., pp. 26-27.
204. Ibid., p. 44.
205. Ibid., p. 105.
206. Ibid.
207. Ibid., p. 106
208. Ibid., p. 105
209. Ibid., pp. 105-6.
210. Ibid., p. 106.
211. Ibid.
212. Ibid., pp. 106-7.
213. Ibid., p. 110.
214. Ibid., p. 112.
215. Ibid., pp. 110-11. Ward wrote, "our whole apparatus for this kind of discipline [the discipline provided by grammatical studies] has been elaborated in connexion with Latin and Greek." Ibid., p. 111.
216. Ibid., pp. 111-12.
217. Ibid., p. 113.
218. Ibid.
220. Ibid., pp. 95-6.
221. Ibid., p. 95.
223. Ibid.
223. Ibid., p. 96.
224. Ibid. This stress upon the importance of evidence does confirm Ward's claim to be following in the tracks of the empiricists while making necessary corrections to their views.
225. Ibid.
226. Ibid., p. 17.
227. Ibid., pp. 17-18.
228. Ibid., p. 34.
230. Ibid., pp. 395-400.
231. Ibid., pp. 82-84.
232. Ibid., pp. 27-32.
233. Ibid., pp. 47-50, 63-65.
234. Ibid., p. 65.
236. Unlike Bain's, Sully's text focused on elementary education where these issues were somewhat less important.
238. Ibid., pp. 127-30. Sully was following Pestalozzi's lead here. See above note 126.
239. Ibid., p. 128.
240. Ibid.
241. Ibid., p. 83.
242. Ibid., p. 84.
243. Ibid.
244. Ibid., pp. 161, 165-66.
245. Ibid., pp. 162-63.
246. Ibid., pp. 163-64.
247. Ibid., pp. 164-65.
248. Ibid., p. 170.
249. Ibid., p. 271.
250. Ibid., pp. 270-71.
251. Ibid., pp. 272-73.
252. Ibid., p. 273.
253. Ibid., p. 274.
SUMMARY FOR PART IV:
THE EMERGENCE OF A NEW PSYCHOLOGY

In Part IV I have examined the theoretical and applied views of two psychologists in the 1890's, James Sully and James Ward. By contrasting their views with views held by Alexander Bain, it has been possible to assess the impact of the late nineteenth century reaction against empiricism, and associationism, as well as the continuing strength of the Utilitarian-Associationist program.

To varying degrees, the views of Sully and Ward reflect the rejection of assumptions underlying the Utilitarian-Associationist program. Each adopted a view of mental development at variance with the building-block account of the earlier thinkers. Each argued that the laws of association could not provide a full account of mental growth and each emphasized the role played by attention in mental processes.

Of the two, Sully remained more closely tied to the earlier tradition. He argued that psychology was a positive phenomenal science and could only treat the self, volition and attention in their phenomenal aspects.

It is in the applied psychology of these two thinkers that we find a continuing preoccupation with the tasks formulated by the Utilitarian-Associationist tradition. Both Sully and Ward discussed the formation of moral and intellectual character. Ward's stress upon the activity of the subject led him to emphasize the development of
conscious reflection as the basis of character. His account stands in marked contrast to Bain's, which focused upon the formation of sound intellectual and moral habits. Sully straddled both positions and argued that character involves habits and conscious reflection, although he emphasized the former.

The work of these thinkers, especially Ward's, clearly points toward the direction taken by British psychology in the twentieth century, even though their actual contributions were eclipsed by the work of William McDougall, F. C. Bartlett and the institutional contributions of C. S. Myers. Although detailed research is needed on the relations among these thinkers, my account suggests far greater continuity in the British tradition than have previous accounts.

Although the parallels have not been fully developed in this work, it is interesting to note that the late nineteenth century reaction against empiricism and associationism, in combination with the program established for psychology by the Utilitarian-Associationist thinkers, led to a type of psychological theory that was not possible in the United States (in any widespread fashion) until the cognitivist revolution of the 1960's.

The development of psychology as an academic discipline was also discussed in this section. Although there were signs of increasing differentiation of the discipline during the 1890's, it was still in an incipient form during this period it was not until the 1920's that steps were taken to establish psychology as a full-fledged independent academic discipline. The fact that psychologists were able to
demonstrate their practical usefulness during World War I increased the status of the profession and facilitated the growth of the discipline. It appears that in the absence of practical opportunities, practical concerns amount to little in the overall scheme of things.
CONCLUSION

I believe that my account of the Utilitarian-Associationist tradition and its impact upon psychology during the nineteenth century sheds important light upon the development of British psychology in the nineteenth century. The propaedeutic role envisioned for psychology by these thinkers, as well as the specific tasks assigned to the discipline all had an impact upon later developments. A particular brand of psychology--associationistic and hedonistic--was to serve as the foundation for philosophy and social reform. This program led to a special focus upon accounts of the higher mental processes and conduct.

My account of this tradition leads to a reinterpretation of the work of Alexander Bain. I have argued that this work was, at least in part, philosophically motivated; i.e. undertaken to salvage a particular philosophical tradition. Neglected aspects of his thought--his motor theory of thinking and his accounts of conscience, sympathy and belief--are highlighted because of this analysis. His accounts of character and education acquire a new significance as attempts to fulfill the practical or moral goals of the Utilitarian-Associationist program.

It was the clash between the scientific and the moral aims of the tradition that led to the reaction against naturalism, empiricism and associationism toward the end of the nineteenth century. Although German idealism provided the tools for the critique, the problems were
My examination of these critiques leads to a re-evaluation of the work of the individuals who followed Bain. Their emphasis upon the volitional powers of the individual, their critique of the associationist account of the development of mental power and, for some, the rejection of physiological analysis, is interpreted as a reasonable response to a tradition having problems fulfilling its self-proclaimed goals.

The endpoint of my dissertation—1903—represents, in several respects, both an end and a new beginning for psychology. Bain died in that year, and Sully was replaced at the University of London by the logician Carveth Read. The Cambridge Psychological Laboratory was moved to new quarters; in the following year C. S. Myers was appointed University Demonstrator in Experimental Psychology. British philosophy was set on a new course by the publication of G. E. Moore's article "The Refutation of Idealism," in *Mind*.

Despite such shifts I believe that my analysis suggests something about the sources of the distinctive character of British psychology: its emphasis upon the self and volitional processes and its concern with applied questions. And I believe that the broad problems that psychologists were struggling with at the end of the nineteenth century are still with us today. James Blight, another UNH-trained historian of psychology, has written:

The age-old fundamental drama of psychology...[lies in its attempt] to formulate a conception of mind and its relation to brains, bodies and other aspects of the world in such a way that the puzzling dichotomies of existence [mind/body;
reason/emotion; freedom in a determined universe; the place of value in a world of facts] are resolved in an intelligible synthesis. ("Edwards, Hume and Causality: Two Paths to Irrationalism," Philosophical Psychology, 1 (1980):21)

By the 1890's psychologists had concluded that the psychological tradition represented by the Utilitarian-Associationist thinkers could not provide such an intelligible synthesis. It is not clear that such a goal has yet been achieved.

Several of the thinkers whose work I have examined in this dissertation concluded that such an "intelligible synthesis" could never be achieved within the bounds of a phenomenalistic and deterministic science. Ward asserted that "a psychology that would leave room for freedom and faith must not be bound by mechanistic science." While I might employ different terms, I believe that Ward identified a central problem for psychology. It is not at all clear that a scientific account of man (and woman) can provide a fully adequate picture of important aspects of human functioning. At the same time, psychology's ties to applied fields, such as education, appear to necessitate this broader view of human functioning.

James Ward attempted to provide an account of the selective and self-determining aspects of human functioning by stressing the role of interests and attention. Even Alexander Bain perceived the importance of the new stress upon volitional mental processes. Toward the end of his career he wrote that

if mental attention is not bodily attention idealised by being thrown more exclusively inward upon its nervous tracts, there is still to be sought within the compass of the system a factor of activity at present entirely unstateable. We cannot too soon set going an enquiry to find out what this is. ("On Physiological Expression in Psychology," Mind, 16 (1891).
As others have done before me, I would like to suggest that the problems psychology was struggling with at the end of the nineteenth century, problems that arose in the context of its attempt to achieve a disciplinary identity as a science, extend beyond the case of psychology. The Utilitarian-Associationist program embodied enlightenment values which have permeated western philosophical thought. Most of the social sciences developed during the nineteenth century face similar dilemmas. The necessity of accounting for values within such sciences and the problem of doing so within the non-teleological framework of science is one addressed by a number of contemporary writers, including Richard Rorty and Alastair McIntyre. I would suggest that considerable light might be shed upon these problems by a reexamination of the work of some of the people discussed in this dissertation, especially the work of James Ward.
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