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Coping with Stigma: Challenges & Opportunities

Cover Page Footnote

Cognition and Perception; Food Security

Coping with Stigma: Challenges & Opportunities

Howard Kunreuther & Paul Slovic*

Introduction

How should we deal with stigma and its impacts? This question would probably seem absurd to an ancient Greek about to brand someone with a visible mark to signify that this person was immoral or dangerous and thus undesirable, someone to be denigrated and avoided. The word “stigma” was used by the ancient Greeks to refer to a mark placed on an individual to signify infamy or disgrace. One defining characteristic of stigma is the risk to society that the marked person is perceived to pose. Within the social sciences, there is an extensive body of literature on the topic of stigma as it applies to people.¹ By an association of stigma and risk, the concept of stigma has recently come to be generalized to technologies, places, and products that are perceived as unduly dangerous.²

Stigmatization in ancient Greece was a form of risk management. Even today, stigmatization can be a positive force for risk reduction. Food manufacturers or restaurants with lax safeguards against bacterial contamination, for example, deserve to be stigmatized, and the economic costs associated with that stigma may serve as a deterrent or punishment. In those situations stigmatization and its consequences may thus be a good thing for society.

But if stigma were purely beneficial, we would not write this paper. Stigma is a powerful force in our modern industrial society because

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¹ See, e.g., Erving Goffman, *Stigma* 1963 and Edward Jones et al., *Social Stigma: The Psychology of Marked Relationships* (1984).

² See Robin Gregory et al., *Technological Stigma* 83 *Am. Scientist* 220 (1995).

science, technology, and communications media often interact with the idiosyncrasies of human cognition, perception, and emotion to produce extreme disruption in the lives of industries, products, communities, and people. In many instances we sense that the social and economic response is exaggerated, even unwarranted, leading to impacts far more serious than the initial threat. In such cases, we face the challenge of how to manage stigma and reduce the vulnerability of important products, industries, and institutions to its effects.

The challenge of managing stigma is nowhere better illustrated than in the case of the British beef industry. The possibility that eating beef might lead to a fatal brain disease had a catastrophic impact upon the beef industry in Britain and threatened the very economic and political stability of the country. Following a series of accounts in the press in the fall of 1995, beef consumption in the U.K. fell 20% by Christmas 1995. Approximately 1.4 million British households stopped buying beef and thousands of schools took beef off the menu. The widespread publicity given to the deaths of a dozen young people from a mysterious disease that looks similar to bovine spongiform encephalopathy (BSE) in cattle and Creutzfeld-Jacob Disease (CJD) in humans led to the destruction of hundreds of thousands of cattle. If this action and the avoidance of British beef by consumers in the U.K. and throughout Europe prevented an epidemic of this gruesome and fatal human disease, then the response could be considered quite appropriate, perhaps even a public health miracle. If there was really little or no danger from eating British beef, the response was wildly exaggerated and destructive. At this time, the science is inconclusive and the jury is still out.

Episodes of stigmatization such as the BSE scare are noteworthy because they are textbook examples of what has been called the "social amplification of risk" and illustrate a new form of societal vulnerability.³ Whereas human health was the primary vulnerable commodity in the past, increasing technical and medical sophistication, combined with hypervigilant monitoring systems to detect incipient problems, make such scourges less likely now. But the price of this vigilance, based in no small part upon the incredible ability of modern

³ See Roger Kasperson et al., *The Social Amplification of Risk: A Conceptual Framework*, 8 *Risk Anal.* 177 (1988).

media to “spread the word,” is the impact that this information itself has upon social, political, industrial, and economic systems. Thus we live in a world in which information, acting in concert with the vagaries of human perception and cognition, has reduced our vulnerability to pandemics of disease at the cost of increasing our vulnerability to massive social and economic catastrophes. Is this latter vulnerability inevitable? What might be done to reduce it without losing the benefits of hypervigilant warning systems? What is the role of public participation and the use of democratic processes in creating trust and reducing the chances that stigma will occur?

Strategies for Dealing with Stigma

Several potential strategies for reducing vulnerability to stigma are outlined in the table below. Each is discussed in turn.

Strategies for Coping with Stigma

1. Prevent stigmatizing events	• Model stigma impacts as explicit costs in decision analysis
2. Reduce perceived risk	• Create and maintain trust
	• Inform, educate, and desensitize the public
	• Educate scientists about how risk studies and quantitative risk assessments breed fear
3. Educate the media about stigma	
4. Reduce stigma impacts	• Provide insurance
	• Guarantee property values
	• Provide compensation

Prevent Stigmatizing Events

Stigma is often triggered by the occurrence of an adverse event such as a major or minor accident, a discovery of pollution, an incident of sabotage, and so on.

The adverse impacts of such an event sometimes extend far beyond the direct damages to victims and property and may result in massive indirect impacts such as litigation against a company or loss of sales, and increased regulation of an industry. Thus, the event can be thought of as a stone dropped in a pond. The ripples spread outward, encompassing first the directly affected victims, then the responsible company or agency, and, in the extreme, reaching other companies, agencies, or industries.

One implication of signals, ripples, and stigma is that effort and expense beyond that indicated by the expected losses from direct impacts might be warranted to reduce the frequency of occurrence of high-signal, stigmatizing events.

For example, in the event of another “contained” core-damaging accident in a nuclear reactor such as the one that took place at Three Mile Island, the major costs of such an accident would not be those from immediate loss of life, latent cancers, and direct economic expenses (e.g., property damage, repairs, cleanup), important as these may be. Instead, the dominant costs might arise from secondary impacts such as public reaction, perhaps leading to long-term interruption or even shutdown of the industry. The resulting higher-order consequences of this suspension or shutdown (e.g., dependence on more costly and less reliable energy sources) could total tens or hundreds of billions of dollars.

These sociopolitical and long-run economic impacts must be considered when determining how much should be spent to reduce the probability of a core-damaging accident. In other words, the design of nuclear safety criteria might be phrased in terms of the question: “Given the cost of making a facility safer and the economic impacts of an accident, what probability of a core-damaging accident is tolerable?”

This notion calls for a more comprehensive modeling of the overall social costs (including stigma impacts) of nuclear accidents and the benefits of reducing the risk. If even small and contained (but frightening) accidents are likely to have immense costs, this would imply the need for strict criteria, even at great expense, to make the probability of such accidents smaller than it currently is. Similar logic might argue in favor of remote siting of hazardous facilities, dedicated trains for transporting hazardous materials, tamper-resistant packaging on products, expensive safety precautions in blood banks, and other measures to prevent stigma producing events from taking place.

Reduce Perceived Risk

Create and Maintain Trust. Reducing perceived risk should decrease stigma, but altering risk perception is not easy. One key link to perception is through trust. If trust in experts, managers, and policy makers increases, perceived risk will decrease and so will stigma.

Unfortunately, trust in risk management is difficult to achieve and maintain.⁴ Trust is fragile. It is typically created rather slowly, but it can be destroyed in an instant by a single mishap or mistake. Once trust is lost, it may take a long time to rebuild it to its former state. In some instances, lost trust may never be regained. The implication of this for managing stigma is that, again, great efforts and costs may be warranted to prevent the occurrence of events that could fuel distrust. In other words, loss of trust is one of the ripple effects referred to earlier that needs to be modeled and valued when making decisions about risk management.

One way to generate trust is to encourage public participation as an integral part of the decision-making process. For example, in siting new facilities it is important to hear the concerns of the affected public and respond to them. As part of the monitoring and control procedures for making certain the facility remains safe, a committee could be established to inspect the facility at regular intervals and report its findings back to the local community. If such a process helps to establish trust and confidence between the developer and the affected parties, it could reduce perceived risk and stigmatization.

A set of guidelines for a fairer, wiser, and more workable siting process — the Facility Siting Credo — was developed during a National Facility Siting Workshop in 1990. A questionnaire based on the Credo was completed by stakeholders in 29 waste facility siting cases, both successful and unsuccessful, across the U.S. and Canada. Using an independent determination of outcome (success), a preliminary rank of the importance of various Credo principles was obtained. The data revealed that establishing trust between the developer and host community was an important factor in facilitating the siting process. The siting process was most likely to be successful when the community perceived the facility design to be appropriate and to satisfy its needs. Public participation also was seen to be an important process variable, particularly when it led to the view that the facility does a good job of meeting community needs.⁵

⁴ See Paul Slovic, *Perceived Risk, Trust, and Democracy*, 13 *Risk Anal.* 675 (1993).

⁵ See Howard Kunreuther et al., *Siting Noxious Facilities: A Test of the Facility Siting Credo*, 13 *Risk Anal.* 301 (1993).

Educate Scientists: Risk Studies Breed Stigma. Risk assessment, as now practiced and communicated, is part of the problem of stigma. The practice of quantitative risk assessment has steadily increased in prominence during the past several decades as government and industry officials have sought to develop more effective ways to meet public demands for a safer and healthier environment. Ironically, as society has expended great effort to make life safer and healthier, many in the public have become more, rather than less concerned about risk. This is particularly true for involuntary exposure to chemicals, which the public associates to a remarkable extent with danger, cancer, and death.

The linear, no-threshold model of cancer risk assessment has long been the subject of debate and criticism.⁶ Recently, Purchase and Auton described an alternative model in which the lowest dose at which the critical effect has been observed is identified and used to define the No Observed Adverse Effect level (NOAEL) for that effect.⁷ Purchase and Auton show that one cannot distinguish empirically between the linear, no-threshold model and a model in which the NOAEL is divided by a safety factor. Thus, for example, the linear model used by the EPA regulates any lifetime risk in excess of one chance in one million which can be shown to be equivalent to the NOAEL divided by a safety factor of about 250,000. Use of a non-threshold linear model to express risk in probabilistic terms leads to higher perceived risk than does the safety-factor format based upon the same test results.⁸

More generally, the point we are trying to make is that the rise of quantitative risk assessment, with its proliferation of high-dose animal studies and reliance on conservative extrapolation methods, may be a strong contributor to destructive stigmatization involving chemical products. That poses a dilemma for risk managers who cannot and should not abandon animal studies and risk assessment. However, they must recognize that stigma is a side-effect of such efforts and consider

⁶ See, e.g., Albert A. Nichols & Richard Zeckhauser, *The Perils of Prudence: How Conservative Risk Assessments Distort Regulation*, 10 Regulation 13 (1986).

⁷ See Iain F.H. Purchase & Thomas Auton, *Thresholds in Chemical Carcinogenesis*, 22 Reg. Tox. & Pharmac. 199 (1995).

⁸ See Iain F.H. Purchase & Paul Slovic., *Quantitative Risk Assessment Breeds Fear*, 5 Hum. & Ecol. Risk Assmnt. 445 (1999).

ways to offset its damaging impacts without jeopardizing public health and safety. One way for them to deal with this issue is to communicate the levels of uncertainty associated with the risk assessment rather than just providing the public with a conservative point estimate.

Educate the Media

Another strategy could focus on altering the number and content of stigma producing messages reaching the public by educating the media and the regulatory community about possible message effects.

One of the most dramatic examples of media-amplified stigmatization of a product occurred in the spring of 1989, when millions of consumers stopped buying apples and apple products after CBS ran a news story on "60 Minutes" stating that the chemical Alar could cause cancer. The assertion that Alar was carcinogenic was based upon animal studies that were considered suspect because the doses used had been so large as to have been acutely toxic. Moreover, there was no evidence from epidemiological studies showing Alar to be a human carcinogen. Nevertheless, the public reaction was extreme. The apple growers claimed losses in excess of \$100M and these losses would undoubtedly have been even greater had they not stopped using Alar soon after the CBS program was aired.

The media will not easily be persuaded to change their way of "reporting on risk." They believe they are providing an important duty to society in warning of potential threats, and this is true. Moreover they are well protected by the First Amendment of the Constitution. Although apple growers in Washington State sued CBS for making numerous false statements about the risks of apples treated with Alar, the suite was dismissed by a federal judge who argued that "Even if CBS' statements were false, they were about an issue that mattered, cannot be proven as false and therefore must be protected."⁹

However, we suspect that CBS, in their reporting on Alar, did not intend to harm the apple growers. They wanted to motivate EPA to take action against Alar and did not anticipate the massive stigma response they created. Thus one strategy would be to educate the media about the nature and potency of stigma and their responsibility to anticipate and weigh potential stigma losses when deciding what information to present about risk and how they should frame the data.

⁹ See *Auvil v. CBS 60 Minutes*, 800 F. Supp. 928 (E.D. Wash. 1993).

In response to the Alar incident, Florida, Washington, and other states have proposed (and in some cases passed) legislation allowing producers of agricultural commodities to recover damages for the disparagement of any agricultural commodity (where disparagement is defined as “dissemination to the public . . . of any false information regarding the application of any agricultural chemical or process to agricultural commodities that is not based on reliable scientific data, that the disseminator knows or should have known to be false, and that causes the consuming public to doubt the safety of any agricultural commodity.”).

Although “anti-disparagement legislation” may discourage and punish some wanton attacks on products, it seems unlikely to penetrate the First Amendment defense of the news media. A recent case in point is the rejection of the suit filed by the Texas Beef Group against Oprah Winfrey for uttering critical remarks about the feeding of cattle and about eating hamburgers.

Reduce Stigma Impacts

The economic impacts of some stigmatizing events may possibly be mitigated through insurance and compensation mechanisms which may convince the public that property is likely to be safer than they may have anticipated.

Insure Brownfields

Property may be stigmatized when there is a concern that contamination of the land will require a very expensive cleanup under Superfund [administered by the Environmental Protection Agency (EPA)]. Several uncertainties confront the property owner: the probability that contamination will be found on the land, the cost of the resulting cleanup and who will be responsible for covering all or part of this expense. In many cities large parcels of land may have no value at all, even though the technical analyses conclude that their potential benefits may exceed the expected cost of cleanup (i.e., the probability that there is contamination multiplied by the average cleanup cost for land of this type).

The term “brownfields” has been used to characterize property that was previously developed but is currently idle because it is either known

or thought to be contaminated. The General Accounting Office has estimated that there are 130,000 to 450,000 contaminated sites around the country and that it will cost an estimated \$650 billion to remediate these parcels of land.¹⁰

One of the reasons that the brownfields problem exists is because of great concern among buyers of property that they may be forced to incur large cleanup expenses if the land that they purchase is found to be contaminated. In addition, the financial institution that issues a mortgage is concerned that it may have to cover the costs of cleanup if the buyer goes bankrupt. Many areas in the inner cities are stigmatized because there is great uncertainty regarding the risk (probability and consequences) that the land is contaminated with toxic wastes.

One way to deal with the stigma threatening the development of certain parcels of land is to provide property transfer insurance so that buyers know that they are protected against future losses. In order for insurance to be marketable, there needs to be a more precise estimate of the risk associated with any particular piece of property than is normally found through title searches. Audits and inspections, such as a pre-acquisition site assessment by an engineering consulting firm to determine whether the property is contaminated, are needed to clarify the nature of the risks. If, in addition, federal and state environmental protection agencies are willing to issue well specified standards for cleanup, then property owners and potential insurers will even have a better idea on what the costs are likely to be should an audit reveal contamination.

Insure New Facilities

Residents in a community may be concerned that locating a noxious facility (e.g., landfill, hazardous waste disposal plant, or radioactive waste repository) in their backyard may stigmatize the area because of the perceived risks associated with the wastes that are stored there. This concern may be associated both with potential negative health effects from exposure to radiation or toxic substances and with projected negative economic impacts such as decreases in property values or reduced business activity.

¹⁰ See General Accounting Office, *Superfund: Cleanups Nearing Completion Indicate Future Challenges*, GAO/RCED-93-188 (1993).

Even if analysts offer scientific evidence that the risks are very low, these concerns are unlikely to be allayed. For example, residents living near Operating Industries, Inc. (OII) landfill in the Los Angeles, California metropolitan area were told by experts that the health risks associated with odors from the landfill were harmless. A survey conducted by the California Department of Health found no statistical differences in mortality or incidences of cancer and liver disease for residents in the OII area and control communities. Yet many of those residing where the OII landfill was located, believed that the facility posed serious health risks to them. This concern adversely affected property values in the community.¹¹

If one is siting a hazardous facility in an area, then the type of insurance that the developer or company purchases may reduce the discrepancy between the experts' and public's views of the risk. The idea is a simple one: if an insurer is willing to offer coverage against an accident then it must be confident that the risk associated with the facility can be quantified. The lower the premium charged by the insurer, the safer the facility is likely to be. In this sense insurance can serve as a signal of relative safety, to the extent that the information on premiums is publicly available. Furthermore the public can view the insurance premium as a surrogate for the risk and hence better appreciate how risky it is.

Guarantee Property Values

One way to address the concern that residents in a community have with respect to the economic impact that siting a noxious facility will have is for the developer to provide property value guarantees. For example, in 1990 Champion International Corporation established a program to protect the property values of residents within two miles of an industrial landfill they sited. The company monitors changes in the sales prices of property in the county over a 10-year period and pays residents who sell their homes for any decrease in property value that is attributed to the presence of the landfill.

As with insuring a new facility, this type of guarantee serves as a signal for safety since the developer is willing to cover costs associated

¹¹ See Gary McClelland et al., *The Effect of Risk Beliefs on Property Values: A Case Study of a Hazardous Waste Site*, 10 *Risk Anal.* 485 (1990).

with the facility. If it felt there would be large expenses then it would not offer this type of compensation. It is clearly designed to allay any concerns that citizens in the area may have with respect to the risk.

The challenge in developing property value guarantees is to develop an index that will effectively measure normal changes in comparable structures in areas which are not subject to the risks associated with the new facility. Champion's approach seems to make sense, but it would be interesting to know what their experience has been over the past seven years.

Provide Compensation

Empirical evidence indicates that compensation can prove effective in gaining public acceptance for siting facilities on the benign end of the spectrum (e.g., landfills, prisons), but it is subject to serious limitations when it comes to facilities that the public regards as particularly risky or of questionable legitimacy such as nuclear waste storage facilities. These require creative mitigation measures such as independent inspections of the facility and local authority to monitor and shut-down the facility. Even then they may be viewed as too risky to be acceptable with or without compensation.

A striking illustration of actual rejection of compensation comes from North Dakota. In 1990, three county commissioners in sparsely populated Grants County applied for a non-binding grant to study the possibility of hosting a monitored retrievable storage (MRS) facility for temporarily storing high level radioactive waste. The three commissioners who initiated the process were all voted out of office in a recall election because they accepted the grant even though the grant was not binding in any way.¹² Even if residents in the host community are willing to accept compensation, it may provoke very strong negative reactions and stigmatization because some view it as morally wrong. Elster suggests that people may view health and safety as inherent rights that should never be traded off for material goods.¹³

¹² See Howard Kunreuther et al., *Siting Hazardous Facilities: Lessons from Europe and America*, Energy, Environment and the Economy: Asian Perspectives (Paul Kleindorfer et al., eds., 1996).

¹³ See Jon Elster, *Local Justice: How Institutions Allocate Scarce Goods and Necessary Burdens* (1992).

Conclusion

The varieties of risk-induced stigma described in this paper are noteworthy because they exemplify what has been called the “social amplification of risk” and illustrate a new form of societal vulnerability. Whereas in the past human health and safety was the primary vulnerable commodity, increasing technical and medical sophistication combined with hypervigilant monitoring systems to detect incipient problems certainly make our lives healthier and safer. If eating infected beef truly has the potential to trigger an epidemic of brain disease in humans, we will likely be able to limit the damage by publicizing the threat and measures to contain it.

The price of this vigilance is the impact that this information itself has upon social, political, industrial, and economic systems – witness the effect on the British beef industry and the reduction in beef consumption in other countries as well. Information has reduced our vulnerability to accidents and diseases at the cost of increasing our vulnerability to social and economic catastrophes of immense scale.

This special issue of *Risk* brings to our attention the essential questions: What is the proper role of communication in a democracy? How should media communicate when their messages have the power to create risks greater than those they are informing us about? There are no easy answers to these questions. Communicating the bad news about accidents, pollution, mismanagement, etc., not only destroys our trust in products, places, and technologies, but it often stigmatizes them as well. The impact of modern communication media on the public’s perception of risk poses a special challenge to democratic societies. We hope that the steps outlined in this paper will make a start toward creating a useful dialogue on this important topic.

