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Escalating Commitment: Business Investments and CSR

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There are many instances, in all areas of business, in which individuals can become committed to a course of action that begins costing more than it is producing. Because it is often possible for persons who have suffered a setback to recoup their losses through an even greater commitment of resources to the same course of action, a cycle of escalating commitment can be produced (Staw, 1981). This thesis has been designed with the purpose of trying to understand why that cycle exists and what factors may have significant influence on the cycle known as escalating commitment.

Introduction:

An escalation situation occurs when an individual incurs costs in pursuit of a goal that is unlikely to be attained no matter what future actions are taken (Staw, 1981). If the individual follows this "failing" course of action and continues to allocate resources to it, he or she is exhibiting escalation behavior (Whyte, 1991). As Sleesman, Conlon, McNamara, and Miles point out in their Meta study: "One of the most robust and costly decision errors addressed in organizational sciences has been the proclivity for decision makers to maintain commitment to losing courses of action, even in the face of quite negative news" (Brockner, 1992).

This type of behavior has been around for decades and has been demonstrated publicly in many situations. Dating back to the 1980s, after an aggressive bidding war, Robert Campeau bought Bloomingdale's for an estimated $600 million more than the leverage buyout was in fact worth. In regards to this heated bidding war, The *Wall Street Journal* noted: "We're not dealing in price anymore but egos." Soon following the outlandish purchase, Campeau was forced to declare bankruptcy. Commentary and retrospective accounts of this project could easily be interchanged for other instances in history such as the rogue trades of Nick Leeson at Barings Bank (Jensen, Conlon, Humphrey, & Moon, 2011), the failed "Taurus" information technology project for the London Stock Exchange (Drummond, 1996), or Boston's Big Dig Project (Dahl, 2011). In each

case a desire to avoid a modest loss was present as managers took ever-increasing risks by escalating commitment to a previously made decision in which they championed.

Escalating commitment, according to Dr. Barry Staw's definition, refers to a pattern of behavior in which an individual or a group will continue to rationalize their decisions, actions, and investments in an investment when faced with increasingly negative outcomes rather than alter their course of action. "Sunk cost fallacy", a term closely associated with the escalation of commitment, has been used by economists and behavioral scientists to describe the phenomenon where people justify increased investment of money, time, and energy in a decision, based on the cumulative prior investment, or "sunk costs." This is done despite new evidence suggesting that the cost of continuing the decision outweighs the expected benefit from said continuation. These decisions are irrational in their current context, but remain in alignment with the decisions and actions previously made, and they can be influenced by a variety of determinants and contexts (Staw, 1997). However, the dilemmas leading up to such decisions usually occur because the prior choices are no longer working, or the prior choices are presently causing personal or group losses. Put very simply, the escalation of commitment occurs when persistence is chosen over withdrawal.

The question, in this case, is not *how*, but *why* does this phenomenon continue to exist. Over 35 years ago, management researchers began attempting to understand the complex answer to this simple question: Why do people continue to increase their level of commitment to a project that is so clearly failing? Enduring interest in this topic, known as the escalation of commitment among managers, has since grown due to the proliferation of variables that have come along with the answer to this question. Researchers taking interest in this topic pose questions like, "Is it the sense of personal responsibility for the initial decision that led to the decision to continue in the face of economic failure?" or "Is it pure determination to overcome the extent of sunk costs and

prove success?" and so on. The answer, as time has shown, is that there is not one answer to this complex question. As such, management researchers have focused their attention to the factors that influence the decision-making process.

This study specifically focuses on the self-justification theory and external factors influencing decisions-making, such as company reputation. In addition, this study targeted university management accounting students who were faced with the choice of reinvesting for the benefit of short-term tax avoidance or the long-term benefits of sustainable investing.

Our results did not support the hypotheses showing that no matter how negative the economic circumstances or how the reputation of the company may be impacted, students with equal financial information but differing responsibilities (i.e. those who made the initial decision to invest and those whose predecessors made the initial decision to invest) show an insignificance difference in their decisions to reinvest in the initial project. The findings do suggest, however there to be a significant difference in the decision to reinvest among accounting versus non-accounting students. As one participant responded, "In the long-run I think consumers will opt for a green alternative, additionally CSR is a case against Option A and for Option B." The results also point out the equaled balance in risk management systems among men and women. This finding can be interpreted from the absence of a significant difference in the decision to reinvest among men and women. The existence of gender differences in propensity to take risks has been documented in a large number of questionnaire and experimental studies. In a meta-analysis by Byrnes, Miller, and Schafer (1999) reviewed over 150 papers on gender differences in risk perception. They concluded that the literature "clearly" indicated that "male participants are more likely to take risks than female participants" (p. 377). In this case, our study found the opposite to be true.

Literary Review:

Theoretical Background

The first empirical test of the escalation effect was presented by Barry M. Staw in 1976 at the University of California, Berkley. Staw surveyed 213 individuals, who were employed in a business position at the time, and asked them to allocate research and development funds to either two of the company's divisions. Staw conducted this experiment by presenting each participant with one of two cases in which each student was instructed to act as the Financial Vice President of the Ace Research & Development Company. The participant was asked to complete a single case in which $4million had been invested in a research project. Currently (1) no benefits had been derived from the investment, and (2) a competitor had just exhibited a similar and superior product to that being developed by Ace (Rutledge & Harrell, 1993). Accordingly, participants were randomly separated into four groups where half received information that, as Financial Vice President, they originally recommended the investment project whereas the other half were told a predecessor made the decision. Additionally, half of the participants were presented with positively-framed cases (indicating potential gains) and the other half were presented with negatively-framed case (indicating potential losses) (Rutledge & Harrell, 1993).

Overall, the participants chose to allocate more money to their original chosen division and they continued to allocate more money to that division, even when it began declining in success. Staw concluded his experiment with the understanding that managers who are responsible for the initial decision to invest resources and activity into a project, will continue to invest in said project against all other things, including declining economic success.

In addition to Staw's initial contributions to the field, extended research on escalation behavior has been focused on identifying the psychological and economic determinants of

escalating commitment. Ruchala, Hill, and Dalton (1993) theorized that responsibility is important to the escalation cycle, but they concluded that this variable was not incorporated appropriately in previous studies. Under prior assumptions in most studies, the "responsible" participant makes the original choice and also decides whether to continue the project in the face of negative results or declining economic success. In contrast, the "irresponsible" participant only enters the experiment for the second decision, meaning the participant is not held responsible for making the initial decision to invest in the project. Per Ruchala, Hill, and Dalton (1993), the fact that some subjects enter the decision context mid-stream could cause confounding due to task framing and differences in beliefs. In order to combat this situation, a more specific variable called personal identification was used. In this case, a loan officer advocates initiating a loan relationship. To remove confounding concerns, all subjects made the initial decision to loan funds. After receiving additional information suggesting that the loan was a mistake, those same subjects were asked to make a subsequent decision regarding whether to continue the loan relationship. Those personally responsible chose to escalate to a greater degree. However, the greatest escalation occurred when personal identification existed and when blame for a failing loan relationship could be diffused (i.e., loan committee concurred with officer's view). If personal identification was present with no avenues to diffuse blame (i.e., sole responsibility for initial loan approval) escalation diminished entirely (Ruchala, Hill, Dalton, 1993).

Additionally, other studies have addressed issues compatible with those of Ruchala, Hill and Dalton (1993). In 1978, Staw and Ross found that managers who attribute the cause of failure to exogenous factors tend to escalate commitment. In 1989, Barton, Duchon and Dunegon reported that responsible subjects given positive feedback chose to escalate more often than those given negative feedback. However, a predicted interaction between feedback type and level of

commitment was not supported in a laboratory experiment conducted by Walsh and Henderson (1989). In a case scenario where a strike by union members caused failure of a project (Leatherwood and Conlon, 1987), responsible subjects who could diffuse blame chose to withdraw. Those who were responsible for the initial decision to fund the project and should have foreseen the possibility of a strike tended to escalate. This study serves, among other things, to contradict Ruchala, Hill and Dalton's (1993) findings.

In 1977, Staw and Fox expanded Staw's 1976 study by testing whether escalation continues to occur over time. Results were consistent with Staw's original (1976) experiment in that those who were responsible for the initial decision did commit significantly more funds than those who did not. Those subjects in the high efficacy condition also committed more funds while those labeled less effective did not choose to escalate (Staw & Fox, 1977). Overall, the experiment concluded that escalation did decrease over time, but the pattern found was not linear over the three-year period (Staw & Fox, 1977). Supporting this conclusion, McCain's empirical results also suggested that escalation occurs earlier in the investment cycle, but a process of de-escalation begins later in the cycle (McCain, 1986).

Continuing their stream of research, Staw and Fox furthered this experimentation in 1979 that supported a self-justification theory for escalation tendencies, but they found evidence of an additional motivation to continue committing funds. As concluded in the experiments, individual participants were motivated to externally justify actions. The data gathered suggested that "trapped" administrators are most likely to escalate commitment rather than change behavior due to both job insecurity and policy resistance. Those experiencing job insecurity or resistance to policy invested the most funds in apparently losing courses of action (Staw & Fox, 1979). The authors concluded that when worried about political vulnerability, administrators were less flexible

in decision making and it seemed that more funds were committed when need for external justification was high. This conclusion did not support the self-justification theory and, furthermore the need to justify actions to oneself was apparently secondary to meeting the demands on external factors.

Furthering the study of external factors' influence on decision making, Staw and Ross examined reactions of observers to decision successes and failures. Administrators, business students and psychology students were used as subjects to test the importance of both consistency and success in decision making. Administrators who were both consistent and eventually successful were rated highest regarding leadership effectiveness. Although all subjects viewed consistency as important, administrator subjects placed more value on consistency than student subjects did (Staw and Ross, 1980). However, escalation has been found in settings other than the typical laboratory study where decisions focus on allocation of funds. In 1982 Bazerman, Beckun, and Schoorman applied the self-justification theory in a performance evaluation context. When responsible for promoting a "failing" employee, managers were more likely to escalate commitment toward that employee by giving a more positive review and a more optimistic projection of future performance. Three reasons were cited for such responses: (1) Perceptual processes may be biased because negative cues are not fully acquired, (2) negative cues may be acquired but weighted differently due to biased judgmental processes, and (3) negative cues may be acquired and weighted properly but the decision maker may simply not be willing to publicly contradict a prior decision (Bazerman, Beckun, & Schoorman, 1982).

Bazerman, Beckun, and Schoorman (1982) concluded that the need to justify to themselves or others that prior decisions were rational may induce individuals to distort their mental processing in an effort to appear rational. Distorting information to others is also suggested as a

consequence of the need to justify ones actions. Caldwell and O'Reilly (1982) recorded evidence that supports this view. They found that the selective use of information may be a conscious effort to manipulate signals sent to others in an effort to manage others' interpretations of the failure. Justification attempts are thought to include management of communication as well as simple persistence of behavior (Klimek, 1997).

Among the many studies in this field, those previously cited and others, there have been multiple factors that have been concluded to have an influence over escalation behavior. In summary, a psychological explanation for escalation of commitment stresses that justification processes are invoked when the individual takes responsibility for making the decision that proves to be failing. Responsibility taken by the individual implies an opportunity to choose between alternatives and that consequences of actions that are known or at least relatively foreseeable. The stronger the commitment, which is a function of choice and foreseeability, the greater the resistance to change or the greater the tendency to escalate. Escalation by a decision maker leaves open the possibility for future success from a now failing course of action. Such a success would serve to justify one's actions to him/herself and thus reduce psychological dissonance. The need to justify past decisions may also stem from pressure by external sources. Like self-justification, external justification may promote escalation behaviors. Continued funding of failing projects may give others a more positive impression of the decision maker if eventual success occurs than if that decision maker admitted failure early without trying to rectify the bad situation. From a psychological viewpoint, a model explaining an individual's tendency to escalate should include the decision maker's need for self-justification and for external justification. Among many factors, three theories from psychology and economics will be employed in this study to explain escalation

behavior, including: self-justification theory, prospect theory, and agency theory (Sleesman, 2012).

Self-Justification Theory

Self-justification describes the behavior that occurs when a person encounters cognitive dissonance, or a situation in which a person's behavior is inconsistent with their beliefs, that person tends to justify the behavior and deny any negative feedback associated with the behavior. This thought process is a part of commitment decisions of leaders and managers in any position of power and can therefore cause a rise in commitment levels. Furthermore, self-justification theory has the longest history in the escalation literature and draws on cognitive dissonance (Festinger, 1957) and psychological commitment (Kiesler, 1971) to argue that self-justification is an important psychological process underlying escalation behavior. This attitude provides "one explanation for why people escalate commitment to their past investments." In essence, managers make decisions that reflect previous behavior patterns and managers tend to recall and follow information that is aligned to their behavior to create consistency for their current and future decisions; a ways of subconsciously justifying their initial decision. Furthermore, decision makers are not willing to admit that they have made a mistake and, in order to maintain the illusion that they have not erred by committing to the failing course of action, they continue to invest in the decision. Studies show that managers are more likely to commit to an unprofitable project that they themselves initiated (Staw, 1976, 1981). As a result, individual responsibility for initiating an unprofitable project creates a self-justification motive.

Prospect Theory

Prospect theory is a behavioral economic theory that describes the way people choose between probabilistic alternatives that involve risk, where the probabilities of outcomes are known.

This theory helps to describe the natural reactions and processes involved in making a decision in a risk-taking situation. Furthermore, prospect theory asserts that individuals show risk-seeking behavior when outcomes to decision alternatives are framed negatively. When alternatives are framed as a choice between a sure loss (the loss of the investment already spent) and the possibility of a larger loss combined with a chance to return to the original expected outcome (Kahneman & Tversky, 1979; Whyte, 1986), decision-makers prefer the risky alternative, even when its expected value is less than the certain alternative (abandonment). On the other hand, risk-averse behavior is expected when the decision outcomes are positively framed. This occurs when there is a choice between a sure gain (the initial return on the investment) and a gain which is less certain (Bazerman, 1984; Rutledge & Harrell, 1993). Prospect theorists believe that one's use of this process is when there is a negative downfall in the stakes that will affect the outcome of the project. To ensure they will not fail, the individual may add more resources to assure them that they will succeed. Though this theory seems realistic, researchers Davis and Bobko (1986) found no effect of personal responsibility on continued commitment to the previous course of action in the positive frame condition. Which means that escalation of commitment will be lower in the higher responsibility situation. Therefore, in escalation decisions, where the existence of a sunk cost may be equivalent to framing as a sure loss in the absence of escalation, individuals are more likely to allocate additional resources to an unprofitable project (Salter, 2013).

Agency Theory

The agency theory is a supposition that explains the relationship between principals and agents in business. This theory is specifically concerned with resolving problems that can exist in agency relationships; that is, between principals (such as shareholders) and agents of the principals (such as managers/executives). Because this relationship exists, under agency theory the

relationship between principal and agent is considered the main factor, among those considered, when making a decision. Therefore, agents will, under certain conditions, make decisions that maximize their own personal utility, not that of the principal. With that being said, it is important to consider how incentives and the availability of information affect the relationships between principals and agents.

Two different information conditions may exist in a firm. If a principal has complete information with which to monitor an agent's actions, all information is public, and a condition of information symmetry prevails. In such an environment, it is in the best interests of the agent to discontinue a failing project because the principal will also know the project is failing. However, a divergence will occur when this is not the case. When an agent has private information about the projected future performance of a project, the principal is unable to completely monitor the agent's actions and decisions. Therefore, information asymmetry prevails. Here, the potential for goal conflict between the principal and agent arises. If, for instance, an agent's reputation was hurt by a decision to discontinue a project he or she had started, the event would negatively affect the agent's future career opportunities, thus providing an incentive to continue to invest in the project regardless of its economic success.

In the context of managerial escalation of commitment, information asymmetry, means that the manager knows, and will continue to know, more about the performance of the unprofitable project than his/her superior or the firm's owners. When the manager is responsible for the project, they has an incentive to escalate an unprofitable project against the principal's interests in order to protect his/her reputation and future career prospects (Harrison, 1993).

External Influences on Theories

It is also important to consider external influences whenever examining behavioral influences on decision making, regardless of the setting (i.e. business environment). National culture, defined by Hofstede, is "the collective programming of the mind which distinguishes the members of one group or society from another." This factor may affect the influence of psychological factors in decision-making, and may affect the rationality calculus underlying adverse selection. Prospect and agency theories were developed in North America and may therefore be biased by North American values (Hofstede & Bond, 1988). Based on a survey of 116,000 workers from 72 countries, Hofstede (1980, 1983, & 2001) identified four dimensions of national culture: Power Distance, Uncertainty Avoidance, Individualism, and Masculinity. Hofstede and Bond (1988) added a fifth dimension: Long Term Orientation. Individualism implies a loosely-knit social framework in which people are expected to take care of themselves and their immediate families only, while collectivism is characterized by a tight social framework in which people distinguish between in-groups and outgroups. People in collectivist cultures expect that other members of the group they belong to will look after them, and in turn they owe absolute loyalty to the group. The individual is motivated by group interests and emphasizes the maintenance of interpersonal harmony. In contrast, people from an individualistic culture tend to place their self-interest ahead of those of the group.

Management Accounting

The primary objective of management accountants is the process of identifying, measuring, analyzing, interpreting, and communicating information for the pursuit of an organization's goals (Martin, Chapter 1). Furthermore, managerial accounting information is aimed at helping managers within the organization make decisions internally. More specifically, management

accounting contains a number of decision‐making tools that require the conversion of all operating costs and expenses into fixed and variable components. The responsibility for providing this cost behavior information falls squarely upon the shoulders of the management accountant. Additionally, the conversion of ordinary financial data as typically found in the general ledger accounts requires that the management accountant have a thorough understanding of cost behavior theory, applied specifically in this study.

In addition to the responsibilities and understanding that come with management accounting, external factors also play a role in decision making. As such, this study was designed to target two prominent factors in decision-making today: corporate tax avoidance strategies versus sustainable investing and how the reputation of a company continues respectively.

Long-run corporate tax avoidance has been described as a theory that is based on the ability to pay a low amount of cash taxes per dollar of pre-tax earnings over long time periods (Dyreng, Hanlon, & Maydew, 2008). In recent years, corporate tax strategies have become the focus of some high-profile public debates. In the past decade alone, the public has become increasingly aware of corporate motivations to implement tax strategies. Hungry for tax revenue, cash-starved governments around the world also have pushed for greater transparency in corporate tax returns (Hyatt, 2015).

As a result, corporate leaders in the United States have become more aware of how tax avoidance strategies may serve to destroy the company's reputation in the eye of the public before any financial returns are able to be recognized. As a result, finance executives, as well as corporate CEO's have found that they have an important role in tax that is over and above just assessing complex accounting and financial impacts. That role is to calculate the implications that any tax

decisions could have for a company's public image and reputation (Hyatt, 2015). However, these changes in corporate management's decisions are significantly different from those made in the past. In the past, a company's tax function might have toiled in near-seclusion. During their deliberations, tax experts would balance two competing factors: the fiduciary responsibility to comply with all relevant laws and regulations, and the corporate directive to protect profit margins by minimizing tax liabilities (Hyatt, 2015).

In today's day and age, finance executives must add another layer of scrutiny to those traditional considerations in order to stay above breakeven. This additional consideration must include how the company's tax strategies will be perceived in the eyes of the public. Corporations, now, face the risk of being viewed as loophole-driven, devious, or even unpatriotic company who is not living out its mission. Such public perception has the abrupt ability to destroy a company's customer base and ultimately send the company into economic failure.

To assess how much influence public awareness exerts on tax planning strategies, CFO Research conducted a study of finance executives at large U.S. companies. The project, co-sponsored by KPMG, LLP included an online survey which was sent to U.S. finance and tax executives employed at companies with more than $1 billion in annual revenues in FY14. In addition to analyzing the 112 responses to the survey, CFO Research also conducted in-depth interviews with two senior executives at U.S. companies with international operations and came to results that revealed that many finance and tax executives say their companies are allocating extreme amounts of attention and resources to their tax strategy. More and more, the risks surrounding tax planning, whether related to reputation, compliance, or strategy, are being

weighed when executives make operating decisions and set financial policies (CFO Research & KPMG, 2015).

At the same time, as millennials begin their rise as the next generation to take control of the world, corporate social responsible and company transparency is becoming, what some argue to be, a necessity in order to attain corporate longevity and ultimate sustainability. By definition, corporate social responsibility (CSR) is a duty of every corporate body to protect the interest of the society at large (Fontaine, 2013). Many companies have started to engage in CSR as a strategy in order to gain benefits that can give them an added advantage over their competitors. There have been increasing numbers of companies engaged in CSR activities to run their businesses. Nowadays CSR can drive companies to succeed in business by increasing sales volume and brand awareness (GRR, 2014).

The sustainable investing model, advocated by a study done by Oxford University, involves investing having regard to a broader mission, deeper thinking on investment strategy and a longer-term framework for evaluating success. Oxford researchers suggest sustainable investing preferably includes two elements. First, it involves a long-term investment strategy whose value creation proposition promotes current achievement without compromising future achievement and secondly, sustainability requires investors to act fairly by considering the externalities created by their investments and their social responsibilities (Urwin, 2009). This second part of the sustainable investing model includes the integration of Environmental, Social, Governance (ESG) factors and ownership responsibilities; such factors are central to responsible investing codes established to support mitigations of future societal discord from problems like climate change and natural resource degradation (Uriwn, 2009).

Though sustainable investing does not always demonstrate the most return on investment in the short-run (due to extensive transition costs, disposal costs, etc.), companies are beginning to view a sustainable lens as the most "popular" way to run their business. The integration of ESG factors into the investment decision making process broadens the spectrum of risks being considered and, by nature, addresses the volatility of an investment as well. This could mean that the investment is likely to perform better for longer, demonstrating a greater return on investment that can be sustained longer. It is a common belief that sustainable investments yield less than conventional investments, however there is evidence to indicate that companies with better ESG standards can and do generate better risk-adjusted returns (Urwin, 2009). This internal benefit is as heavily weighed, when considering sustainable investment, as the perception such investments have in the minds of shareholders and the public as well.

For example, NIKE Corporation has proven success in this way and has turned their sustainable investment into a competitive advantage among competitors. The strategic move was made by NIKE back in the 1990s turning their defensive reaction to labor and environmental issues into the driving force behind the company's new culture, strategy, mission, and competitive edge. Currently supplying one-third of the world's sportswear and training shoes, NIKE posts industry leading financials that are currently up 16% from 2011 (NIKE, 2015). NIKE financially remains incredibly strong against its competitors by pushing boundaries of sustainable innovation. NIKE's business strategy of decoupling themselves from constrained resources has not only allowed them to leave a lighter footprint, but has turned out to be cost effective as well. Such investments in sustainable efforts like the new ColorDry technology has resulted in two times as much revenue earned, 23.8% return on invested capital, and a 96% increase in the stock price the last five years alone (NIKE, 2015). In effect, this strategy runs rich with a unique history and colorful innovation

that has provided the Oregon based corporation with a unique and valuable position in the Apparel Footwear and Accessories market. NIKE's strategy implements their belief in sustainable innovation that benefits all stakeholders involved in the process; including the environment.

Hypothesis Development

Based on the above literature, this experiment seeks to examine two hypotheses which will consider how the context of a decision and the type of information presented influences the student's choice. First, we argue that managers will have greater concern for the value of their own reputations, which would enhance the self-justification effect. Therefore, the first hypothesis (H1), based on Staw's original experiment, predicts that those students who are responsible for the initial decision will demonstrate an escalating commitment to the decision and will continue to invest resources in the original decision (i.e. fossil fuels), no matter how negative the economic circumstances or how the reputation of the company may be impacted.

The second hypothesis (H2) predicts that students given adequate financial information to reinvest in a more sustainable option (regardless of the case assigned) will choose to invest in the more sustainable option regardless of the tax affects, in order to promote a quality company reputation.

Methodology

Research Methods

A decision-making experiment was performed to examine the two hypotheses presented above. Prior escalation effect studies, as previously cited above, have also employed decision making tasks. Suggestions for improving prior studies were incorporated into the experiment in multiple ways. Both retrospective (past-oriented) and prospective (future-oriented) information were provided to the participants (Appendix 1 & 2). Concrete, rather than ambiguous,

circumstances were presented, with probabilistic information being provided about future performance expectations (Bowen, 1987; Northcraft & Wolf, 1984). Both positively-framed and negatively-framed information was provided to the participants (Bazerman, 1984). Lastly, the new additions to this experiment include (1) tax effects versus sustainable investing in regards to the company's reputation, and (2) the distribution of two cases in order to reveal any relation to the self-justification theory.

Participants

A total of 96 individuals participated in this study. Each participant was enrolled as a full-time student at the University of New Hampshire's Paul College of Business and Economics. The typical individual who participated was 22 years of age and included 60 (63%) males and 32 (33.3%) females. Additionally, the population of participants was comprised of 62 accounting students and 33 non-accounting students (i.e. those students whose chosen majors did not include accounting). The data were collected during the participants' regularly scheduled courses during the spring, 2016 semester. All responses were anonymous. Based on Paul College's academic curriculum required for accounting majors, as well as the course curriculum designed for Strategic Management and Decision Making, each participant was deemed to be well-qualified for the managerial/budgeting decision making experiment.

Instrument and Data Collection

In an effort to understand the behavioral aspects of escalating commitment further, this experiment has been designed to model Staw's original experiment (as outlined in prior sections), using college undergraduate students, who attend the Paul College of Business and Economics at the University of New Hampshire (UNH) as research participants. These students were selected as participants due to their enrollment in the Advanced Managerial Accounting, Master's in

Accountancy (MSA) course, and a Strategic Management in Decision Making course offered at UNH. Said participants made up two treatment group (Accounting majors and other various undergraduate business majors). The students were addressed prior to completing the case study and informed of the following:

"Hello. My name is Victoria (Tori) Forrest. I am currently working with Professor Hasseldine on my honors thesis. My project is escalating commitment among business investments and corporate social responsibility (CSR) among managerial accountants, specifically. To add an extra layer of depth, I am researching the decision making preferences among UNH business and accounting majors. This data will be beneficial, as it will add to my analysis of different trends, and may be helpful to others looking for information about college students' attitudes toward commitment to company projects. I am hoping to survey about 100 students. All that this study requires is reading a situational case and answering a survey question regarding what the final decision should be, in your own opinion. It should only take about 10-15 minutes. There are minimal risks involved.

Your participation is completely voluntary. There is no penalty if you choose not to complete the survey. You may also stop taking the survey at any time without penalty. All of the surveys will kept private between myself and Professor Hasseldine. The collected data will be reported in my final thesis paper, which will be submitted to the PCBE Honors Advisors and may be published at some point in the near future. The survey is completely anonymous, so your name will not be attached to it. If you have any questions please feel free to ask me. By taking a survey you are consenting to everything outlined here."

Experimental Task

The cases were distributed to students individually ensuring the first student received Case 1, the second student received Case 2, and so on (a pattern that repeated until each student was

give of the two cases). Upon distribution the students were given 10-15 minutes to read the case study and complete the questions following each the respective case (Appendix 1 & Appendix 2).

In essence, an executive (student proxy) was asked to read the case through and position themselves in the respective scenario and to make a decision based on the information given. Treatment Group 1 consisted of accounting students who were enrolled in Advanced Managerial Accounting and MSA and Treatment Group 2 consisted of the students in Strategic Management in Decision Making. Each case explains that the student must assume the role of Financial VP of Ace Research Company. In Case 1 the student's role of Financial VP is a position they have held in the past and therefore, they are the individual responsible for the initial investment in Ace Research Company's Project X1 product. In Case 2 the student's role of Financial VP is a position previously held by a predecessor and therefore, they are not the individual responsible for the initial investment in Ace Research Company's X1 product. Regardless of the initial scenario, the student in each case in then asked to consider a competitor who has presented a similar product to the market that runs on fossil fuels (oil) but presents slightly cheaper than Ace's current Project X1 product. The student is asked to make a decision among the following choice:

1. Option 1.) Invest $4M to manufacture the X1 offshore using fossil fuels as a power source, but it will undercut the competitor because it will be made with low labor costs and in a low-taxed country. One potential risk is that Ace's reputation (and profits) may suffer if it is exposed as a tax-avoiding firm.
2. Option 2.) Invest an additional $4M to convert the power source into alternative sustainable fuel source. Although the competitor's oil-powered product would still outperform the X1, you believe that with a tax credit offered to buyers, there will still be a market for a "green

X1". One potential risk is that Ace's reputation (and profits) may suffer if consumers do not opt for the "green X1".

These two treatment groups allow the experiment to target two conditions (tax implications and sustainable investments) from the perspective of two groups of decision makers. The made their decisions in solidarity with no external influences other than the information presented in each case.

Results

Analysis of variance was used to analyze the data and to isolate specific variables within the experiment. The two independent variables were the "tax implications" and "sustainable investing" manipulations described above in the previous section. The participants' decision functioned as the dependent variable and was determined based on where they placed the "X" on their individual scale in each case respectively (Appendix 1 & 2). During the data collection and analysis process, numbers were assigned as a value based on where the participant placed the "X". These values ranged from 1.0 ("Definitely Prefer A") to 7.0 ("Definitely Prefer B"), included 0.5 increments respectively, and an indifference point of 4.0.

As such, the data was broken down and analyzed based on gender, major (accounting versus non-accounting), self-justification (if the initial decision to invest in the project was a significant factor in the student's decision to reinvest), and the frequencies of these outputs was analyzed as well. Significance was demonstrated in one of the data analyses: between accounting

and non-accounting majors' decision to invest in Option A or Option B, as shown in the charts below.

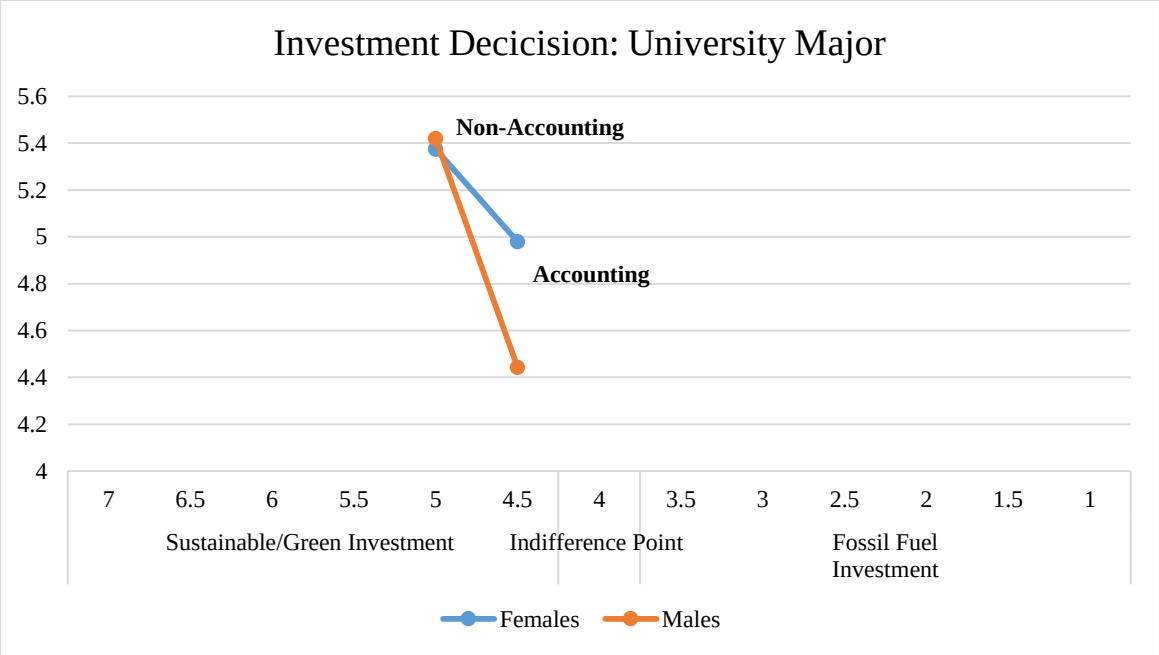
Decision

					95% Confidence Interval for Mean	
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound
Accounting	62	4.702	1.5641	0.1986	4.304	5.099
Non-Accounting	33	5.409	1.234	0.2148	4.972	5.847
Total	95	4.947	1.4902	0.1529	4.644	5.251

Decision

	Sum of Saquares	df	Mean Sqaure	F	Sig.
Between Group	10.78	1	10.78	5.064	0.027
Within Groups	197.957	93	2.129		
Total	208.737	94			

In further analysis of this cross section of the data, it is interesting to note that of the accounting versus non-accounting majors, males were the significant gender creating the significant difference in the decision making among majors. Male accounting majors returned an average decision of 4.443 and non-accounting majors returned an average decision of 5.420, (p = .018. Whereas female accounting majors returned an average decision of 4.979 and non-accounting majors returned an average decision of 5.375, (p = .486).



Additionally, another result that should be noted came from the lack of significant difference in the decision among genders. Males returned an average decision of 4.850 and females returned an average decision of 5.078, (p = .493). This finding is particularly note-worthy due to the fact that men have historically been more risk-taking by nature and females the opposite.

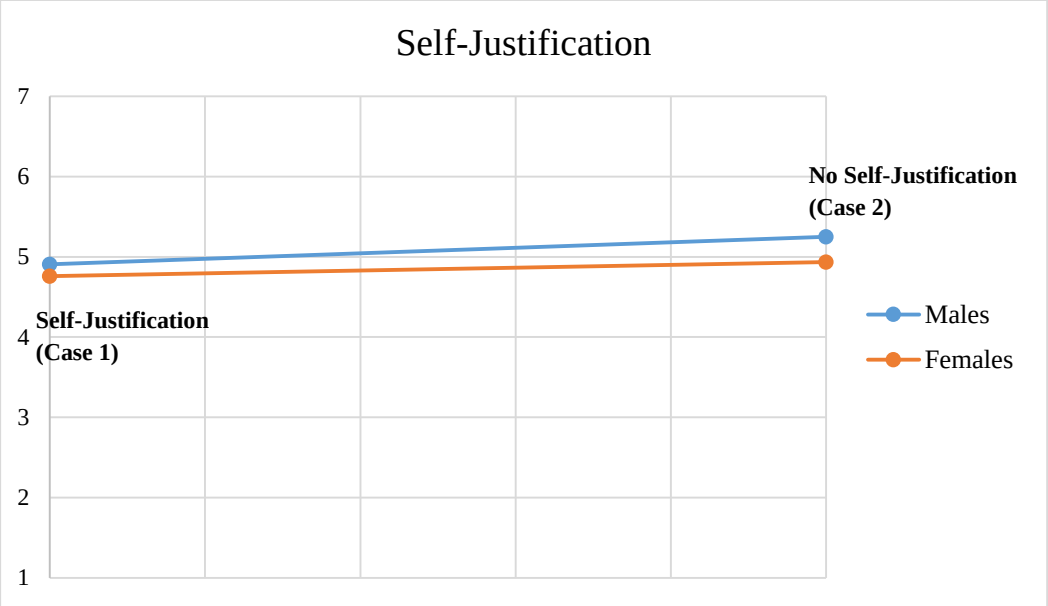
The existence of gender differences in propensity to take risks has been documented in a large number of questionnaire and experimental studies. For example, a meta-analysis by Byrnes, Miller, and Schafer (1999) reviewed over 150 papers on gender differences in risk perception. They concluded that the literature "clearly" indicated that "male participants are more likely to take risks than female participants" (p. 377). Recent work has begun to examine the generality and cognitive underpinnings of these differences in greater detail (Slovic, 1997). In one important study that provides a backdrop for the present investigation, Weber, Blais, and Betz (2002) assessed the risks that men and women perceived in behaviors spanning five different content domains (financial, health/safety, recreational, ethical, and social decisions). Gender differences were found in four of the five domains — social decision making being the exception — with

males perceiving less risk and indicating a greater likelihood of engaging in risky behaviors. Similar gender differences have been found in these domains in a large German sample (Johnson,Wilke, &Weber, 2004).

Analysis Discussion

The first hypothesis (H1) predicted that those students who were responsible for the initial investment decision would demonstrate an escalating commitment to said decision and will continue to invest resources in the original decision (i.e. fossil fuels), no matter how negative the economic circumstances or how the reputation of the company may be impacted. The standard deviation analysis of the results does not support this hypothesis. As summarized in the table below, participants who received Case 1 versus Case 2 did not exhibit a significant tendency to reinvest resources in the original decision (i.e. fossil fuels) given they were the ones responsible for making the initial investment in Project X1. This was determined by cross-tabulation of the investment decision (fossil fuels or sustainable fuel) weighted 1.0-7.0 among all participants with the respective cases given (Case 1 or Case 2). As such, Fisher's Exact Test was significant (p = .009) with the average decision of Case 1 being 5.4 and Case 2 being 5.5.

The second hypothesis (H2) predicted that students given adequate financial information to reinvest in a more sustainable option (regardless of the case assigned) would choose to invest in the more sustainable option regardless of the tax affects, in order to promote a quality company reputation. The results do not support this hypothesis either, as there was no significant difference in results among students who received Case 1 versus those who received Case 2. Refer to the graph below for the analyzed results of hypothesis 1 (H1).



Conclusion

After the discussion and analysis of the experiment and data results, it is appropriate to address some limitations and strengths of the research. As modeled after prior studies (formerly mentioned), the hypotheses were examined asking the participants to complete an experimental task. Said participants were not selected randomly, in fact, the participants of this study were selected because of the course in which they enrolled. In effect, it is possible that these individual may not be representative of the entire population of management accountants and managers who do not study accounting, respectively. This assumption is desirable in order to be able generalize the results.

A strength of this study was that it was designed to target specific variables among managers in present time (tax avoidance strategies versus sustainable investing). These factors were able to be targeted while also testing the self-justification theory by giving participants the same case with the same investment opportunities, but different loyalties to the initial investment decision.

This research should be extended in several ways. First, it would be relevant to apply the same procedures to a different population. For example, using managerial accountants in the professional world who have depth of management experience versus other middle and/or executive managers who have no particular accounting affiliation, but possess the same real world experience. This population may be better suited to represent the entire population and allow for the study's results to be generalized. Future studies might also consider using a population consisting of practicing accountants working specifically within a corporate tax function.

Appendix 1

Age:
Gender:
Major(s):

Case Overview

You are the currently the Financial VP of Ace Research and Development Company, a position you have held for several years. Your responsibilities include reaching decisions about the Company's investments in research projects.

You must reach a decision about whether to invest additional funds in Project X1. Project X1 is a product research and development project that is currently under way. It has required the investment of $8 million of company funds over the last 12 months. This project represents about one-fourth of the company's investments in projects at this time.

A competitor has just exhibited a product that is similar to that of Project X1, but is slightly cheaper than the Ace X1 product. This has caused the $8 million investment to have little value unless a new strategy can be found. The competitor's product uses traditional fossil fuels (i.e. oil) as a power source. As Financial Vice President you made the original decision to invest in project X1, so your superiors will hold you responsible if a loss is incurred on the project.

This situation may, however, be changed by investing an additional $4 million (which is available) to change the power source to an alternative sustainable fuel source OR to shift production offshore for lower labor costs and a reduction in the corporate taxes that the firm will be liable for. Both options have the same level of financial risk attached to them.

Therefore, your two available options regarding Project X1 are:
Option A: Invest an additional $4 million into Project X1. The money would be used to manufacture the X1 offshore using fossil fuels as a power source, but it will undercut the competitor because it will be made with low labor costs and in a low-taxed country. One potential risk is that Ace's reputation (and profits) may suffer if it is exposed as a tax-avoiding firm.

Option B: Invest an additional $4 million into Project X1. The money would be used to convert the power source into alternative sustainable fuel source. Although the competitor's oil-powered product would still outperform the X1, you believe that with a tax credit offered to buyers, there will still be a market for a "green X1". One potential risk is that Ace's reputation (and profits) may suffer if consumers do not opt for the "green X1".

Decision: Make a mark "X" at the appropriate place on the line below to indicate your preference for Option A or Option B.

|.....|.....|.....|.....|.....|.....|

Definitely Prefer A — Definitely Prefer B

Please briefly describe your reasoning for your decision below (i.e. tax break, CSR, company reputation, prior experience, etc.):

Appendix 2

Age:
Gender:
Major(s):

Case Overview

You have just become the Financial VP of Ace Research and Development Company, a position held by a former colleague for several years. Your new responsibilities include reaching decisions about the Company's investments in research projects that were originally chosen by your predecessor.

You must reach a decision about whether to invest additional funds in Project X2. Project 2 is a product research and development project that is currently under way. It has required the investment of $8 million of company funds over the last 12 months. This project represents about one-fourth of the company's investments in projects at this time.

A competitor has just exhibited a product that is similar to that of Project X2, but is slightly cheaper than the Ace X2 product. This has caused the $8 million investment to have little value unless a new strategy can be found. The competitor's product uses traditional fossil fuels (i.e. oil) as a power source. As Financial Vice President you did not make the original decision to invest in project X2, however your superiors will hold you responsible if a loss is incurred on the project.

This situation may, however, be changed by investing an additional $4 million (which is available) to change the power source to an alternative sustainable fuel source OR to shift production offshore for lower labor costs and a reduction in the corporate taxes that the firm will be liable for. Both options have the same level of financial risk attached to them.

Therefore, your two available options regarding Project X2 are:
Option A: Invest an additional $4 million into Project X2. The money would be used to manufacture the X2 offshore using fossil fuels as a power source, but it will undercut the competitor because it will be made with low labor costs and in a low-taxed country. One potential risk is that Ace's reputation (and profits) may suffer if it is exposed as a tax-avoiding firm.

Option B: Invest an additional $4 million into Project X2. The money would be used to convert the power source into alternative sustainable fuel source. Although the competitor's oil-powered product would still outperform the X2, you believe that with a tax credit offered to buyers, there will still be a market for a "green X2". One potential risk is that Ace's reputation (and profits) may suffer if consumers do not opt for the "green X2".

Decision: Make a mark "X" at the appropriate place on the line below to indicate your preference for Option A or Option B.

|.....|.....|.....|.....|.....|.....|

Definitely Prefer A — Definitely Prefer B

Please briefly describe your reasoning for your decision below (i.e. tax break, CSR, company reputation, prior experience, etc.):

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