

**Concede or Deny: Do Management Persuasion Tactics Affect Auditor Evaluation of Internal Control Deviations?**

Christopher J. Wolfe  
Mays Business School  
Texas A&M University  
4353 TAMU  
College Station, TX 77843-4353  
(979) 845-0964  
Email: [cwolfe@mays.tamu.edu](mailto:cwolfe@mays.tamu.edu)

Elaine G. Mauldin  
Trulaske College of Business  
331 Cornell Hall  
University of Missouri  
Columbia, MO 65211  
(573) 884-0933  
Email: [mauldin@missouri.edu](mailto:mauldin@missouri.edu)

Michelle Chandler Diaz  
Mays Business School  
Texas A&M University  
4353 TAMU  
College Station, TX 77843-4353  
(979) 845-5014  
Email: [mdiaz@mays.tamu.edu](mailto:mdiaz@mays.tamu.edu)

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## **Concede or Deny: Do Management Persuasion Tactics Affect Auditor Evaluation of Internal Control Deviations?**

**Abstract:** In an internal control audit, the consequences and assessment subjectivity of control problems motivate managers to try to persuade auditors to lower the assessed severity of an observed control deviation. We report an experiment in which 106 audit seniors evaluate either information technology (IT) or manual control deviations that are potentially indicative of significant deficiencies, after exposure to persuasion tactics based in either concession or denial. For IT control deviations, we find that auditors assess the significance of deficiency lower and the perceived adequacy of management's explanation higher for concessions than for denials. For manual control deviations, we find no differences between concessions and denials. Our results provide evidence of a systematic bias in auditor judgment and indicate a rationale for the ubiquity of management persuasion attempts around control deviations – sometimes they work.

**Key Words:** internal control deficiency, audit judgment, persuasion tactic.

**Data Availability:** Contact the authors.

# Concede or Deny: Do Management Persuasion Tactics Affect Auditor Evaluation of Internal Control Deviations?

## I. INTRODUCTION

We study when and how management persuasion tactics lower auditor assessment of a potential significant deficiency arising from an internal control deviation. A control deviation is a breakdown in internal control that is evidence of a control deficiency. Deviations assessed as significant deficiencies must be reported to the audit committee, can accumulate to a material weakness resulting in an adverse Sarbanes Oxley 404 (SOX) audit opinion, and demand remediation (PCAOB 2007, ¶ 65, ¶ 75, ¶ 80). As a result, managers have incentives to persuade auditors that an observed control deviation is not a significant deficiency. Professional skepticism, however, requires auditors to ignore management's persuasion tactics (PCAOB 2007, ¶ 4). In an internal control audit, assessing the significance of a deficiency that arises from a control deviation is complex and subjective, which creates the potential for management persuasion tactics to inappropriately influence auditor judgment.

We study two types of persuasion tactics: *concessions* that admit a control deficiency occurred and *denials* that argue against the presence of a control deficiency. We also study two types of control deviations: *IT* and *manual*. We theorize that concessions, but not denials, become effective persuasion tactics when perceived management blame for a control deviation is reduced. We further theorize that the technology element present in an IT control deviation will reduce perceived management blame for the deviation, even though the technology element is irrelevant to assessing the significance of deficiency. Combining theoretical expectations, we predict that within IT control deviations, concessions will lower auditor assessed significance of

deficiency more than denials. We predict no difference in auditor assessed significance of deficiency between concessions and denials for manual control deviations.

Research in psychology indicates that the effectiveness of concession and denial is determined by their net cost or benefit (Kim et al. 2004; Tata 2002). Concession is costly because admission of guilt for a control deviation results in the assignment of management blame. Management blame implies that management could have done more to prevent the control deviation. The benefit of concession is the positive signal that management accepts responsibility for internal control. Information that reduces perceived management blame reduces the cost of concession. This changes the net cost-benefit of concession and can make concession an effective persuasion tactic.

Denial is costly because it sends a negative signal that management fails to accept responsibility for a breach in internal control. This negative signal is costly because it implies that management is abdicating its fundamental responsibility for compliance with SOX (PCAOB 2007, ¶ 75). The benefit of denial is achieving a disassociation between a control deviation and a control deficiency. However, given management's self-serving incentives to avoid reporting a deficiency, denial lacks credibility if, prior to the denial, auditors have already observed a control deviation that indicates a deficiency. Further, information that reduces perceived management blame cannot completely undo the evidence-based association between an observed control deviation and a control deficiency. In this setting, we expect the cost of denial to exceed its benefit regardless of the presence or absence of information that reduces management blame.

Control deviations can occur due to breakdowns in IT or manual controls. In IT control deviations, the technology element is irrelevant because only the manual/human element of an IT control can fail when the control is properly designed and protected from change. However, the

human-computer interaction literature indicates that the presence of technology reduces human blame regardless of the relevance of technology to a failure event (Kelton et al. 2008; Naquin and Kurtzberg 2004; Nissenbaum 1994). Since explanations of IT control deviations necessarily contain information about technology, we expect perceived management blame will be reduced. In contrast, explanations of manual control deviations normally do not contain information that reduces perceived management blame. In the absence of such information, human failure stands alone and management is held more accountable (Morris et al. 1999; Naquin and Kurtzberg 2004).

We posit that explanations of IT control deviations will result in reduced management blame that will make concession, but not denial, an effective persuasion tactic. Therefore, we predict that concession will lower auditor assessed significance of deficiency more than denial for IT control deviations. In contrast, we do not expect explanations of manual control deviations to contain information that mitigates management blame. Therefore, we predict no difference in auditor assessed significance of deficiency between concession and denial for manual control deviations.

In an experiment, 106 audit seniors from a Big 4 public accounting firm evaluated internal control deviations that were potentially indicative of significant deficiencies. The deviations were embedded in case studies that included a vignette conversation between the audit senior and management. We manipulated, between auditors, the type of persuasion tactic, concession or denial, and the type of control deviation, IT or manual.<sup>1</sup> As predicted, auditors assess the significance of deficiency arising from IT control deviations lower for concession than for denial. Also as predicted, auditors assess the significance of deficiency arising from manual control deviations no differently for concession and denial. We also examine how auditors

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<sup>1</sup> Following AS No. 5, all control deviations had a direct effect on the financial statements.

perceive the adequacy of management's explanation. As expected, auditors perceive the adequacy of management's explanation higher for concession than for denial when evaluating IT control deviations. Conversely, auditors perceive the adequacy of management's explanation no differently for concession and denial when evaluating manual control deviations.

In supplemental tests, we find that auditors blame management less for IT than for manual control deviations. Consistent with theory, we find evidence that lower management blame results in lower assessed significance of deficiency for concession, but not for denial. Finally, we find evidence that explanation adequacy is negatively related to the assessed significance of deficiency for both IT and manual control deviations. Further, explanation adequacy fully mediates the effects of persuasion tactics on the assessed significance of deficiency.

Our findings contribute to practice. Auditing Standard (AS) No. 5 requires auditors to exercise professional skepticism and form an independent opinion when assessing control deficiencies (PCAOB 2007, ¶ 4, ¶ 85). We observe a lack of skepticism in auditor judgment when management persuasion tactics lower the assessed severity of a potential significant deficiency. This is important because prior research reports that auditors frequently encounter significant deficiencies and 20 percent of significant deficiencies are associated with financial misstatement (Bedard and Graham 2008). Further, lowering the assessed severity to less than a significant deficiency eliminates the need to inform the audit committee of the deficiency, changes the auditor's deficiency accumulation analyses, and obviates the timely remediation of the deficiency (PCAOB 2007, ¶ 65, ¶ 75, ¶ 80).

Our findings also contribute to the accounting literature. Auditor negotiations with management over subjective issues are pervasive (Trotman et al. 2005) and irrelevant information is routinely present in the audit (Hackenbrack 1992). We extend the audit

explanation literature by demonstrating how management persuasion tactics can interact with irrelevant information. In addition, we show that the perceived adequacy of management's explanation has a strong effect on related auditor judgments, an effect not acknowledged in auditing standards. Finally, we extend prior research on internal control evaluation as part of the financial statement audit to that of a SOX 404 internal control audit.

The next section provides background and develops hypotheses. Section III describes the experiment and Section IV presents results. Section V concludes with a discussion of the study's implications and limitations.

## **II. BACKGROUND AND HYPOTHESES**

AS No. 5 delineates standards for the audit of internal control and requires two types of tests of control: design effectiveness and operating effectiveness (PCAOB 2007, ¶ 42-45). Tests of design effectiveness determine if controls could effectively prevent or detect errors. Tests of operating effectiveness indicate whether the controls actually work and follow tests of design effectiveness because only properly designed controls need be tested to assure proper operation. We focus on auditor evaluation of control deviations in tests of operating effectiveness.

Auditors are required to evaluate all observed control deviations to determine whether they indicate deficiencies in internal control (PCAOB 2007, ¶ 48). If a control deviation is deemed a deficiency, then the auditor must assess the severity of the deficiency (PCAOB 2007, ¶ 62). The severity of a deficiency depends on the possibility that management's controls will fail to prevent or detect an error and the magnitude of the potential error (PCAOB 2007, ¶ 63). The highest severity level is material weakness which directly results in an adverse opinion on internal control. Deficiencies that are less severe but important enough to merit attention by management are classified as significant deficiencies (PCAOB 2007, ¶ A11).

We focus on significant deficiencies because they are important in their own right and are more common than material weaknesses. Auditors must report all significant deficiencies to the audit committee and management must provide written representation that they have remediated previously identified significant deficiencies (PCAOB 2007, ¶ 75, ¶ 80). In addition, significant deficiencies can lead to a material weakness when accumulated with other deficiencies or when uncorrected after a reasonable period of time (PCAOB 2007, ¶ 62, ¶ 65). Finally, auditors often encounter significant deficiencies and these deficiencies have serious implications for financial reporting. In a study of 3,990 control deficiencies, Bedard and Graham (2008) report that 461 (11.6 percent) are classified as significant deficiencies, three times more than material weaknesses, and 20 percent of significant deficiencies are directly associated with financial misstatement.<sup>2</sup>

Auditors commonly use management inquiry when assessing the significance of a deficiency because management is responsible for internal control and management makes its own assessment of the effectiveness of internal control (PCAOB 2007, ¶ 75). When management initially discovers and assesses control deficiencies, Bedard and Graham (2008) report that they under-assess 64.8 percent of the deficiencies that become auditor-assessed significant deficiencies, which is consistent with a management motivation to avoid significant deficiencies. Differences between management and auditor deficiency assessments generate a new source of auditor-manager tension. Prior to SOX, auditors evaluated internal control to plan financial statement audit procedures and could usually audit around deficiencies by increasing the scope

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<sup>2</sup> We were also motivated to study significant deficiencies for theoretical reasons. Psychology research indicates that persuasion tactics are more likely to affect judgment when targeted at failure events that are not highly severe, because highly severe failure events polarize judgment (Shapiro et al. 1994). Theoretically, auditors are less likely to be influenced by persuasion tactics when they are targeted at a single severe deviation indicative of a potential material weakness. While significant deficiencies are important, they are less severe than material weaknesses; therefore we expect auditors are more likely to be influenced by persuasion tactics targeted at a deviation indicative of a potential significant deficiency.

of substantive tests (Ashton 1974; Libby et al. 1985). Now, auditors must perform an audit of internal control, directed by professional guidance that carries specific reporting consequences and remediation duties (PCAOB 2007). As a result, managers have incentives to try to persuade auditors that observed control deviations are not significant deficiencies.

Professional guidance requires auditors to use professional skepticism when performing management inquiry and to ultimately form their own, independent assessment (PCAOB 2007, ¶ 4). Consequently, auditors must separate management persuasion tactics from factual information when assessing the significance of a deficiency. However, assessing the significance of a deficiency is complex and subjective, which creates the potential for persuasion tactics to influence auditor judgment (Boury and Spruce 2005; Heuberger and Nepf 2005). We study two types of management persuasion tactics, concessions and denials, because they are at opposing ends of the theoretical spectrum of persuasion tactics and anecdotal evidence indicates that both tactics are used.<sup>3</sup>

### **Concessions and Denials**

A concession (denial) is the acceptance (rejection) of culpability for a failure event (Tata 2002). The psychology literature on persuasion tactics indicates that concession and denial produce different costs and benefits (Kim et al. 2004, 2006). The cost of concession is the blame that results from admitting guilt for a failure event. The benefit of concession is signaling acceptance of responsibility for a failure event, implying intention to avoid future failures (Bottom et al. 2002; Kim et al. 2004; Ohbuchi et al. 1989; Schwartz et al. 1978). Conversely, the

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<sup>3</sup> An informal poll of auditors indicates that it is common for clients to take self-serving views of deviations and attempt to persuade the auditor, either by conceding a low severity deficiency or completely denying the deficiency assessment. Because a group of lower-level deficiencies can sum to a higher-level internal control deficiency (PCAOB 2007), the auditors we polled indicate that manager concern is not strongly limited by a materiality threshold, and managers tend to challenge all deficiency assessments.

cost of denial is the failure to accept responsibility, which suggests no need to rectify behavior. Thus, denial raises concerns about future actions to the extent that there are lingering concerns about culpability. The benefit of denial is potential disassociation from a failure event (Kim et al. 2004). Following this reasoning, we begin by considering the relevant cost and benefit of conceding or denying that a control deviation is a deficiency.

The cost of an internal control concession stems from the admission that a deviation is an internal control breakdown. By admitting that internal control failed, management accepts blame for the failure because management is responsible for internal control (PCAOB 2007, ¶ 75). Management blame for a control deviation is costly because it implies that a control deviation could have been prevented, confirming and strengthening evidence of a control deficiency (PCAOB 2007, ¶ 48, ¶ 75). With respect to benefits, concession sends a positive signal that management appropriately accepts responsibility for internal control. On its own, we expect the cost of concession to outweigh its benefit. The cost of concession, accepting blame for a control deviation, directly addresses evidence of a control deficiency, but the benefit does not, because accepting responsibility for a control deviation is tangential to assessing the significance of a deficiency. In the absence of information that changes this cost-benefit tradeoff, we expect the cost of concession to outweigh its benefit, making concession an ineffective persuasion tactic.

We posit that irrelevant, non-diagnostic information combined with a concession can dilute the cost of accepting blame and change the effect of a concession to a net benefit. A dilution effect can occur in the presence of non-diagnostic information, defined as information that has little or no value for predicting an outcome (Nisbett et al. 1981; Hackenbrack 1992). Dilution effects are explained by the representativeness heuristic (Tversky and Kahneman 1974). Non-diagnostic information that implies less management fault for a control deviation can dilute the

amount of blame assigned to management for a control deviation (Nisbett et al. 1981). Because management blame is the reason the cost of concession is high, diluting perceived management blame directly reduces this cost. At the same time, the benefit of accepting responsibility remains intact. Reducing the cost of concession while leaving its benefit intact can make concession an effective persuasion tactic for reducing the assessed significance of a deficiency.

The cost of denial is the negative signal that management fails to accept responsibility. This signal is a “red flag” to auditors because it violates a core requirement underlying the audit of internal control per AS No. 5 (PCAOB 2007, ¶ 75). Conversely, the benefit of denial is the possibility that the auditor will disassociate a control deviation from a deficiency. However, unlike social or political settings in which evidence is based on hearsay when a denial is made (Kim et al. 2004), auditors possess evidence of a control deviation indicative of a control deficiency prior to management’s denial. Given management incentives to avoid reporting a deficiency, a spoken denial can lack credibility and fail to reverse the evidence of an observed control deviation.<sup>4</sup> We do not expect denial to obtain the benefit of disassociation. As a result, we expect the cost of denial to outweigh its benefit, making denial an ineffective persuasion tactic.

Combining non-diagnostic information that dilutes management blame with a denial is unlikely to make denial effective. The cost and benefit of denial rely on auditor perception of whether or not a deficiency occurred. Non-diagnostic information that dilutes management blame cannot completely reverse the diagnostic evidence of an observed control deviation. That is, dilution effects of non-diagnostic information can weaken judgments made from diagnostic information, but non-diagnostic information cannot completely undo diagnostic outcome information (Nisbett et al. 1981). Thus, the benefit of disassociating a deviation from a

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<sup>4</sup> Prior research finds that auditors discount explanations that are congruent with management incentives because they are suspicious that the manager is more likely to provide self-serving information that does not reflect their true beliefs about the underlying facts (Anderson et al. 2004; King 2002; Hirst 1994).

deficiency is not attained. Moreover, the “red flag” violation of professional standards continues. We therefore expect that denial is an ineffective persuasion tactic regardless of the presence or absence of non-diagnostic information that dilutes management blame.

### **Non-Diagnostic Information and Control Deviations**

Control deviations can occur for IT controls or manual controls. Further, the human-computer interaction literature indicates that (1) the technology element associated with IT controls provides non-diagnostic information that will dilute perceived management blame for control deviations; and (2) auditors will not ignore this non-diagnostic technology information. Following theory on persuasion tactics, we expect that non-diagnostic technology information will dilute perceived management blame and make concession, but not denial, an effective persuasion tactic.

An IT control deviation contains both technological and human elements, whereas a manual control deviation contains only human elements (AICPA 2006).<sup>5</sup> The technological element of an IT control is highly reliable when properly designed, implemented, and protected from improper change (Jackson 2007). It is the human element of properly designed and implemented IT controls that can fail and create deviations (Jackson 2007; Gansler and Lucyshyn 2005). Therefore, the technology element in an IT control deviation can become irrelevant, non-diagnostic information when the root cause of the deviation is failure of the human element.

We predict that the irrelevant, non-diagnostic technology element in an IT control deviation explanation will dilute perceived management blame. Our expectation is based on psychological responses to technology. The human-computer interaction literature indicates that people behave

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<sup>5</sup> For example, IT security controls include programmed access controls (technological) and employee choice and protection of passwords (manual).

as if computers warrant human treatment and are able to participate in social interaction, including the assignment of blame (Kelton et al. 2008; Sundar and Nass 2000). Nissenbaum (1994) concludes that when technology is involved in a failure event, human failure is underestimated.<sup>6</sup> Further, research indicates that organizations are held less accountable for technology failure because technology failure is considered less discretionary than human failure (Naquin and Kurtzberg 2004; Gansler and Lucyshyn 2005). Based on psychological response to human-computer interaction, we expect that the technology element of an IT control deviation will dilute perceived management blame.

In sum, we expect that an IT control deviation explanation provides non-diagnostic information that dilutes perceived management blame, reducing the cost of concession, and making concession a relatively effective persuasion tactic. Concession is not expected to be an effective persuasion tactic for manual control deviations because non-diagnostic information that dilutes management blame is absent and human failure stands alone as manual control deviations rest solely with management. With respect to denial, we expect that non-diagnostic information is not powerful enough to reverse the evidence of an observed control deviation or undo the signal of violating AS No. 5 requirements. Therefore, denial is not expected to be an effective persuasion tactic for either IT or manual control deviations. Accordingly, we hypothesize:

H1: In the presence of IT control deviations, auditors assess the significance of deficiency lower when management uses concessions rather than denials, but in the presence of manual control deviations, auditors assess the significance of deficiency no differently when management uses concessions or denials.

To provide further evidence on the underlying judgment process, we also examine auditor judgment of management's explanation adequacy. Prior research finds that an explanation's

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<sup>6</sup> While it appears inappropriate for people to relate socially to inanimate computer technology (Kelton et al. 2008; Nissenbaum 1994), research supports a social relationship between humans and computers whereby humans attribute to computers (and not to other inanimate objects) an array of mental properties, such as intention and preference, which result in assignment of blame (Kelton et al. 2008; Sundar and Nass 2000; Nissenbaum 1994).

perceived adequacy, as opposed to the explanation's claim in and of itself, is the primary factor that influences judgment (Bies et al. 1988; Shapiro et al. 1994; Hareli 2005). Therefore, persuasion tactics must first increase explanation adequacy before they can effectively change subsequent judgments (Bies and Shapiro 1987; Barton and Mercer 2005). We expect that the costs and benefits of concessions and denials, as well as the relative dilution effects of non-diagnostic information, will follow the above discussion for explanation adequacy. Accordingly, we test the following second hypothesis:

H2: In the presence of IT control deviations, auditors perceive the adequacy of explanation higher when management uses concessions rather than denials, but in the presence of manual control deviations, auditors perceive the adequacy of explanation no differently when management uses concessions or denials.

### **III. RESEARCH METHOD AND PARTICIPANTS**

#### **Experimental Task and Materials**

We conducted an experiment in which audit seniors read a case and then evaluated two internal control deviations. Materials consisted of background information about a manufacturing company, summary financial statements, a narrative description of the revenue transaction processing cycle, information concerning auditor identified control deviations, and a conversational vignette between an auditor and a client manager. Auditors assessed the severity of deficiency for potential significant deficiencies arising from control deviations. All deviations were designed such that they could have potentially contributed to a more than inconsequential misstatement of the financial statements and the root cause was employee failure to follow procedures.

In the IT control deviation treatment, one deviation involved a password policy violation resulting in placement of false sales orders from a stolen laptop (IT-1). The other involved a

system breach in which an employee wrongly provided access to an intruder who stole customer procurement card information (IT-2). In the manual control deviation treatment, one deviation involved inappropriate credit-approval overrides (Manual-1) and the other involved unrecorded discounts on sales (Manual-2). Two forms of deviation were used in each treatment to guard against idiosyncrasies in a particular form of control deviation.

The conversational vignette in each experimental treatment took place between the audit senior and the client's controller. In the vignette, the controller explained the control deviations. In the concession (denial) treatment, the controller concedes (denies) that there was an operating effectiveness breakdown with respect to each control deviation. Importantly, in neither the concession nor the denial treatment did the controller offer to make any changes to internal control procedures, and in each treatment, the controller indicated that management is very concerned with maintaining strong internal control and that "nothing has occurred that caused a material misstatement of profits." See the Appendix for an excerpt of the experimental materials.

We randomly assigned participants to either the IT or manual control deviation treatment and to either the concession or denial treatment. Within treatments, we counterbalanced the order of the two cases. Experimental administrators read a script introducing the experiment and distributed envelopes containing an information sheet, general instructions, background questions, and experimental task materials. Administrators monitored completion of the task and collected the instruments. The experiment took about one hour to complete.

## **Variables**

The manipulated independent factors are coded dichotomously as: type of persuasion tactic (concession or denial), type of control deviation (IT or manual), and control deviation case (first or second). All other variables were measured on 11-point scales. Dependent variables are the

assessed significance of deficiency, anchored on “no deficiency” and “significant deficiency,” and the perceived explanation adequacy, anchored on “not adequate” and “very adequate.” To test our underlying theory, we also captured the blame auditors assigned to management for each control deviation, anchored on “no blame” and “all blame.” Control variables for each internal control deviation follow professional guidance in AS No. 5 regarding the assessment of control deficiency. We captured perceptions of the likelihood of misstatement, anchored on “remote” and “probable,” potential magnitude of misstatement, anchored on “inconsequential” and “material,” and the efficacy of compensating controls, anchored on “negatively influenced” to “positively influenced.”<sup>7</sup>

## **Participants**

Audit seniors from a Big 4 firm attending a national training session served as participants. Four participants are dropped due to incomplete responses, so our final sample consists of 106 auditors. Table 1, Panel A presents a profile of the auditors’ experiential backgrounds. The auditors in our study have an average of about three years of experience; most have been trained on SOX 404 and AS No. 2 (89.62 percent); and most have been involved in SOX 404 audits (86.79 percent).<sup>8</sup> Table 1, Panel B presents an evaluation of the auditors’ understanding of the experimental control deviation cases. The results indicate the auditors understood each control deviation in the experimental materials, rating average understandability between 8.68 and 9.46 on an 11-point scale. Further, participants appear to have understood the link between control deviations and financial reporting risk, as required by AS No. 5 (PCAOB 2007, ¶ 3). Auditors

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<sup>7</sup> The 11-point scale on the compensating controls question ranged from -5 to 5, because it encompassed both negative and positive perceptions. Analyses of likelihood and magnitude of misstatement scales indicate responses consistent with the assessment of significant deficiency.

<sup>8</sup> We solicited demographics on AS No. 2 because the experiment was run previous to the implementation of AS No. 5.

rated consideration of risk to financial statements for the control deviations between 7.93 and 8.78 on an 11-point scale. Based on Chi-square and ANOVA testing, we find that the experience and control deviation evaluation metrics are not significantly different across treatments ( $p > .10$ ), with the exception of months of audit experience ( $p = .02$ ).<sup>9</sup> In untabulated results, each of the experience and control deviation evaluation metrics was included as a covariate in each of the multivariate data analyses presented. None were statistically significant or had a substantive effect on the reported results.

[Place Table 1 about here.]

### **Experimental Checks**

To ensure that the internal control deviations and dialogue were realistic and representative of practice, experimental materials were reviewed by two audit managers (from a Big 4 firm not providing participants), a former Big 4 audit partner, the controller of a publicly traded firm, and they were pilot tested on audit seniors from several different firms. The final versions of the experimental materials were reviewed by a partner and manager from the firm that provided participants to ensure that terminology was consistent with firm terminology and to ensure that the experimental task was appropriate for the firms' audit seniors. While these reviewers noted that final determination of internal control deficiencies is made at a higher level than senior auditor, they also indicated that control issues are first analyzed by the engagement audit senior and they consider these initial evaluations of internal control deviations to be vital to the audit.

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<sup>9</sup> Five auditors reported audit experience of 90 to 120 months. If we consider them outliers and drop them from our analyses, months of audit experience is no longer significantly different across treatment conditions ( $p = .177$ ). Statistical analyses excluding these auditors produce results substantially identical to those reported. They are, therefore, left in the sample.

Manipulation checks (measured with 11-point scales) were included to verify that participants read and understood the treatments. One question asked about the tone of the explanations given by the controller and was anchored on “admitting there was a breach of control” and “denying there was a breach of control.” The mean responses of participants in the concession (denial) treatment are 4.51 (9.98) and 4.71 (9.78) for the two internal control deviations. Another question asked when the control deviation was discovered and was anchored on “while testing revenue cycle application controls” and “while testing information technology general controls.” The mean responses of participants in the IT (manual) control deviation treatment are 8.59 (3.07) and 8.85 (2.50) for the two internal control deviations. All differences between treatments are statistically significant ( $p < .01$ ) and indicate that participants understood their assigned type of persuasion tactic and control deviation. Finally, all participant responses were captured under two different question orders, with no order effects detected.

#### IV. RESULTS

Table 2 presents t-tests of mean differences between concession and denial treatments for the dependent and control variables. With respect to IT control deviations, the assessed significance of deficiency (H1) is lower for concession than denial for IT-1 (5.74 vs. 7.30;  $p = .028$ ) and IT-2 (8.00 vs. 9.26;  $p = .042$ ).<sup>10</sup> In addition, perceived explanation adequacy (H2) is higher for concession than denial for IT-1 (6.22 vs. 4.22;  $p < .001$ ) and IT-2 (6.19 vs. 3.41;  $p < .001$ ). With respect to manual control deviations, the assessed significance of deficiency and perceived explanation adequacy do not differ between concession and denial ( $p > .10$ ) for Manual-1 or Manual-2. Thus, univariate results are consistent with H1 and H2.

[Place Table 2 about here.]

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<sup>10</sup> All reported p-values are two-tailed.

Table 3 presents multivariate tests of H1 and H2 using repeated measures ANOVA models. The results indicate a significant interaction between the concession/denial and IT/manual treatments for the assessed significance of deficiency ( $p = .038$ ) and perceived explanation adequacy ( $p = .004$ ).<sup>11</sup> Figure 1 presents graphs of each interaction and Table 3, Panel B presents mean contrasts of concession/denial within IT and manual treatments. For IT control deviations, the assessed significance of deficiency is lower for concessions than denials ( $p = .007$ ) and perceived explanation adequacy is higher for concessions than denials ( $p < .001$ ). For manual control deviations, the assessed significance of deficiency and perceived explanation adequacy are not significantly different for concessions and denials ( $p > .50$  for both tests).<sup>12</sup> Our multivariate results are also consistent with H1 and H2.

[Place Table 3 and Figure 1 about here.]

While our results indicate systematic differences in the effectiveness of concessions and denials between IT and manual control deviations, alternative explanations exist for the observed differences. Specifically, the IT control deviations could systematically differ from the manual control deviations in perceived plausibility or significance.<sup>13</sup> As shown in Table 4, differences in auditor perception and judgment are evident across IT and manual control deviation cases. Specifically, IT-1 exhibits a lower assessed significance of deficiency and a higher perceived explanation adequacy than do either of the manual control deviations (Manual-1 or Manual-2).

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<sup>11</sup> We also analyze the within-subjects interactions reported in Table 3. While we find differences across the cases (IT-1, IT-2, Manual-1, Manual-2), we find no evidence that between subject concession and denial results are a function of only one of the IT cases or one of the manual cases.

<sup>12</sup> IT concessions have lower deficiency assessment ( $p = .001$ ) and higher perceived explanation adequacy ( $p < .001$ ) than the average of the other treatments ( $\mu_{IT/Concede}$  vs.  $(\mu_{IT/Deny} + \mu_{Manual/Concede} + \mu_{Manual/Deny})/3$ ). IT denials do not differ in deficiency assessment ( $p > .50$ ) or perceived explanation adequacy ( $p > .50$ ) as compared to the average of manual concession and denial ( $\mu_{IT/Deny}$  vs.  $(\mu_{Manual/Concede} + \mu_{Manual/Deny})/2$ ).

<sup>13</sup> As noted in the methods section, the comparison of IT and manual control deviations require the comparison of different deviation cases.

However, IT-2 does not systematically differ from the manual control deviations (Manual-1 or Manual-2) in perceived plausibility or significance, and we find no evidence that concessions are only effective for IT-1. The t-tests in Table 2 indicate systematic differences between concessions and denials for IT-2. As well, untabulated repeated measures ANOVAs on IT control deviations corroborate these results. In sum, we find no evidence that concessions and denials are differentially effective due to differences in perceived plausibility or significance across the IT and manual control deviation cases.

[Place Table 4 about here.]

## **Additional Analyses**

### ***Management Blame***

Theory suggests that the technology element in an IT control deviation explanation will dilute management blame. As shown by t-tests in Table 5, Panel A, auditors perceive management blame significantly lower for IT than for manual control deviations.<sup>14</sup> We theorize that reduced management blame will make concession, but not denial, an effective persuasion tactic. As shown in Table 5, Panel B, when auditors perceive management blame low, concessions result in lower assessed significance of deficiency (6.65 vs. 7.42;  $p = .100$ ) and higher perceived explanation adequacy (6.00 vs. 4.29;  $p < .001$ ) than denials.<sup>15</sup> When auditors perceive management blame high, concessions and denials have no differential effect on the assessed significance of deficiency (8.94 vs. 9.26;  $p > .50$ ) or perceived explanation adequacy

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<sup>14</sup> For sensitivity, we perform repeated measures ANOVA and regression with Huber-White corrected standard errors (Stata Press 2005) that controlled for perceived deviation significance. All results indicate that perceived management blame is higher for IT than manual deviations and is unaffected by concessions and denials.

<sup>15</sup> Reported results are for a median split on management blame. As expected, 70 (30) percent of observations in the low management blame group are IT (manual) control deviations. For sensitivity analysis, we also made more extreme cuts on blame. Results are inferentially identical to those reported.

(3.63 vs. 3.25;  $p = .458$ ). These results support theory that perceived management blame is lower for IT control deviations and that lower blame makes concession a more effective persuasion tactic.

[Place Table 5 about here.]

### ***Process Model of Persuasion Tactic Effects***

We show that persuasion tactics can influence auditor assessed significance of deficiency. However, theory and professional guidance provide expected interventions to this relation. First, theory indicates that an explanation's perceived adequacy, as opposed to its claim, influences judgment (Bies et al. 1988; Shapiro et al. 1994); therefore, perceived explanation adequacy should mediate the influence of persuasion tactics on the assessed significance of deficiency. Second, AS No. 5 establishes perceived magnitude of misstatement, likelihood of misstatement, and effectiveness of compensating controls as statutory determinants of deficiency severity (PCAOB 2007, ¶ 62-68). We perform path analyses to test the relations among concession/denial, explanation adequacy, the statutory determinants of deficiency severity, and auditor assessed significance of deficiency.

Individual path models for IT and manual control deviations are shown in Figure 2.<sup>16</sup> Both models contain all statistically significant paths and both models have good fit (comparative fit index (CFI) > 0.96 and the standardized root mean square residual (SRMR) < 0.057) (Kline 2005). As expected, our models indicate that explanation adequacy fully mediates the effect of concession/denial on the assessed significance of deficiency and that estimated magnitude and

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<sup>16</sup> We separately identify the path models in order to estimate indirect path effects, which we report in the notes for Figure 2. However, we also perform a multi-group SEM analysis that simultaneously identifies the IT and manual path models. The multi-group analysis produces results inferentially identical to those reported.

likelihood of misstatement affect the assessed significance of deficiency.<sup>17</sup> We also find that perceived explanation adequacy has a strong inverse relation with auditor assessed significance of deficiency for both IT and manual control deviations. This finding implies that anything management can do to make explanations appear more adequate will result in auditor judgments that are more aligned with management's preferences.

[Insert Figure 2 about here]

## V. DISCUSSION

Explanations are given to persuade others that one's actions are sensible and appropriate (Keil 2006). Prior research in accounting finds that management makes self-serving explanations in annual reports (Bettman and Weitz 1986; Aerts 2005; Barton and Mercer 2005) and to auditors when defending their position related to earnings management attempts (Nelson et al. 2002). The literature also indicates that auditors are less persuaded by self-serving explanations when management has incentives to manage earnings (Anderson et al. 2004) and that only plausible explanations for unfavorable outcomes persuade analysts (Barton and Mercer 2005). We extend this literature by holding incentives and factual content constant to study the effect of concession and denial persuasion tactics embedded in management's explanations to auditors.

When management concedes that an IT control deviation reflects a control failure, we find that auditors assess significance of deficiency lower and perceived explanation adequacy higher than when management denies the existence of control failure. However, we find no difference in auditor assessed significance of deficiency or perceived explanation adequacy for manual control deviations, irrespective of whether management concedes or denies a control failure.

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<sup>17</sup> A mediation test based on only concession/denial, explanation adequacy, and deficiency assessment also indicates that explanation adequacy fully mediates concession/denial effects on the assessed significance of deficiency (Baron and Kenny 1986).

Consistent with theory, we find that auditors blame management less for IT than manual control deviations, and we find that the relative effectiveness of concessions and denials can be explained by the amount of blame assigned to management. More generally, our results indicate that concessions are more effective persuasion tactics than denials whenever a concession is joined with information that reduces auditor perception of management blame. While IT control deviations provide a natural and commonly occurring context for this phenomenon, future research should study other contexts in which management persuasion tactics are combined with information that influences auditor perception of management blame.

The audit planning materials used in this experiment are contextually rich, but they are necessarily restricted due to limits on access to the experimental participants and potential maturity effects. We study deviations indicative of potential significant deficiencies. While significant deficiencies are important, they are less severe than material weaknesses, and our results may not generalize to deviations indicative of potential material weaknesses. Our experimental cases differed on attributes other than the presence and absence of technology in control deviations, because of the nature of our experiment's internal control setting. Although analyses of alternative explanations for our results do not contradict our interpretation of the interaction effect between persuasion tactics and IT/manual control deviations, we cannot rule out the possibility that unobserved correlated variables could offer alternative explanations for our results. In addition, our results may not generalize to all types of control deviations. For instance, control deviations defined as design deficiencies typically do not involve operational testing, and it is not clear whether management persuasion tactics would influence auditors differently for design versus operational control deficiencies. Future research is needed to address these issues.

Our results are specific to audit seniors and potentially specific to the firm that provided the participants. Also, audits usually involve an audit team, and the ability to interact with other team members can affect audit judgments. In this experiment, we used individual judgments that do not capture dynamic team interactions. However, the initial judgments made and documented by audit seniors have been shown to influence the judgments of reviewing auditors (Ricchiute 1999). Further, the audit seniors in this study were experienced in evaluating control deviations and firm partners indicated that audit senior judgments are important to the audit. Our focus on individual judgments is consistent with prior research in audit judgment and decision-making.

SOX requirements have significantly expanded audits of publicly traded firms and thereby created a new environment for the auditor that involves making judgments on the quality of clients' internal control systems. The subjective nature of this judgment provides the vehicle for management persuasion tactics to influence auditors. For regulators, our results indicate that auditors can be influenced by management persuasion tactics. In addition, we find that perceived explanation adequacy exerts a strong effect on auditor judgment regardless of control deviation type. This result is important because it suggests that management inquiry does more than provide auditors with factual evidence, as per professional guidance in AS No. 5. With regard to audit practice, our results indicate that a consistent use of concessions by management is an optimal strategy, because concessions are not perceived negatively by auditors and sometimes they produce auditor judgments that are significantly more favorable to management's agenda. This represents a potential bias in auditor judgment that firms could consider addressing in training.

We extend the management explanation literature to consider explanations that embody persuasion tactics, as opposed to explanations solely for the purpose of offering causal evidence

germane to the audit. In addition, we demonstrate an interaction effect between type of persuasion tactic and type of control deviation and provide evidence about how persuasion tactics influence auditors' assessments. By integrating prior research on the dilution effect (Hackenbrack 1992) with psychology-based theory on persuasion tactics and human-computer interactions, we provide a more complete understanding of the complex relation between management explanations and auditor judgment.

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**TABLE 1**  
**Profile of Auditors' Experience and Control Deviation Understanding**

**Panel A: Experience**

	<u>Number</u>	<u>Percent</u>
Number of Auditor Participants	106.00	100.00
Number of Auditor Participants With		
In-Charge Experience	92.00	86.79
In-Charge Experience SOX 404 Controls Audit	57.00	53.77
Involvement in SOX 404 Audit	92.00	86.79
Training on SOX 404	95.00	89.62
Training on AS No. 2	95.00	89.62
Auditor Participants Average	<u>Mean</u>	<u>Std. Dev.</u>
Months Of Audit Experience	37.62	19.78
Number of Clients with SOX 404 audits	1.52	1.03
Number of Clients with systems group interactions	2.16	1.25
Number of Clients with significant deficiencies	0.90	0.82
Number of Clients with material weaknesses	0.33	0.57

**Panel B: Control Deviation Understanding<sup>a</sup>**

	<u>Mean</u>	<u>Std. Dev.</u>
Understood Control Deviation <sup>b</sup>		
IT-1: Password Policy Violation - Invalid Sales Invoices	9.00	1.86
IT-2: Wrongly Granting System Access - Stolen Procurement Cards	8.68	1.73
Manual-1: Unapproved Customer Credit	9.46	1.59
Manual-2: Unrecorded Sales Discounts	9.13	1.84
Consideration of Financial Statement Risk from Control Deviation <sup>b</sup>		
IT-1: Password Policy Violation - Invalid Sales Invoices	7.93	2.42
IT-2: Wrongly Granting System Access - Stolen Procurement Cards	8.78	2.01
Manual-1: Unapproved Customer Credit	8.50	1.94
Manual-2: Unrecorded Sales Discounts	8.73	1.44

<sup>a</sup> Each deviation case was designed to be understandable, potentially have contributed to a more than inconsequential misstatement of the financial statements, and have its cause rooted in employee failure to follow procedures. IT-1 and IT-2 represent the IT control deviation cases. The first deviation case involved placement of false sales orders using a password obtained from a stolen laptop where the employee had permanently stored their system password. The second deviation case involved a system access violation where the employee had provided access to an intruder who stole customer procurement card information. In the manual control deviations, the first deviation case, Manual-1, involved inappropriate credit approval overrides and the second deviation case, Manual-2, involved unrecorded discounts on sales. (See the Appendix for an excerpt of the experimental materials that describes the control deviations.)

<sup>b</sup> Assessments were made on 11-point scales with 11 representing high understandability and high consideration of financial statement risk.

**TABLE 2**  
**Auditor Judgment Differences between Concession and Denial Persuasion Tactics**

<u>Variables</u> <sup>a</sup>	<u>IT Control Deviations</u>						<u>Manual Control Deviations</u>					
	<u>IT-1</u>			<u>IT-2</u>			<u>Manual-1</u>			<u>Manual-2</u>		
	<u>Password Policy Violation</u>			<u>Wrongly Granting Access</u>			<u>Unapproved Credit</u>			<u>Unrecorded Discounts</u>		
	<u>Concede</u>	<u>Deny</u>	<u>t-value</u>	<u>Concede</u>	<u>Deny</u>	<u>t-value</u>	<u>Concede</u>	<u>Deny</u>	<u>t-value</u>	<u>Concede</u>	<u>Deny</u>	<u>t-value</u>
	n = 27	n = 27		n = 27	n = 26/27 <sup>b</sup>		n = 27/28 <sup>b</sup>	n = 24		n = 27/28 <sup>b</sup>	n = 24	
Significance of Deficiency	5.74 (2.58)	7.30 (2.43)	2.280**	8.00 (2.63)	9.26 (1.72)	2.080**	8.54 (2.03)	8.58 (2.08)	0.083	8.43 (1.83)	8.13 (1.94)	0.579
Explanation Adequacy	6.22 (2.21)	4.22 (2.19)	3.343***	6.19 (2.48)	3.41 (2.10)	4.441***	4.26 (2.80)	3.79 (2.23)	0.655	3.14 (2.09)	3.58 (2.70)	0.663
Compensating Controls	0.26 (1.99)	-0.37 (2.04)	1.147	-1.04 (1.93)	-1.48 (2.06)	0.817	-0.71 (1.88)	-1.63 (2.37)	1.542	-0.96 (1.75)	-0.96 (2.53)	0.010
Magnitude of Misstatement	6.63 (2.93)	8.33 (2.59)	2.191**	8.04 (2.58)	9.23 (2.07)	1.856*	8.14 (2.05)	7.92 (2.10)	0.392	7.68 (2.06)	7.79 (2.30)	0.187
Likelihood of Misstatement	6.96 (2.93)	7.26 (2.75)	0.383	7.11 (2.01)	8.30 (2.64)	1.856*	7.68 (2.57)	8.13 (2.19)	0.668	8.04 (2.06)	8.29 (2.37)	0.458

\*, \*\*, \*\*\* Denotes two-tailed significance at the 10%, 5%, 1% levels, respectively. Mean (Std. Dev.) and t-values reported.

<sup>a</sup> All variables captured with 11-point scales. Significance of Deficiency anchored by “no deficiency” and “significant deficiency”; Explanation Adequacy anchored by “not adequate” and “very adequate”; Compensating Controls anchored by “negatively influenced” and “positively influenced” (scale ranged from -5 to 5); Magnitude of Misstatement anchored by “inconsequential” and “material”; Likelihood of Misstatement anchored by “remote” and “probable.”

<sup>b</sup> Cell sizes vary due to two missing responses: one in explanation adequacy and one in magnitude of misstatement.

**TABLE 3**  
**Repeated Measure ANOVAs and Mean Contrasts**

**Panel A: Repeated Measures ANOVA <sup>a</sup>**

<u>Source of Variation</u>	<u>df</u>	<u>Significance of Deficiency (H1)</u>			<u>Explanation Adequacy (H2)</u>		
		<u>MS</u>	<u>F</u>	<u>p</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Between Subjects							
IT/Manual	1	37.633	5.332	0.023	87.834	10.554	0.002
Concession/Denial	1	21.616	3.063	0.083	78.074	9.381	0.003
IT/Manual x Concession/Denial	1	31.130	4.411	0.038	71.414	8.581	0.004
Error	102/101	7.058			8.323		
Within Subjects							
Case	1	44.144	17.840	0.000	14.395	5.138	0.026
Case x IT/Manual	1	75.373	30.582	0.000	0.507	0.181	0.672
Case x Concession/Denial	1	1.384	0.559	0.456	0.008	0.003	0.956
Case x IT/Manual x Concession/Denial	1	0.010	0.004	0.950	8.446	3.015	0.086
Error(Case)	102/101	2.474			2.802		

**Panel B: Mean Contrasts**

<u>Hypotheses</u>	<u>Mean Contrasts</u>	<u>Significance of Deficiency (H1)</u>		<u>Explanation Adequacy (H2)</u>	
		<u>Contrast Value</u>	<u>t-value</u>	<u>Contrast Value</u>	<u>t-value</u>
H1/H2	$\mu_{IT/Concede}$ VS. $\mu_{IT/Deny}$	-1.407	2.753***	2.389	4.305***
	$\mu_{Manual/Concede}$ VS. $\mu_{Manual/Deny}$	0.128	0.245	-0.053	0.093

\*, \*\*, \*\*\* Denotes two-tailed significance at the 10%, 5%, 1% levels, respectively.

<sup>a</sup> Significance of Deficiency and Explanation Adequacy are defined in Table 2. Participants evaluated two control deviations (Case) consisting of either IT or manual control deviations (IT/Manual) and participants received management explanations for the deviations that either contained concession or denial (Concession/Denial) that the deviation represented a deficiency. Greenhouse-Geisser and Huynh-Feldt adjustment to degrees of freedom for sphericity violations validate the reported repeated measure results (Tabachnick and Fidell 2000). For sensitivity analysis, regressions using Huber-White corrected standard errors were run and these produced results inferentially identical to those reported (Stata Press 2005). Results from a repeated measures multivariate analysis of variance (RMANOVA) were inferentially identical to those reported in the individual repeated measure ANOVAs.

**TABLE 4**  
**Auditor Judgment Differences between IT and Manual Control Deviation Cases**

**Panel A: Mean (Std. Dev.) of IT and Manual Control Deviation Cases**

<b>Variables<sup>b</sup></b>	<b>Control Deviation Cases<sup>a</sup></b>				<b>F-value<sup>c</sup></b>
	<b>IT-1</b>	<b>IT-2</b>	<b>Manual-1</b>	<b>Manual-2</b>	
	n = 54	n = 53/54	n = 51/52	n = 51/52	
Significance of Deficiency	6.52 (2.60)	8.63 (2.29)	8.56 (2.03)	8.29 (1.87)	10.823***
Explanation Adequacy	5.22 (2.40)	4.80 (2.67)	4.04 (2.53)	3.35 (2.38)	5.828***
Compensating Controls	-0.06 (2.02)	-1.26 (1.99)	-1.13 (2.15)	-0.96 (2.12)	3.725**
Magnitude of Misstatement	7.48 (2.96)	8.62 (2.40)	8.04 (2.06)	7.73 (2.15)	2.198*
Likelihood of Misstatement	7.11 (2.82)	7.70 (2.40)	7.88 (2.39)	8.15 (1.99)	1.772

**Panel B: Mean Differences between IT and Manual Control Deviation Cases**

<b>Control Deviations</b>		<b>Variables<sup>d</sup></b>			
		<b>Significance of Deficiency</b>	<b>Explanation Adequacy</b>	<b>Compensating Controls</b>	<b>Misstatement Magnitude</b>
IT-1	IT-2	-2.11***	0.42	1.20**	-1.14*
	Manual-1	-2.04***	1.18*	1.07**	-0.56
	Manual-2	-1.77***	1.87***	0.90	-0.25
IT-2	Manual-1	0.07	0.76	-0.13	0.58
	Manual-2	0.34	1.45***	-0.30	0.89
Manual-1	Manual-2	0.27	0.69	-0.17	0.31

\*, \*\*, \*\*\* Denotes two-tailed significance at the 10%, 5%, 1% levels, respectively.

<sup>a</sup> IT-1 refers to the password policy violation case; IT-2 refers to the wrongly granting access case; Manual-1 refers to the unapproved credit case; and Manual-2 refers to the unrecorded discounts case.

<sup>b</sup> All variables are defined in Table 2. Cell sizes vary due to the two missing responses noted in Table 2.

<sup>c</sup> A multivariate analysis of variance (MANOVA) indicates statistically significant differences between control deviation cases (Pillai's Trace = 0.339;  $p < .01$ ). Individual ANOVA F-values are shown.

<sup>d</sup> Values shown are mean differences. Bonferroni mean comparisons are used to determine statistical significance. Tukey honestly significant differences produce results identical to the Bonferroni method.

**TABLE 5**  
**Management Blame for Control Deviations**

**Panel A: Means (Std. Dev.) Management Blame<sup>a</sup>**

<u>Control Deviation Comparisons</u>	<u>Control Deviations</u>		<u>t-value</u>
	<u>IT</u>	<u>Manual</u>	
(IT-1 vs. Manual-1)	6.04 (2.56)	9.60 (1.49)	8.725***
(IT-1 vs. Manual-2)	6.04 (2.56)	8.87 (1.77)	6.600***
(IT-2 vs. Manual-1)	8.07 (2.14)	9.60 (1.49)	4.245***
(IT-2 vs. Manual-2)	8.07 (2.14)	8.87 (1.77)	2.072**

**Panel B: Concession and Denial by Management Blame**

<u>Variables<sup>b</sup></u>	<u>Control Deviations</u>					
	<u>Low Management Blame<sup>c</sup></u>			<u>High Management Blame<sup>c</sup></u>		
	<u>Concede</u>	<u>Deny</u>	<u>t-value</u>	<u>Concede</u>	<u>Deny</u>	<u>t-value</u>
	n = 60	n = 48		n = 50	n = 54	
Significance of Deficiency (median split)	6.65 (2.54)	7.42 (2.20)	1.654*	8.94 (1.878)	9.26 (1.72)	0.475
Explanation Adequacy (median split)	6.00 (2.38)	4.29 (2.20)	3.832***	3.63 (2.55)	3.25 (2.29)	0.745

\*, \*\*, \*\*\* Denotes two-tailed significance at the 10%, 5%, 1% levels, respectively.

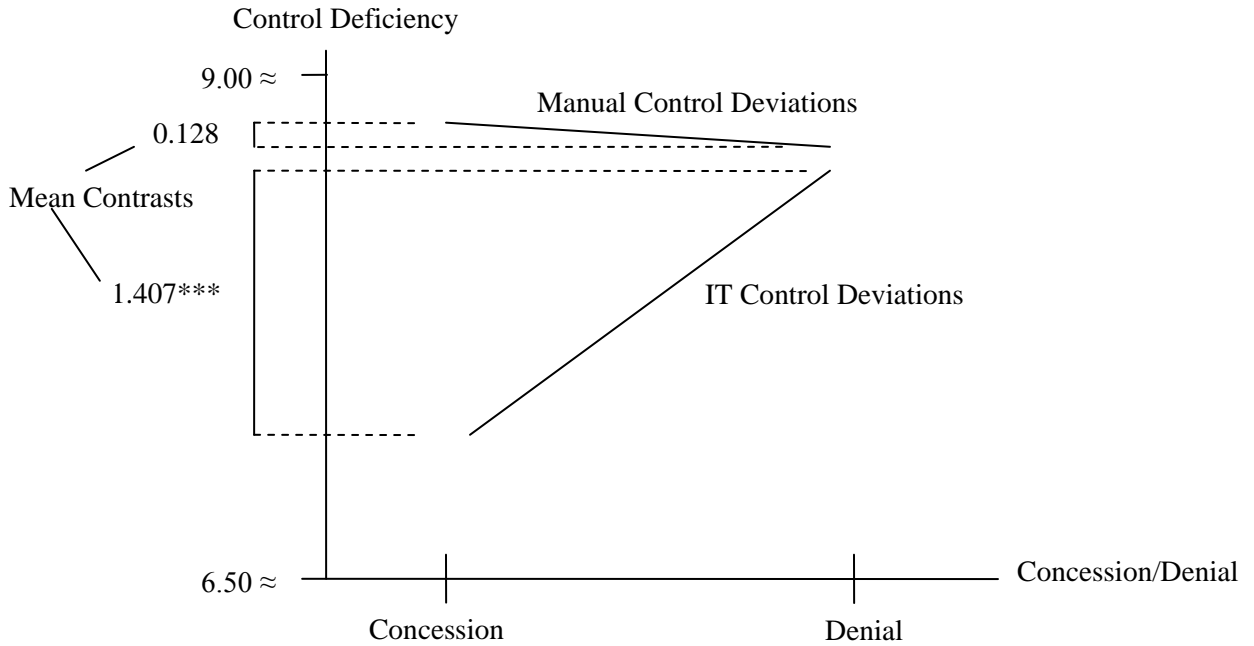
<sup>a</sup> Management Blame was captured with an 11-point scale anchored by “no blame” and “all blame.” IT-1 refers to the password policy violation case; IT-2 refers to the wrongly granting access case; Manual-1 refers to the unapproved credit case; and Manual-2 refers to the unrecorded discounts case.

<sup>b</sup> Variables are defined in Table 2.

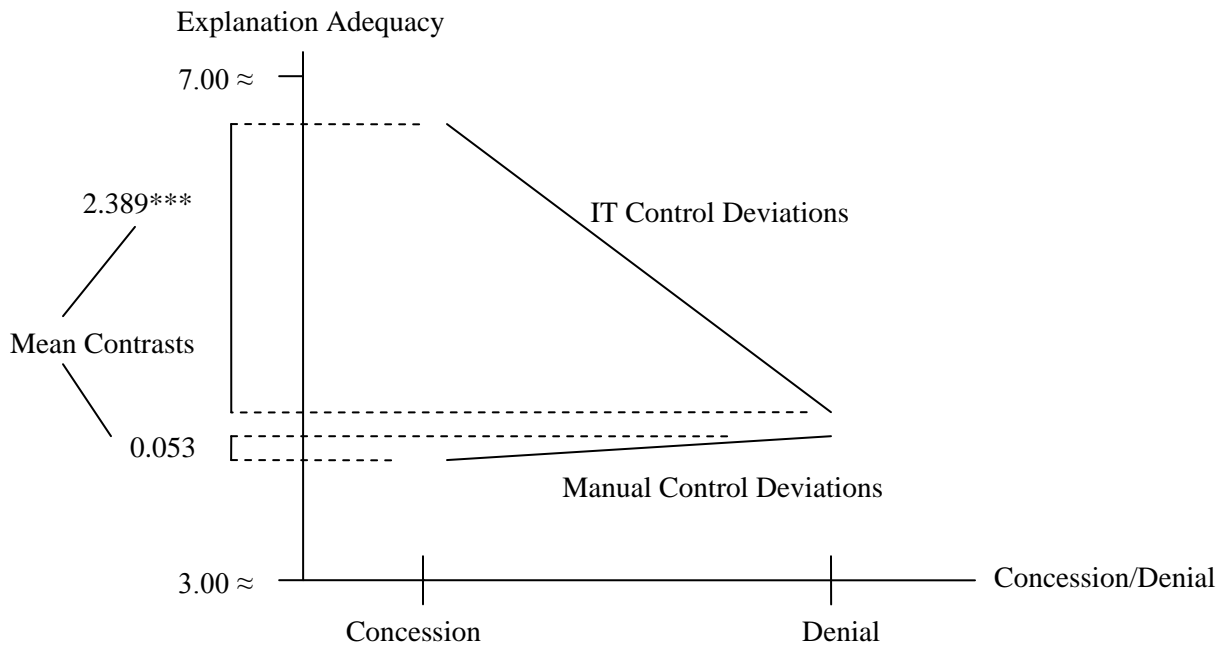
<sup>c</sup> The median split is based upon blame assessed below 9 (low blame) and above 8 (high blame) on an 11-point scale. The low (high) management blame cohort contain 76 (32) and 32 (72) IT and manual control deviation cases, respectively.

**FIGURE 1**  
**Interaction Graphs of Concession/Denial Persuasion Tactics and IT/Manual Control Deviations**

**Panel A: Assessed Significance of Deficiency**

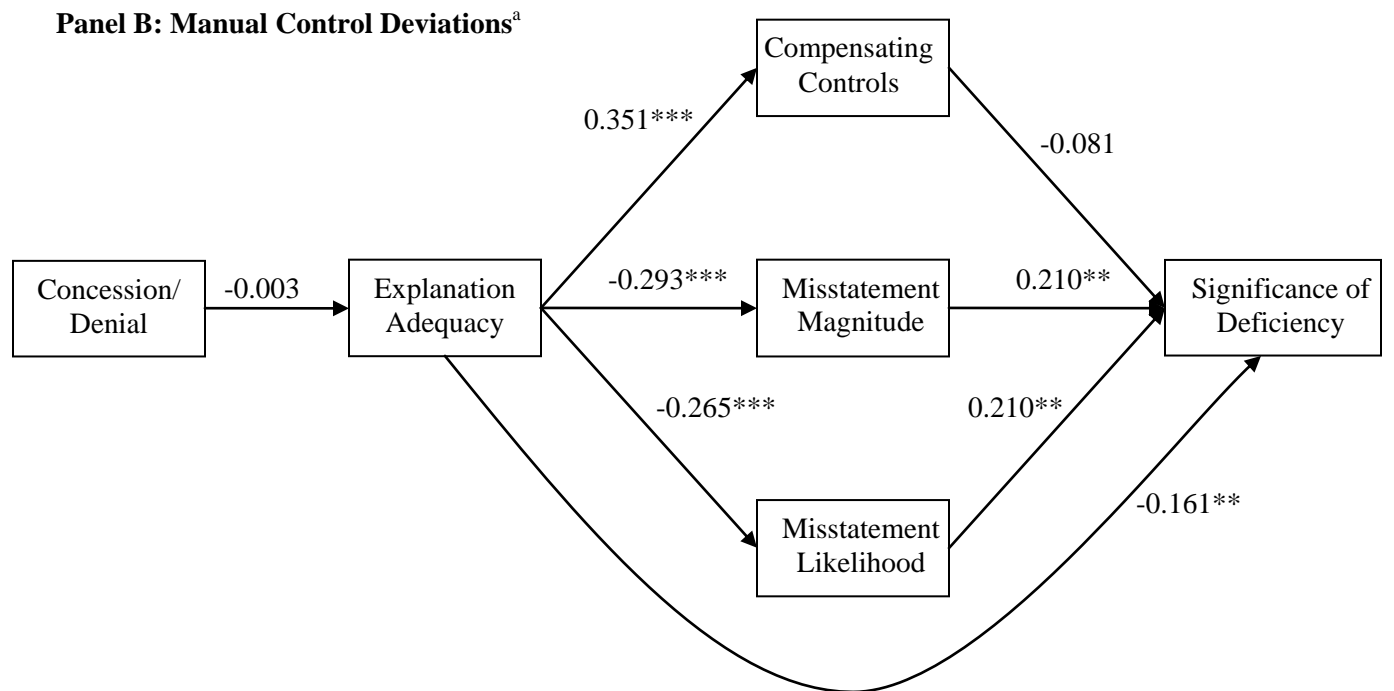
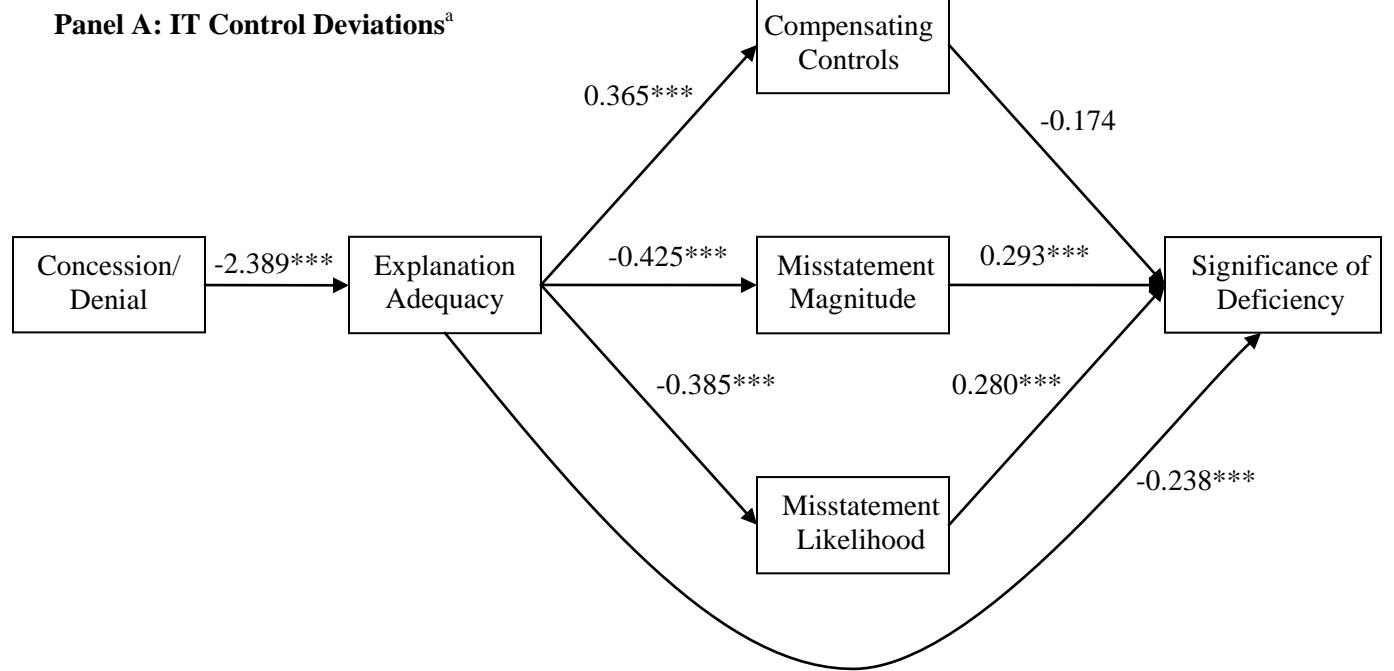


**Panel B: Perceived Explanation Adequacy**



\*, \*\*, \*\*\* Denotes two-tailed significance at the 10%, 5%, 1% levels, respectively.

**Figure 2**  
**Path Models**



\*, \*\*, \*\*\* Denotes two-tailed significance at the 10%, 5%, 1% levels, respectively.

<sup>a</sup> Modeled, but not shown, is a statistically significant, positive covariance between misstatement magnitude and likelihood judgments (Pearson correlation;  $\rho = 0.587$ ;  $p < .001$ ). All alternative paths stemming from concession/denial were tested and were found statistically insignificant – explanation adequacy fully mediates the effects of concession/denial persuasion tactics for IT control deviations. Path models are estimated based on covariance matrices, and indicate good fit with the comparative fit index (CFI)  $> .96$  and the standardized root mean square residual (SRMR)  $< 0.057$  for both models (Kline 2005). Significant indirect effects stemming from concession/denial are only found in the path model for IT control deviations. Indirect path parameter estimates and their t-values are as follows: (1) concession/denial  $\Rightarrow$  explanation adequacy  $\Rightarrow$  control deficiency (0.568,  $t = 2.481^{**}$ ); (2) concession/denial  $\Rightarrow$  explanation adequacy  $\Rightarrow$  magnitude of misstatement  $\Rightarrow$  control deficiency (0.297,  $t = 2.402^{**}$ ); and (3) concession/denial  $\Rightarrow$  explanation adequacy  $\Rightarrow$  likelihood of misstatement  $\Rightarrow$  control deficiency (0.258,  $t = 2.261^{**}$ ).

## APPENDIX

### Experimental Materials: Internal Control Deviations and Conversational Vignette

#### IT Control Deviations:

Specific Issues determined in testing information technology general controls:

1. A salesperson's laptop had been stolen. It contained a stored password that allowed a sales order to be downloaded to the system. Several bogus orders had been placed before the password was disabled.
2. Griffin's system had been breached in November. Indications are that approximately 2000 customer records were stolen from the customer master file. Much of the information lost was harmless. However, some of it would be of value to competitors. Additionally, approximately 500 of the customers had procurement card information on file.

#### IT Control Deviations Conversational Vignette:

The audit senior on the engagement, John, follows up on these issues with Derrick, the controller of Griffin Inc. The following is the discussion between John and Derrick.<sup>18</sup>

**John:** Hi Derrick. I scheduled this meeting with you to discuss some findings related to our controls audit. First, I'd like to discuss salesperson access to your sales order system.

**Derrick:** Sit down, John. I'd be happy to discuss that with you. Our salespeople work primarily from the field. So, we have provided them with laptops and that allows them to create sales orders and electronically file them from the field. Of course, both the laptops and our order entry system are password protected. What else can I tell you?

**John:** Well, I am familiar with the access controls that you just described; however, when we were performing our tests over information technology general controls, we reviewed password changes and found a cancelled password that we were told was due to a laptop theft. Apparently one of your salespeople lost their laptop and it contained the password for your order entry system?

**Derrick:** *John, I admit that we did have a small breach of controls in access. (John, this was not a control breach. This was an unusual incident due to circumstances beyond our control.)* The laptops themselves are password protected, but once that laptop is in the hands of a hacker, the laptop's password is almost useless. In this particular instance, our salesperson had permanently stored their system password on their laptop. So, once the thief had the laptop, they basically had access to our order entry system. Now, that said, as soon as the laptop was reported stolen, we disabled that password. Additionally, our credit manager reviews sales orders and if the order is to a new customer, he catches it. *John, I concede that we had a breach of a system access control, but as I said, our credit manager reviews sales orders. (John, people steal. We have controls that limit the damage from theft, but we cannot stop theft. This is not in our power. This is not a breach of controls.)*

**John:** Did any invalid sales orders get through?

**Derrick:** Frankly, we did ship a very large order to one of our customers. Although they could have denied it, the order happened to be for product they normally carry so they accepted the order after they

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<sup>18</sup> Italicized text represents the concession manipulation. Italicized text in parenthesis represents the denial manipulation.

reported it. If those amounts hadn't been paid, that could have affected our results for this year. But, the important point is that the account was paid.

**John:** OK, let's get to the next issue. It appears that your main servers were hacked in November. Additionally, we found evidence that the customer master file was breached.

**Derrick:** *Again, John, I have to admit that security was breached. (Again, John, this was not a control breach. This system breach was due to circumstances beyond our control.)* It looks like we were socially engineered. Someone began attacking our system. Of course, our firewall picked it up. Then one of our system administrators got a phone call, and the caller said that our system was attacking his system. Our administrator said he didn't think that was the case and that we were being attacked also. In any event, the two decided that they would work on this problem together, and our administrator gave the caller access to part of our system. Well, the caller was the hacker and he used his access to our system to breach the customer master file. As you know, he got about 500 procurement card numbers. Luckily the liability on those is limited. *(John, how do you protect yourself against something like this? Bad guys are constantly trying to break into our system. We cannot control that. One of them just got through this time.)* And don't forget, John, we trained our people against this type of threat.

**John:** How quickly did you discover the breach?

**Derrick:** You know, John, that's the insidious thing. When one of our employees lets a hacker into our system, we don't have any mechanism to catch them. If we don't stop them at the gate, it's trouble. We didn't know that our system had been breached until the pro-cards started getting charged fraudulently, and it eventually led back to our shop.

**John:** Is there any possibility of an unrecorded liability here?

**Derrick:** No, I don't think so, John. It could have been larger, but we caught it in time. All the cards have been stopped. We've paid damages and none of our customers have indicated legal action. I think we are fine.

[pause as John considers the situation]

**Derrick:** Listen, John, we are very concerned that we maintain strong internal controls. *I readily concede that we had a couple of control issues. But, (We do not have issues with our controls. There is nothing wrong with our controls over system security. These issues that you've brought up are things that are beyond the control of any normal business or system. And,) with our compensating controls, nothing has occurred that caused a material misstatement of profits.*

### **Manual Control Deviations:**

Specific Issues determined in testing application controls in the revenue cycle:

1. Near the end of the year, the electronic approval by the credit manager was missing for several customer orders that exceeded the credit limit. These orders were still processed without the approval.
2. The analysis of the daily unapplied cash exception reports indicated a number of unreported discounts to customers. Upon further investigation the auditor found that salespeople gave discounts to customers and failed to record them on the customer order. In most instances, adjustments to revenue were made without contacting the salespeople.

### **Manual Control Deviations Conversational Vignette:**

The audit senior on the engagement, John, follows up on these issues with Derrick, the controller of Griffin Inc. The following is the discussion between John and Derrick.<sup>19</sup>

**John:** Hi Derrick. I scheduled this meeting with you to discuss some findings related to our controls audit. First, I'd like to discuss the controls over the approval of credit.

**Derrick:** Sit down, John. I'd be happy to discuss that with you. We have a credit manager who approves all customer credit limits and then approves all orders exceeding the credit limit specifically determined for each customer. When we have a new customer, our credit manager uses a software application that allows him to check credit ratings with three credit rating agencies. Once he has the credit ratings, he assigns a credit limit. He also reviews credit ratings for all customers on a semi-annual basis and adjusts the limits accordingly. For our largest clients, he performs this on a quarterly basis. When orders come in, they are checked against the current available credit limit. If there is not enough available credit, the order is reviewed. If approved, the credit manager uses a special password to approve the order and release it for processing. What else can I tell you?

**John:** Well, I am familiar with the process that you just described; however, when we were performing our tests over revenue cycle application controls, we found some orders that were missing an approval from the credit manager. It appears that these orders were routed through the system in another way and were filled without credit approval.

**Derrick:** *John, I admit that we did have a small breach of controls in credit approval. (John, this was not a control breach. This was an unusual incident due to circumstances beyond our control.)* During September, our credit manager was really sick and had to be out for several weeks. So, we performed a handful of system overrides to release orders for processing. *(We have no power over situations like this. The guy was so sick we couldn't even discuss the situation with him for over a week.)*

**John:** Oh. Who performed the override and did this individual check the available credit?

**Derrick:** The system override was performed by the Service Specialist Supervisor, Brenda. She was able to check available credit for our existing customers, but she could not access the software to check credit for new customers. *We would have liked to take the time to get the access, but we needed to process the orders in a timely manner. It affected only a few new customers and we monitored it closely. John, I concede that we had a breach of this control, but as I said, we monitored it closely. (This was an isolated case based on events that were outside our control. It affected only a few new customers and we did not*

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<sup>19</sup> Italicized text represents the concession manipulation. Italicized text in parenthesis represents the denial manipulation.

*want to risk losing those customers simply because we couldn't check their credit in a timely fashion. We had no other alternatives and we monitored it closely. John, this is not a breach of controls.)*

**John:** I guess the next question that I have is whether you know if this has had any impact on your financial statements.

**Derrick:** Frankly, we did have one new customer that placed a very large order that was approved without a credit check. If those amounts hadn't been paid, that could have affected our results for this year. But, the important point is that the account was paid.

**John:** OK, let's get to the next issue. It appears that customer discounts are not always recorded. Additionally, we found evidence that some unrecorded discounts are excessive.

**Derrick:** *Again, John, I have to admit that sometimes this control has been breached. (Again, John, this was not a control breach. This issue is due to circumstances beyond our control.)* Our salespeople are required to record all discounts and our system checks to ensure that discounts are within acceptable limits on all orders. But, the salespeople don't always do it. *(Sometimes, they get busy, forget and don't record the discount or get approval, but that's just human error outside our control. We remind them, but John, you know what salespeople are like. They're not like auditors. They just aren't as good about paperwork.)* However *(And)*, don't forget, John, I review a gross margin report on a monthly basis to make sure that something like excessive discounts doesn't get out of hand.

**John:** Is anyone doing anything else to ensure the accuracy of invoice amounts around quarter ends?

**Derrick:** No, because I am reviewing gross margin reports which would pick up any material misstatements. I fully recognize that our product line has wide variation in margins, but I think that I have enough experience to know if something is seriously out of whack.

[pause as John considers the situation]

**Derrick:** Listen, John, we are very concerned that we maintain strong internal controls. *I readily concede that we had a couple of control issues. But, (We do not have issues with our controls. There is nothing wrong with our controls over revenue. These issues that you've brought up are things that are beyond the control of any normal business or system. And,)* with our compensating controls, nothing has occurred that caused a material misstatement of profits.