THE EFFECTS OF PRIOR INVOLVEMENT AND ACCOUNTABILITY ON ASSET IMPAIRMENT DECISIONS

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ABSTRACT: *This study examines whether long-lived asset impairment decisions are biased when the decision maker was also involved in the original decision to invest in the asset. In addition, the study tests whether accountability for impairment decisions attenuates bias in the judgments made by individuals who were involved in the investment decision. The theoretical bases for the study's research question and hypothesis come from the accountability and escalation of commitment literatures as well as a psychological theory previously untested in the accounting domain, the Catastrophe Theory of Attitudes (CTA). The study's findings suggest that CTA may have potential to explain certain behaviors of accountants. Furthermore, accountability appears to mitigate bias stemming from prior involvement in the investment decision.*

INTRODUCTION

This study examines (1) whether long-lived asset impairment decisions are affected by decision-maker's involvement in the decision to invest in the asset and (2) whether accountability for the asset impairment decision mitigates biases in the decision-maker's judgment resulting from that prior involvement. The motivation for the study stems from the decision-making process required by Statement of Financial Accounting Standards (SFAS) No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets* (Financial Accounting Standards Board, 2001). The decision-making process begins with the accountant scanning the environment for indicators of asset impairments. If the accountant determines that an indicator is present, the accountant performs a recoverability test, which involves forecasting future net cash flows from the asset, to determine if the asset is impaired. If the test shows that the asset is impaired, the accountant writes down the asset to its fair value. Throughout this process, the accountant must exercise significant professional judgment. As a result, the accountant's asset impairment decisions may be affected by the accountant's biases. This study looks at one source of bias suggested in the escalation of commitment literature: involvement in the original decision to invest in the asset.

The escalation of commitment literature demonstrates that when an accountant is responsible for an investment decision, subsequent judgments made by the accountant concerning the asset may be affected. For example, the accountant will increase his or her commitment to a failing investment when given the chance (see, for example, Schulz and Cheng, 2002). Similarly, an accountant's asset impairment judgments may be affected when he or she is involved in the investment decision.

The accountability literature suggests that, under certain conditions, accountability may attenuate bias (Lerner and Tetlock, 1999). If an asset impairment decision has a material impact on the financial statements, an accountant's decision that an asset is (is not) impaired likely will be questioned by an external auditor. The accountant must justify the decision, which is one form of accountability pressure (DeZoort, Harrison, & Taylor, 2006). This study considers whether justifying asset impairment decisions mitigates biases resulting from involvement in the investment decision.
This study uses an experiment to examine the effects of involvement and accountability on long-lived

asset impairment decisions. Participants in the experiment were asked to make a series of asset impairment decisions relating to an investment in an entertainment complex. The experiment uses a case setting to provide participants with information about the complex over a five-year period. The participants assessed the probability that the assets of the entertainment complex were impaired at the end of each year in the five-year period.

The results of the study suggest that accountability attenuated biases resulting from prior involvement in the investment decision. In addition, the decisions made by participants in the involvement condition follow a pattern that is consistent with a psychological model of attitude formation and change: the Catastrophe Theory of Attitudes (Latane & Nowak, 1994). As a result, the study helps to link the escalation of commitment literature with a psychological theory which, up to now, has not been applied in an accounting domain.

The remainder of the paper is organized as follows. The next section provides a brief summary of SFAS No. 144. The third section provides a review of the relevant literature and develops the research question and the hypothesis examined in this study. The fourth section explains the experiment and is followed by a section presenting the results of the statistical analyses. The final section provides discussion and conclusions.

A BRIEF SUMMARY OF SFAS NO. 144

SFAS Statement of Financial Accounting Standards No. 144 requires a three-step recognition and measurement process for potential asset impairments. In the first step, accountants review an entity's operations and scan the environment to determine if any indicators of potential asset impairments exist. SFAS No. 144 provides examples of impairment indicators (see Table 1); however, the Financial Accounting Standards Board (FASB) did not intend for the list of impairment indicators to be exhaustive.

TABLE 1
Example Asset Impairment Indicators
Statement of Financial Accounting Standards No. 144 (FASB, 2001)

a	A significant decrease in the market price of a long-lived asset (asset group)
b	A significant adverse change in the extent or manner in which a long-lived asset (asset group) is being used or in its physical condition
c	A significant adverse change in legal factors or in the business climate that could affect the value of a long-lived asset (asset group), including an adverse action or assessment by a regulator
d	An accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset (asset group)
e	A current-period operating or cash flow loss combined with a history of operating or cash flow losses or a projection or forecast that demonstrates continuing losses associated with the use of a long-lived asset (asset group)
f	A current expectation that, *more likely than not,* a long-lived asset (asset group) will be sold or otherwise disposed of significantly before the end of its previously estimated useful life.

Identifying the presence of impairment indicators is critical to the recognition of asset impairments. Unless the accountant determines that an indicator is present, no further action will be taken. To complicate matters, some impairment indicators may be unfamiliar to the accountant because they are non-financial in nature and may come from sources external to the accounting organization. As a result, this step relies heavily on the judgment of the accountant, which may be biased. This study focuses on this step in the decision-making process.

The remaining two steps of the asset impairment process are as follows. If the accountant determines that one or more impairment indicators are present, the accountant then conducts a recoverability test. This test involves forecasting the future net cash flows expected to be generated by the asset and comparing the sum of the undiscounted future cash flows with the carrying amount of the asset. If the undiscounted future cash flows will not recover the carrying amount of the asset, the asset is considered to be impaired. The final step in the process is to measure the amount of the impairment loss and reduce the carrying amount of the asset to its fair value. Like the first step in the process, each of these steps relies heavily on the potentially biased judgment of the accountant.

LITERATURE REVIEW AND DEVELOPMENT OF RESEARCH QUESTION AND HYPOTHESIS

The idea that prior involvement in an investment decision could affect subsequent judgments made by a decision maker was explored by Brown and Solomon (1987). In a study examining the effects of outcome information on evaluations of managerial decisions (specifically, a decision made by a capital budgeting committee), Brown and Solomon found that evaluations made by subjects who had prior involvement in the committee's decision process did not reflect the outcome information. For subjects who were not involved in the committee's decision, outcome information affected the evaluation of the decision.

Jeffrey (1992) examined the effect on auditors' loan evaluation judgments of personal involvement in sequential audits. The study provided evidence that involvement in a previous evaluation of a loan affects subsequent evaluations of the same loan when those evaluations are made by inexperienced auditors. Using the escalation of commitment literature as a theoretical basis, Jeffrey observed that "previous involvement in the loan evaluation process may induce a tendency to make subsequent decisions conform to a prior evaluation" (p. 805).

In a recent study of personal responsibility and escalation of commitment, Schulz and Cheng (2002) find a significant positive relationship between high personal involvement and escalation of commitment to a project, even in the face of negative project information. In this capital budgeting context, Schulz and Cheng also find that reducing information asymmetry does not work as a de-escalation strategy.

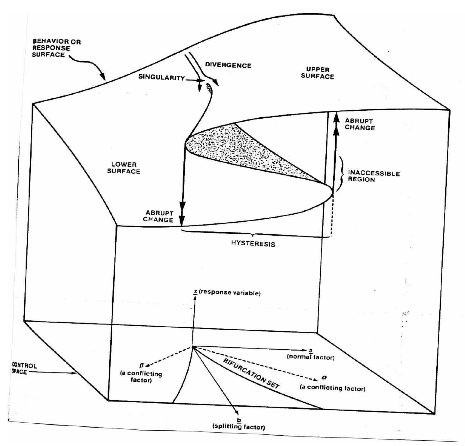
Staw (1976) presented evidence of the escalation of commitment phenomenon in an investment decision context. In the study, subjects who were responsible for a prior investment decision that had produced negative consequences increased their level of commitment to that failing course of action when given the opportunity. However, this escalating commitment to a previously chosen course of action did not occur for actions that had produced positive consequences. Staw concluded that subjects were not merely trying to remain consistent in their choices of action. Using research on self-justification as a basis, Staw argued that individuals take concrete actions to reduce negative consequences for which they are responsible in the hope of restoring an appearance of rationality to the previous choice of action.

While the escalation of commitment phenomenon has been documented in many studies (see Staw & Ross 1987 for a review), Brockner (1992) notes that there is much theoretical controversy over the explanation of escalation. Brockner argues that self-justification theory provides an important, but only partial explanation of the escalation behavior. He notes that to explain escalation more completely, other theoretical perspectives (e.g., expectancy theory and prospect theory) must be considered.

One theory which may offer insight into behaviors such as escalation of commitment is catastrophe theory. Catastrophe theory helps explain why smooth or continuous changes in inputs to a system can result in discontinuous responses by the system (Zeeman, 1977). For example, economic indicators may change in a smooth, somewhat linear manner over time, but stock market indices may exhibit sudden jumps or discontinuities in response to economic news. Catastrophe theory provides a basis for studying such occurrences because it helps model psychological and other phenomena where changes in system responses (e.g., behavior) are not linear in nature.

Flay (1978) proposed a series applications of catastrophe theory to attitudes and social behavior. Flay based many of the applications on one particular model of catastrophe, the cusp catastrophe, which is presented in Figure 1.

FIGURE 1: Cusp Catastrophe Model (Flay, 1978)



As explained by Flay, the model is a three-dimensional representation of how the behavior of a system can change. The top surface of the model (labeled the "Behavior or Response Surface") represents the system's response to changes in inputs known as normal factors. The back edge of the response surface is smooth and illustrates a continuous, linear change in behavior in response to changes in the normal factor. For example, as the normal factor changes (represented by movements to the left or right in the model), the behavior of the system changes in linear fashion (represented by movements up or down along the vertical axis). In contrast, the front edge of the surface has a fold or inaccessible region, which illustrates a discontinuous, abrupt change in behavior in response to smooth changes in the normal factor.

The factor which determines where on the response surface the system will operate is known as the splitting factor. Changes in the level of the splitting factor are represented by movements from the back of the model to the front and vice versa. Thus, as the level of the splitting factor increases (represented by movement toward the front of the model), the system's responses will become more abrupt and discontinuous.

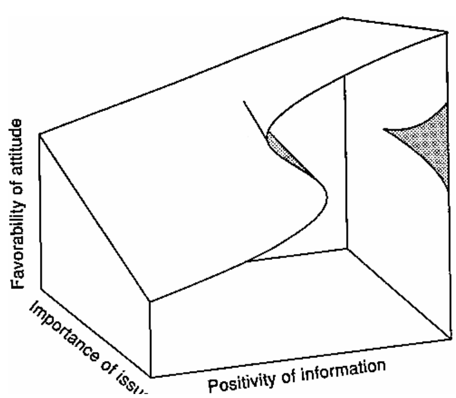
By incorporating normal factors and splitting factors, the cusp catastrophe model can be used to explain changes in attitudes and behavior that are primarily linear in nature as well as changes that exhibit varying degrees of hysteresis (i.e., stickiness). For example, a normal control variable for an investment behavior might be the favorability of information about the project or investment. As the information about the project becomes more unfavorable (e.g., negative consequences are being incurred), one would expect the commitment of resources to the project (i.e., the behavior) to decrease linearly in response to the greater unfavorability of the information. In this happens, changes in behavior are dependent on the magnitude of the normal factor, and those changes occur in a continuous fashion. However, observed behaviors do not always conform to this expectation.

According to the cusp catastrophe model, the reason why such changes in behavior are not always observed is that splitting factors can cause a bifurcation (or discontinuity) in behavior. An example of a splitting factor for an investment decision might be the degree of responsibility felt by the individual for any negative consequences resulting from past investment decisions (as in the escalation of commitment phenomenon). As the magnitude of the splitting factor increases (e.g., as the degree of personal responsibility increases), hystersis in the behavior results. This hystersis causes the individual to remain committed to the previously chosen course of action. Only when unfavorable information is consistently received and, therefore, becomes overwhelming, will the individual change his or her commitment to that action. Furthermore, when change does occur, the change may be catastrophic with a shift to a contrasting position. In terms of the model, the change occurs abruptly because hystersis creates a region of inaccessibility in the behavior. Thus, catastrophe theory would predict that, even in the face of negative consequences, an individual with a high degree of personal responsibility for the original investment will remain committed to the investment. In fact, the individual may remain very committed to the investment, even to the point of escalating that commitment.

Thus, catastrophe theory may provide an explanation for the divergent evaluations of managerial decisions in Brown and Solomon (1987) and the differences in loan evaluations in Jeffrey (1992). Zeeman (1977) first suggested that the strength of one's opinion on an issue would be controlled by a normal factor, bias, and by a splitting factor, involvement. Based on this suggestion, it is not surprising that differing levels of involvement were associated with differing evaluations in each of these studies.

Drawing on the Zeeman's suggestion as well as related work in the social sciences (e.g., Gottman, 1993; Tesser & Achee, 1994; Guastello, 1984; Sheridan, 1985; Sheridan & Ableson, 1983; Guastello, 1988; and Cobb, 1981), Latane and Nowak (1994) proposed the Catastrophe Theory of Attitudes (CTA). The CTA model is a version of the cusp catastrophe model previously described. The normal factor in the CTA model is the net positivity/negativity of the information one has about an issue, and the splitting factor is the importance of the issue to the person or the person's involvement with the issue (see Figure 2).

FIGURE 2: Catastrophe Theory of Attitudes Model (Latane & Novak, 1994)



The model works in the same manner as the cusp catastrophe model. If a person is not involved with an issue, changes in the person's attitude toward the issue can be modeled as shown in the back edge of the model. That is, the person's attitude will change in a linear fashion in response to changes in the net positivity/negativity of information the person has about the issue. As the person becomes more involved with the issue, changes in the person's attitude will begin to exhibit discontinuity. Furthermore, when the person has a very high degree of involvement in the issue, any change in the person's attitude about the issue will likely be catastrophic. For example, a person highly involved with the abortion issue may change abruptly from a pro-life to pro-choice position when the information supporting the pro-choice position becomes overwhelming. Referring to the model, Latane and Nowak state the following:

> With increasing involvement, a "cusp" develops such that even with information of intermediate positivity, people will tend to have either very positive or very negative attitudes. There is increasing commitment to one's position such that one resists change in response to new information, but at some point, consistently favorable or unfavorable new information will lead to a catastrophic change in attitude. (228)

Empirical support for the CTA can be found not only in Latane and Nowak (1994) but also in Harton (1998), Harton and Latane (1997), and Liu and Latane (1995). Furthermore, the theory has been shown to be consistent with the contentions of other psychological theories including cognitive dissonance theory (Festinger, 1957), information integration theory (Anderson, 1981), thought polarization (Tesser, 1976), and the elaboration-likelihood model (Petty and Cacioppo, 1986).

This study considers whether CTA is useful in explaining the behavior of subjects in this experiment. Specifically, this study examines the following research question:

> R1: Will individuals who provide investment recommendations exhibit hystersis in their subsequent assessments of the probability that an asset is impaired?

Given that a major decision, such as an asset impairment decision, would be reviewed by external auditors, the impact of justification (a form of accountability) on the asset impairment decision is also examined in this study.

In an extensive review of the accountability literature, Lerner and Tetlock (1999) conclude that accountability attenuates bias on tasks "to the extent that (a) suboptimal performance resulted from a lack of self-critical attention to the judgment process and (b) improvement required no special training in formal decision rules, only greater attention to the information provided" (263). Similarly, in a review of the accountability literature in auditing, Messier and Quilliam (1992) conclude that accountability tends to increase the auditor's level of cognitive processing.

Tetlock (1983a) concludes that individuals analyze evidence more carefully and pay particular attention to inconsistent information when faced with predecisional accountability. According to Tetlock and Boettger (1989), predecisional accountability can also reduce judgmental biases. For example, Tetlock (1983b) finds that accountability eliminated primacy effects in a legal decision-making task. Similarly, Kennedy (1993) concludes that accountability mitigates recency.

Drawing on the accountability literature, Favere-Marchesi and Pincus (2006) state, "accountability will motive decision makers to become more complex, nuanced, and differentiated thinkers as they anticipate objections and engage in pre-emptive self-criticism" (2). In a study of dilution effect in fraud-risk assessments, Favere-Marchesi and Pincus (2006) find that accountability decreases the occurrence rate of dilution effects.

Based on the accountability literature, this study tests the following hypothesis (stated in the alternative form):

> H1: Asking individuals to justify their impairment assessment will attenuate bias resulting from individual's prior involvement in the investment recommendation.

In other words, the hypothesis predicts an interaction between involvement and accountability.

METHODOLOGY

Participating in the experiment were 89 undergraduate and graduate students from a large southeastern university. The author acknowledges that the use of student subjects may limit the generalizability of the study's results. However, Brownell (1995) states that for student subjects to be a validation threat, students (1) must differ from the accountants for whom they serve as a surrogates and (2) any difference must interact with other variables to affect the outcome. In this study, any differences between the student subjects and accountants who typically make impairment decisions was minimized by ensuring that the students had the same knowledge of the SFAS No. 144 requirements as an accountant may have. In addition, the subjects in this study had an average of 4.9 years of experience working in accounting-related positions, which would also help to minimize differences.

Schulz and Cheng (2002) defend the use of student subjects in an escalation of commitment study by stating:

> We are unaware of any particular study that has directly compared escalation of commitment between students and managers. However, some studies have reported consistent findings between their pilot study (using students as surrogate managers) and their main study (using managers – e.g., Booth and Schulz, 1988). (77).

The experimental materials consisted of a case revolving around a large entertainment complex including a multiplex cinema, entertainment center, restaurants, and retail stores. The case provided information about the proposed investment in the entertainment complex and its subsequent performance over a 5-year period. The materials also included a summary of the requirements of Statement of Financial Accounting Standards No. 144, including the list of impairment indicators provided in SFAS 144.

The case was structured so that subjects would initially have a favorable impression of the entertainment complex project. Section 1 of the experimental instrument outlined the project as it would have looked prior to the decision to invest in the project. The information suggested a positive outlook for the project, and all subjects who were asked to make an investment decision recommended investing in the project.

Subsequent sections of the experimental instrument provided information about the status of the complex after one year, two years, three years, four years, and five years of operation. While a mix of positive and negative evidence was provided in each year's status report, the thrust of the evidence was to paint a deteriorating picture, particularly in Years 4 and 5.

Subjects were instructed to read the case, which presented a proposed investment in the entertainment complex. After completing their review of the proposed investment, subjects were asked to read the synopsis of the SFAS No. 144 requirements, which included the example indicators of asset impairment.

The subjects were told that they could refer back to the requirements at any point in the experiment. In the next section of the experimental materials, the subjects were given a summary of the project at the end of the first year of operations. The summary included mixed evidence concerning the potential impairment of the entertainment complex assets at that point in time. The subjects were instructed to consider the evidence and to estimate the probability that the assets were impaired at the end of Year 1. This procedure was then repeated for Years 2 through 5. Before each decision, the subjects were reminded that they could refer to the requirements of SFAS No. 144 when making their decisions.

The experiment was a mixed design that included two between-subjects factors (involvement and accountability) and one within-subjects factor (time).

The involvement variable consisted of two levels: no involvement in the prior investment decision and involvement in the investment decision. The involvement manipulation was modeled after the involvement manipulation in Brown and Solomon (1987) as well as the personal responsibility manipulations in Jeffrey (1992) and in escalation of commitment studies (e.g., Brody & Kaplan, 1996). These manipulations generally require subjects in the involvement or personal responsibility condition to make an initial decision as well as a second decision which all subjects make. The manipulation in this study required subjects in the involvement condition to prepare a recommendation to the capital budgeting committee immediately after reading the case materials describing the proposed investment in the complex. Subjects in the no involvement condition were not asked to advise the committee on the investment decision. The involvement manipulation in this study was intended to force subjects to make a commitment to the project prior to considering any information about asset impairment.

The accountability variable consists of two levels: accountability and no accountability for their decisions. The variable was operationalized by having subjects in the accountability condition justify their probability estimates. This type of manipulation is common in the accountability literature as noted by Arnold (1997).

Subjects were randomly assigned to one of four experimental groups: (1) a control group which did not make an investment recommendation nor provide justifications for the probability assessments, (2) an involvement group which make an investment recommendation prior to assessing the probability that the asset was impaired but did not justify their probability assessments, (3) an accountability group which justified (in writing) their probability assessments but did not make an investment recommendation, and (4) an involvement/accountability group which made an investment recommendation and justified (in writing) their probability assessments.

The dependent variable in the study is the estimated probability of asset impairment. The dependent variable is measured five times (i.e., once for each year of data); thus, the experimental design includes a within-subjects factor (i.e., time). The dependent variable is intended to capture the subjects' overall assessments of the potential asset impairment based on the mixed evidence provided. This variable is consistent with idea in SFAS No. 144 that assets need only be tested for impairment if there is sufficient reason to believe that an asset impairment is possible.

RESULTS

The first analysis tested whether there were any statistically significant differences across the experimental groups in the amount of time spent to complete the experiment. The mean completion times are reported in Table 1. An Analysis of Variance (ANOVA) procedure was performed with completion time as the dependent variable. The ANOVA revealed a main effect for the accountability treatment ($F = 298.084$, $p < .037$). This indicates that the subjects who were asked to justify their probability assessments spent significantly more time completing the experiment than those who did not justify their assessments. This is consistent with ideas expressed in the accountability literature that accountability causes individuals to think more critically and to engage in the more complex cognitive processing.

TABLE 2: Completion Times by Experimental Group, n = 89

Experimental Group	Time
Control (n = 22)	20.7273 minutes
Involvement (n = 20)	20.4000 minutes
Accountability (n = 26)	27.9615 minutes
Involvement / Accountability (n = 21)	28.5238 minutes

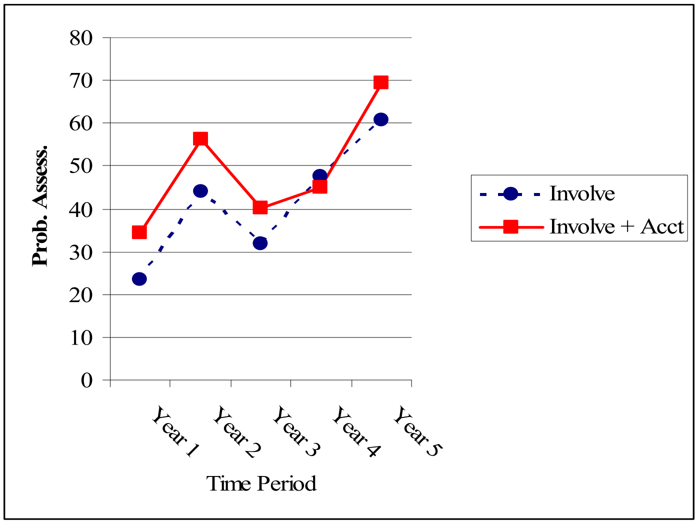
A repeated measures ANOVA procedure tested whether the accountability treatment interacted with involvement treatment as predicted in H1. The results of the ANOVA are reported in Table 3. The ANOVA procedure revealed a significant interaction between accountability and involvement at nearly the 5% level of significance ($p < .058$).

TABLE 2: Repeated Measures ANOVA Results
Effects of Involvement, Accountability, and Time on Probability Estimates

Between-subjects Effects					
Source	df	Sum of sq.	Mean Square	F	Pr > F
Involvement (I)	1	1019.176	1019.176	0.450	0.504
Accountability (A)	1	142.799	142.799	0.063	0.802
I * A	1	8387.167	8387.167	3.701	0.058
Residual error	85	192632.248	2266.262		
Within-subjects Effects					
Time (T)	4	56126.875	14031.719	54.451	0.000
T * I	4	1128.415	282.104	1.095	0.359
T * A	4	1010.137	252.534	0.980	0.418
T * I * A	4	802.244	200.561	0.778	0.540
Residual error	340	87615.557	257.693		

In addition, a review of mean probability estimates (see Figure 3) indicates that subjects who in the involvement/accountability group made more conservative probability judgments than the subjects in the involvement group. This suggests that accountability mitigated bias which the subjects may have developed when they recommended investing in the entertainment complex. When the involved subjects had to justify their probability assessments, they estimated higher probabilities that the entertainment complex assets were impaired.

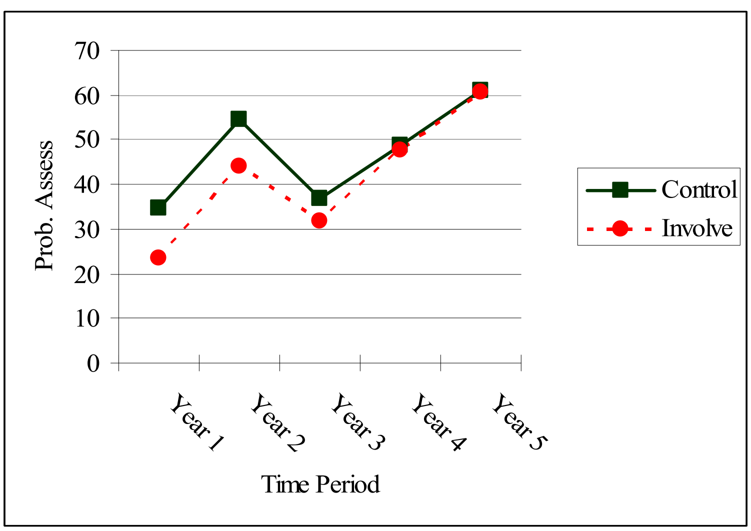
FIGURE 3: Probability Assessment Means
Effect of Accountability on Involvement



The repeated measures ANOVA procedure also revealed that the probability assessments were significantly different across the 5-year period (see Table 3). While this was of no direct interest to the study, the finding indicates that the positive and negative evidence provided in the case elicited differing probability assessments for each year as intended in the case design.

Comparing the probability assessments for the involved group with those of the control group (see Figure 4) reveals that the probability assessments of the involved subjects were lower than those of the control group subjects for Years 1 – 3. However, the assessments converged for Years 4 – 5. This indicates that the probability assessments of the involved group subjects reflected some hystersis or stickiness in comparison to the assessments made by the control group subjects.

FIGURE 4: Probability Assessment Means
Effect of Involvement



DISCUSSION AND CONCLUSIONS

The results provide some evidence of the applicability of the Catastrophe Theory of Attitudes (CTA) in the accounting domain. The comparison of the probability estimates of the involvement group subjects with those of the control group subjects (see Figure 4) reveals some characteristics predicted by the CTA. In the CTA model, the attitudes of the subjects who are not involved in an issue will change in a linear fashion with changes in the positivity of information (i.e., the magnitude of the normal factor). As individuals become more involved, the pattern changes and becomes discontinuous, perhaps even catastrophic. In Figure 4, the means for both groups of subjects appear to be changing in relation to the degree of positivity of asset impairment evidence. However, the involved subjects were slower than the control group subjects to incorporate the negative news into their probability assessments. This is consistent with CTA's hystersis prediction.

While the behavior exhibited by the involved subjects did not reflect a truly catastrophic change (as the CTA would predict for highly involved subjects), it does give some indication that involved subjects were reacting differently to the asset impairment evidence than the control group subjects. One reason why the differences are not dramatic may be that the involvement manipulation was not strong enough. In the context of the CTA model, the involvement manipulation may have only moved subjects a little to the front of the model on the involvement dimension (i.e., the splitting factor) and, thus, created only small differences in the way subjects responded. Small differences in responses would be consistent with the CTA model because the discontinuous change in the attitude only develops as the level of involvement becomes high.

The finding that accountability mitigates involvement is consistent with prior studies showing that accountability reduces judgment biases. In every year except Year 4, involved subjects who had to justify their probability assessments estimated higher probabilities that the entertainment complex assets were impaired than the involved subjects who did not justify their assessments. Thus, accountability appears to attenuate the effects of the prior involvement in the asset investment decision. This finding is important because the CTA predicts a primacy effect. According to the CTA, a person who is highly involved with an attitude object will be resistant to new information that is inconsistent with the attitude he or she holds (i.e., will exhibit a primacy effect). Holding the person accountable for his or her judgment may eliminate that primacy effect.

An important conclusion from this study is that the Catastrophe Theory of Attitudes (CTA) may have applicability in the accounting domain. While this study does not provide strong support for the CTA, it does provide some evidence that would justify future research in this stream using practitioners as participants in an experiment. Whether the theory can explain changes in the judgments of practitioners remains to be seen. There is potential, however, that the CTA can be helpful in explaining behaviors typically associated with the escalation of commitment.

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