

**The Influence of Documentation Specificity and Fraud Risk Priming on Auditor Fraud  
Judgments and Evidence Evaluation Decisions**

E. Michael Bamber  
J.M. Tull School of Accounting  
Terry College of Business  
University of Georgia  
Athens, GA 30602-6252  
mbamber@terry.uga.edu

Tina D. Carpenter  
J.M. Tull School of Accounting  
Terry College of Business  
University of Georgia  
Athens, GA 30602-6252  
tcarpenter@terry.uga.edu

Jacqueline S. Hammersley  
J.M. Tull School of Accounting  
Terry College of Business  
University of Georgia  
Athens, GA 30602-6252  
jhammers@uga.edu

November 2007

We appreciate comments received from Linda Bamber and workshop participants at the University of Arizona, University of Georgia, and University of South Florida. We are grateful to Ann Gamble and Jeremy Griffin for their able assistance coding the data. We are also indebted to the accounting firm and the auditors who generously gave their time to assist us. Jacqueline Hammersley is grateful for research support provided by a Terry-Sanford Research Award.

# **The Influence of Documentation Specificity and Fraud Risk Priming on Auditor Fraud Judgments and Evidence Evaluation Decisions**

## **ABSTRACT**

The Public Company Accounting Oversight Board (PCAOB) recently suggested that auditors' lack of specific fraud planning documentation has led to insufficient attention to fraud risk factors in subsequent audit work. In this study, we experimentally investigate how the specificity of fraud risk documentation influences auditors' subsequent fraud risk assessments, issue identification, and collection of additional evidence. Further, we examine whether priming auditors about these documented risks immediately before they begin evidence evaluation later in the audit influences their subsequent fraud risk judgments and evidence evaluation. As expected, we find that documenting specific fraud risks in planning increases subsequent fraud risk assessments in the absence of priming. Additionally, unprimed auditors who receive specific but incomplete memos experience output interference and request less additional audit evidence than auditors who receive summarized or specific-complete memos. The priming effect depends on the type of fraud risk memo. Priming helps mitigate output interference. However, contrary to expectations, when auditors are primed with specific-complete fraud risk memos they are less sensitive to fraud risk factors when evaluating evidence. This study should be informative to standard setters as it suggests that more specific documentation may be beneficial in some cases, but it does not always have the intended positive effect on audit performance.

**Keywords :** *Fraud risk assessments; Issue identification; Evidence evaluation; Audit documentation; Output interference*

**Data availability:** *Contact the authors*

## I. INTRODUCTION

In this study, we examine how documentation of fraud planning discussions affects auditors' subsequent fraud risk assessments, issue identification, and collection of additional evidence. Fraud investigation is an important part of the financial statement audit, yet the PCAOB is concerned that auditors' mindsets are too compliance-oriented and insufficiently fraud-oriented (PCAOB 2004; Carmichael 2005). PCAOB inspectors recently found that even though auditors must make various planning judgments about the nature, timing, and extent of tests to address fraud risk, auditors often document their consideration of fraud merely by checking off items on checklists and standard audit programs (PCAOB 2007).<sup>1</sup> The PCAOB suggests that this lack of specific documentation may undermine audit team members' subsequent reliance on this planning work. Indeed, PCAOB inspection teams documented that auditors gave insufficient attention to fraud risk factors in subsequent audit work, even when "auditors examined transactions warranting further fraud risk consideration" (PCAOB 2007, 6). Because prior fraud research focuses on fraud risk assessment in the audit's planning stage (Nieschwietz et al. 2000), little is known about how the emphasis on fraud in audit planning influences the subsequent conduct of the audit.

We have two research objectives in this study. First, we examine how the specificity of the documentation (i.e., the fraud risk memo) prepared in the planning stage of the audit influences auditors' fraud risk assessments and evidence evaluation in subsequent stages of the audit. Second, we examine whether priming auditors about the fraud risks identified during audit

---

<sup>1</sup> SAS 99 requires auditors to conduct a brainstorming session during audit planning to discuss how and where the client may be committing fraud. The standard also requires auditors to document the risks identified during the brainstorming session and to change their planned audit procedures in response to the risks identified to determine whether the clients are, in fact, committing fraud in the ways hypothesized (AICPA 2002).

planning, before they begin evidence evaluation in a later stage of the audit, influences their subsequent fraud judgments.

The PCAOB's concern that adequate documentation is important to effective implementation of SAS 99 reflects the PCAOB's more general emphasis on documentation. PCAOB Auditing Standard 3 discusses the importance of documentation and emphasizes that how audit work is documented can impact the effectiveness of how audit work is performed and reviewed. We expect that more detailed documentation of fraud risks identified during audit planning should make fraud risk more salient and facilitate the subsequent retrieval of earlier planning efforts (Zimbelman 1997; Nelson 2007). However, detailed documentation which is incomplete may interfere with auditors' consideration of the undocumented risks. Output interference occurs when providing part of a list of items impedes recall of the remaining items from the list (Hoch 1984). Considerable research (e.g., Frederick 1991; Bedard and Biggs 1991; Anderson et al. 1992; Heiman-Hoffman et al. 1995; Asare and Wright 2004) suggests that auditors fail to recall items during audit planning due to output interference. Though output interference occurs in recall tasks, its effect on evidence evaluation, a judgment task in which processes in addition to memory operate, is unknown. Consequently, we know very little about a potentially significant unintended consequence of the PCAOB's emphasis on documentation, that is, the effect on later judgments of receiving incomplete documentation of risks discussed during planning. We expect priming auditors during later stages of the audit to consider fraud risks identified during audit planning will encourage a fraud mindset and the evaluation of audit evidence in the context of previously identified fraud risks (Johnson et al. 1991; Nieschwietz et al. 2000; Johnson et al. 2001). Moreover, research in psychology suggests that priming which encourages additional learning mitigates output interference (Bäuml and Aslan 2004).

Accordingly, we examine the joint effects of documentation specificity and priming on auditors' fraud risk assessments and evidence evaluation decisions.

Auditors from a Big 4 accounting firm participated in a two-phase experiment designed to investigate these issues. In the morning phase, auditors participated in the planning stage of the audit and then observed a brainstorming session. In the afternoon phase, auditors evaluated the interim and year-end audit work completed to-date. The experiment employed a between-participants 3 x 2 design. Our first independent variable, *fraud memo type*, allows us to investigate the impact of documentation of auditors' consideration of fraud on subsequent judgments. We manipulated this variable at three levels: summary, specific-incomplete, and specific-complete. The summary fraud memo provided a general description of the brainstorming session without documenting specific fraud risks. The specific fraud memos (i.e., complete and incomplete) differed in terms of completeness of the number of documented specific fraud risks; the incomplete (complete) specific memo documented half (all) of the risks discussed during the brainstorming session. Our second independent variable, *fraud risk priming*, allows us to investigate the effect of a change to a more fraud-oriented mindset on subsequent judgments. We manipulated this variable at two levels. Half of the participants were primed to reconsider the important fraud risks discussed during planning before they evaluated the audit evidence collected to date, and the other half of the participants did not receive this instruction. The dependent variables are measured as auditors' fraud risk assessments, their identification of remaining issues in the audit work completed to-date, and their requests for additional evidence following evidence evaluation.

Consistent with our expectations, there is an interaction between fraud memo type and fraud risk priming. As expected, documenting the specific fraud risks identified during planning

increases subsequent fraud risk assessments in the absence of priming. Also as expected, there is an interference effect associated with the specific-incomplete memo; that is, auditors receiving the incomplete memo tend to identify fewer remaining issues and request less additional audit evidence than do auditors who receive either summary or specific-complete memos. The priming effect depends on the type of fraud risk memo. Primed auditors assess fraud risk higher than unprimed auditors when they receive the summary fraud risk memo. Priming has little effect on issue identification; however, priming mitigates output interference in evidence evaluation. Primed auditors who receive a specific-incomplete memo require more additional evidence than unprimed auditors who receive the same memo. Contrary to expectations, primed auditors request less additional audit evidence than unprimed auditors when they receive specific-complete memos.

Our results are consistent with Nieschwietz et al.'s (2000) conclusion that fraud risk assessment and fraud detection are complex tasks. It appears that priming improves fraud risk assessments when auditors receive summary fraud risk memos. This is important as summary memos are commonly used in practice. Priming also mitigates some negative effects of incomplete documentation. However, it appears that priming in the presence of specific-complete memos may reduce auditors' sensitivity to fraud risk during evidence evaluation.

This study is important for several reasons. First, our study contributes to the existing auditing literature by providing evidence about how planning stage documentation affects later risk judgments and evidence evaluation. Prior fraud audit standards, SAS 53 (AICPA 1988) and SAS 82 (AICPA 1997), focused on a typical list of fraud risk factors that, in practice, were usually compiled in a checklist that individual auditors completed (Shelton et al. 2001; AICPA 2003). SAS 99, however, introduces a new audit procedure, a brainstorming session, that must

be performed on every engagement and cannot be readily reduced to a checklist or form. Our study shows that how auditors document the results of the brainstorming session affects subsequent performance of the audit. Second, past research focuses on auditors' fraud risk judgments in the planning stage of the audit, and much of this research was performed under previous audit standards (Pincus 1989; Hackenbrack 1992; Reckers and Schultz 1993; Jamal et al. 1995; Hoffman and Patton 1997; Zimbelman 1997; Braun 2000; Nieschwietz et al. 2000; Knapp and Knapp 2001; Glover et al. 2003; Asare and Wright 2004). Only three studies investigate auditors' judgments under SAS 99 (Wilks and Zimbelman 2004; Hoffman and Zimbelman 2006; Carpenter 2007) and none of this previous work examines evidence evaluation. However, many alleged audit failures involve failures in evidence evaluation (Levitt 1998; Erickson et al. 2000). Our study complements this prior research by showing that the initial fraud-related planning efforts and subsequent priming auditors about these planning efforts both affect auditors' fraud risk judgments and evidence evaluation. Third, recent PCAOB inspection reports (e.g., PCAOB 2007) suggest that some audit teams' documentation levels and their subsequent evidence evaluation and audit testing have failed to meet the SAS 99 and AS 3 standards. Our study experimentally examines the impact of this issue by considering how auditors' documentation of their planning efforts and how priming auditors about fraud risks affects their subsequent fraud risk judgments and evidence evaluation decisions. We find that more specific documentation does not always have the intended positive effect on evidence evaluation. Thus, this study's findings should inform standard-setters as they reconsider the professional guidance on auditors' consideration of fraud (PCAOB 2004, 2007; Hogan et al. 2006).

The remainder of the paper is organized as follows. Section II describes the background and hypotheses development. Sections III and IV provide the methods and results of the study, respectively. Section V concludes the paper.

## **II. BACKGROUND AND HYPOTHESES DEVELOPMENT**

### **Overview of SAS 99**

The Auditing Standards Board issued SAS 99 because new guidance was needed to improve the likelihood that auditors would detect fraudulent financial reporting (AICPA 2003). Standard setters define fraud as “an intentional act that results in a material misstatement in financial statements that are the subject of an audit” (AICPA 2002, 5). Auditors are responsible “to plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error *or fraud* (emphasis added)” (AICPA 2002, 3). This standard has been accepted by the PCAOB and thus poses requirements for auditors under its standards (PCAOB 2007, AU 316).

SAS 99 provides more structure around auditors’ consideration of fraud than did either of the previous fraud standards, SAS 53 and SAS 82. In essence, SAS 99 requires auditors to consider during planning how the issuer’s financial statements might be susceptible to material misstatement due to fraud and how management could perpetrate and conceal fraudulent financial reporting. Audits must include a brainstorming session during planning that reinforces the concept that detection of fraud is an essential element of the audit (AICPA 2002, PCAOB 2007). Auditors must document the risks identified during this brainstorming session and respond with modifications to the audit plan that address the identified risks. This includes changes to the audit program and appropriate skepticism during evidence evaluation.

Fraud risk assessment and fraud detection are complex tasks and auditors have had difficulty implementing previous fraud standards (Nieschwietz et al. 2000). Recent evidence suggests that auditors also have had difficulty implementing SAS No. 99. The PCAOB has expressed concerns about the mechanical implementation of the standard, and PCAOB inspection teams have observed instances of auditors providing insufficient documentation of identified fraud risks and failing to respond appropriately to identified fraud risk factors that warranted further fraud risk consideration (PCAOB 2007). In response, the PCAOB calls for detailed documentation of the results of performing fraud-related audit procedures, beyond checking off items on checklists and standard audit procedures.

### **Planning specificity**

To examine the effect of fraud planning documentation on audit evidence evaluation we manipulate the content of the fraud risk memo. SAS 99 requires the identification of specific fraud risks in addition to an overall fraud risk assessment at the planning stage. Documentation of these fraud risks provides a decision aid that facilitates subsequent retrieval of the results from the brainstorming session (Nelson 2007). Creating a summarized memo, in which risks are discussed only in general terms, places a larger burden on the auditor either to recall the risks discussed or to generate the risks by re-evaluating the client's situation than would a more specific memo. Our review of fraud risk memos from several national accounting firms provides anecdotal evidence that these firms commonly use a summarized memo. Providing more specific fraud risk memos that detail the risks identified during planning will reinforce the presence of the risks documented. This reinforcement will affect which risks are recalled later during evidence evaluation. People judge likelihoods by the ease with which they can recall exemplars (Kahneman and Tversky 1973), so receiving more specific memos should ease recall

of identified fraud risks and make these fraud risks more salient. Indeed, Zimbelman (1997) finds that analyzing fraud risk factors at a lower level of aggregation, rather than holistically, increases auditors' sensitivity to the risk of fraud.

Documenting the specific fraud risks in the fraud risk memo during the planning stage is expected to reinforce the important fraud risks discussed during the brainstorming meeting. Consequently, a more specific fraud risk memo is expected to increase the availability and, in turn, the salience of the identified fraud risks when evidence evaluation is performed at a later date. Consideration of these specific fraud risks should result in higher final fraud risk assessments than will consideration of a summarized fraud risk memo. Stated formally:

**H1:** Auditors' fraud risk assessments in the specific fraud risk memo conditions will be higher than auditors' fraud risk assessments in the summary memo condition.

### **Fraud Risk Priming**

There is concern that auditors are insufficiently skeptical when evaluating evidence (Johnson et al. 1991; Levitt 1998; Nieschwietz et al. 2000; Erickson et al. 2000; PCAOB 2004; Hogan et al. 2006; Nelson 2007). Given the complexity, numerous stimuli, and many seemingly conflicting objectives related to auditors' fraud risk assessment and detection, Nieschwietz et al. (2000) suggest that a principle way to improve auditors' performance might be to focus auditors' attention on the specific fraud-related tasks. They refer to Knapp and Knapp's (2000) finding that auditors, who are given explicit instructions that the purpose of performing preliminary analytics is to assess fraud risk, exhibit superior performance over auditors not given explicit instructions. Similarly, Johnson et al. (1991) and Johnson et al. (2001) find that partners performing a concurring partner review are more effective in uncovering fraud when they employ a fraud frame in evidence evaluation. They suggest that such a frame can be derived from experience or may be induced by priming.

To determine whether a fraud mindset can be encouraged during evidence evaluation, we examine the effect of priming auditors to consider the outcome of the fraud brainstorming session. In the priming condition, auditors are instructed to recall the important fraud risks identified during audit planning before beginning evidence evaluation. We expect that priming will make auditors explicitly consider the fraud risks identified during planning as they evaluate evidence and we expect priming to shift their frame of reference from completing the audit program steps to fraud identification (i.e., from a compliance to a fraud mindset).

The effect of priming will likely depend on auditors' fraud risk memo condition since this memo, which is available in the workpaper file, summarizes the results of the fraud brainstorming session. We expect the largest effect on fraud risk assessment to occur in the summarized memo condition. This condition does not provide auditors with the specific risks identified in the brainstorming session so that when primed, these auditors will have to actively think about the risks discussed during the brainstorming session. This deeper processing will reinforce the possibility of fraud (Asare and Wright 2004) and should result in higher fraud risk assessments for primed auditors than for unprimed auditors in the summary memo condition. In the specific memo conditions, priming should also make auditors more alert to fraud. But we expect that these auditors will be less likely to (or will work less hard to) review their recall of the brainstorming session than will auditors in the summarized memo condition; instead we expect they will rely on the specific risks summarized in the memo. Any increase in the fraud risk assessment in these conditions over assessments in the similar no priming conditions will be due to the increased salience of the fraud risks listed in the specific fraud risk memos. H1 and H2 are summarized in Figure 1. Stated formally:

**H2:** Auditors who are primed will assess fraud risk higher than will auditors who are not primed and this effect will be more pronounced in the summarized memo condition than in the specific memo conditions.

### **Interference**

A difficulty in attempting to identify specific fraud risks is that there is no assurance that the resulting list is complete. Therefore, while documenting specific rather than summarized fraud risks should increase fraud risk assessment, the impact of the form of the fraud risk memo on subsequent evidence evaluation is less clear.

In the absence of priming, prior research suggests that receipt of specific-incomplete fraud risk memos will cause auditors to fail to recall the items discussed but not documented during planning due to output interference (e.g., Frederick 1991; Bedard and Biggs 1991; Anderson et al. 1992; Heiman-Hoffman et al. 1995; Asare and Wright 2004). Output interference occurs when providing part of a list or category impedes recall of the remaining items from the list or category (Hoch 1984). Psychology research demonstrates that output interference also affects judgment (Johnson et al. 2007) and belief revision (Davies 1998). Providing auditors with a fraud risk memo that contains a specific but incomplete list of fraud risks after planning is expected to impede their ability to recall and consider the remaining fraud risks that were discussed during the brainstorming session. Consequently, we expect that when auditors evaluate ambiguous evidence related to risks that are missing from the specific but incomplete fraud risk memo, they will be less likely to interpret this evidence as problematic than auditors who receive a specific-complete memo because it does not relate to a risk that they recall.

Auditors who receive a summarized memo will need to work to recall or generate the specific risks discussed during planning. Research suggests that providing a decision aid, like a

specific fraud risk memo, can reduce the amount of effort required to complete a task (Ashton and Willingham 1989; Todd and Benbasat 1992). However, the decision aid can have negative consequences if it causes mechanistic processing (Ashton and Willingham 1989) or if it causes the fraud risk factors to be processed less deeply (Asare and Wright 2004). Indeed, Wilks and Zimbelman (2004) report that providing auditors with a list of fraud cues prevents auditors from reasoning strategically. Consequently, unprimed auditors in the summary memo condition will have to engage in more effortful processing than will auditors in either specific memo condition, but their recall will not be impeded by the presence of a subset of the items discussed as will be the case for the incomplete memo condition auditors. Accordingly, we expect performance in the summarized memo condition to be better than performance in the specific incomplete memo condition. Stated formally:

**H3:** Auditors who receive specific but incomplete fraud memos will identify fewer issues and require less additional evidence than will auditors who receive summarized memos and auditors who receive specific-complete fraud memos.

Importantly, we expect that priming will also affect evidence evaluation. To the extent that priming facilitates a fraud mindset, auditors should be more likely to raise a fraud concern when faced with ambiguous audit evidence (Johnson et al. 1991; Nieschwietz et al. 2000; Johnson et al. 2001). Accordingly, primed auditors will be more aware of fraud risk when they evaluate evidence and this should lead them to be more skeptical and conservative when evaluating ambiguous evidence.

Of particular interest is the effect of priming on the output interference effect associated with the specific-incomplete fraud risk memo. Priming itself can induce output interference when the priming mechanism represents an incomplete list (e.g., Libby 1985; Libby and Frederick 1990; Asare and Wright 2004). However, recent findings in psychology suggest

whether output interference obtains depends on the type of prime that is used (Bäuml and Aslan 2004). Typically, in output interference studies, people are instructed to recall the remaining items on a list using the partial list as a cue to recall the remaining items. Priming using the partial list as a retrieval cue appears to induce output interference. However, output interference is avoided when the priming encourages additional learning. In particular, Bäuml and Aslan (2004) report that when people are re-exposed to a partial list of previously learned material for purposes of additional learning, their recall of the remaining items not on the partial list is not impaired (i.e., output interference is mitigated). Accordingly, we expect our priming manipulation to mitigate the effects of output interference in the specific-incomplete fraud risk memo condition. Consequently, the effect of priming on evidence evaluation will be most pronounced on auditors who receive the specific-incomplete fraud risk memo. H3 and H4 are summarized in Figure 2. Stated formally:

**H4:** Auditors who are primed will identify more remaining issues and require more additional evidence than will the auditors who are not primed and this effect will be more pronounced in the specific-incomplete memo condition.

### **III. RESEARCH METHOD**

#### **Participants**

We examine the effects of fraud risk memo type and priming on auditors' fraud risk assessments and judgments about evidence quality (i.e., issue identification and extent of evidence required). As such, audit seniors are appropriate participants as they have experience evaluating evidence. One hundred twenty-three audit seniors with an average of 46.0 months of experience completed our experiment;<sup>2</sup> 60.2 percent are CPAs. Ninety-six percent report that

---

<sup>2</sup> One hundred twenty-six auditors started the morning session of the experiment, but three did not return for the afternoon session.

they have previously participated in a fraud brainstorming session and 17.9 percent report that they have been on an audit where management fraud was discovered.

## **Procedure**

The auditors participated while attending one of five training meetings. We conducted the experiment in two sessions within the same day for all conditions; the sessions were separated by a delay of approximately seven hours. Each session took approximately 40 minutes for a total of about 80 minutes. During the morning session, participants completed five tasks. First, participants read a case booklet that contained a description of the client, its revenue sources, and its financial statements; we adapted our case from the one used in Carpenter (2007). Second, participants listed three risks that they would like to raise during a fraud brainstorming session. Third, participants watched a nine minute video of the brainstorming session about the fraud risks related to revenue recognition; the actors discussed eight specific fraud risks during the video. Fourth, participants read an Initial Team Briefing Memo that summarized planning decisions and one of three Fraud Risk Memos, depending on the fraud risk memo condition to which participants were assigned, that summarized the risks discussed during the brainstorming video. Finally, participants assessed preliminary client business risk, inherent risk for the revenue cycle, and fraud risk for the revenue cycle.

In the afternoon session, participants received a file that contained summaries of the findings of the interim and year-end work for the revenue and receivable's cycle and copies of the Initial Team Briefing Memo and the Fraud Risk Memo. Before reviewing the summary work papers, participants in the fraud risk priming condition were asked to list the important fraud risks. The summary workpapers contained a listing of the audit procedures that had been performed and a description of the exceptions that had been found during testing. Participants

were informed that their task was to review this evidence and evaluate the findings; participants documented any issues they were still concerned about and specified the evidence they would want to collect to resolve the matter. After evaluating the evidence, participants assessed final client business risk, inherent risk for the revenue cycle, fraud risk for the revenue cycle, and assessed the need to consult with a fraud specialist. Finally, participants completed a post-experimental questionnaire that asked demographic and manipulation check questions.

### **Independent variables**

We manipulated two independent variables: fraud risk memo type and fraud risk priming. We manipulated fraud risk memo type at three levels: summary, specific-incomplete, and specific-complete. The summary memo described the general sources of risk for the company in the case materials according to the pressures, opportunities, and rationalization framework from SAS 99. In our review of memos from several large auditing firms, this was the common form of the memo used. The specific-incomplete memo contained all the language from the summary memo and, in addition, listed four of the specific fraud risks that were discussed during the brainstorming video. The specific-complete memo included everything from the specific-incomplete memo and listed the four remaining specific fraud risks (for a total of eight risks) from the brainstorming video. The Appendix contains the specific-complete fraud risk memo.

We manipulated fraud risk priming at two levels; one-half of the participants were instructed to list the important fraud risks at the beginning of the second session before beginning to evaluate the evidence collected, and the other half of the participants did not receive this instruction. Given our interest in whether priming could help mitigate output interference associated with the specific-incomplete memo, the instructions were intended to encourage

participants in the priming condition to think about the fraud risks identified on the engagement, rather than simply using the fraud risk memo as a checklist. However, as in practice, all participants had copies of the Fraud Risk Memo, as well as other documentation from the planning stage, available in their packets during the second phase of the experiment.

### **Dependent variables**

We measured three dependent variables: fraud risk assessments, misstatement issues identified, and additional evidence required. Participants' final fraud risk assessments are the dependent variable for H1 and H2. Fraud risk assessments are elicited on an 11-point scale anchored by 0 (extremely low) and 10 (extremely high). This risk assessment was elicited after participants completed the evidence evaluation task. Fraud risk assessments provide a summary measure of auditors' concerns about fraud with the client; auditing standards require fraud risk assessments, and they are the typical dependent variable used in fraud research (Nieschwietz et al. 2000). SAS 99 recognizes that the fraud risk assessment will be updated as the audit progresses.

The summary work papers included a variety of issues with different degrees of closure and ambiguity about whether misstatement was present. After reviewing the summary work papers, participants identified the issues about which they were concerned. We coded the misstatement issues from the participants' written responses and we use this as the first dependent variable for H3 and H4. The number of issues participants documented as being concerned about misstatement and requiring follow-up captures participants' sensitivity to fraud in evidence evaluation. Higher numbers of items coded as related to misstatement indicates a higher degree of concern. For all coding in this project, we developed a coding scheme and then one of the authors who was blind to experimental condition and a Ph.D. student with audit

experience who was blind to both condition and hypotheses coded participants' responses. All coding differences were mutually resolved. Participants wrote 988 issues which we coded as either related to misstatement or related to other issues. The coders agreed on 95.0 percent of the issues. Cohen's Kappa, a measure of inter-rater agreement over and above that expected by random agreement, is 0.804 and this is significantly different from zero ( $p < 0.001$ ).

In addition to identifying issues of concern, participants also were asked what additional evidence they wanted to collect in order to resolve the issue. We coded these responses and use the responses that focus on acquiring additional evidence as the second dependent variable for H3 and H4. Participants were asked to be specific, but responses ranged from identifying a question/objective to be satisfied to describing specific audit procedures including sample size. We parsed the responses so that each comment that would have resulted in unique evidence being collected was coded as a separate item. In many cases there is a one-to-one correspondence between the misstatement issue and evidence required. However, there are times when a participant identified an issue without identifying evidence and other instances where an issue generated a demand for more than one form of evidence. Participants requested 1087 evidence items which were coded as focused on the extent of evidence or focused on other items. The coders agreed on 86.6 percent of the items. Cohen's Kappa is 0.720 and this is significantly different from zero ( $p < 0.001$ ). The additional evidence required provides another dimension to assessing auditors' fraud mindset. Prior research on audit planning, including fraud-related planning often does not find an unambiguous relationship between risk assessment and audit program design.

## **IV. RESULTS**

### **Manipulation Check**

We included the delay between the morning and afternoon experimental sessions to facilitate a shift in mindset between the audit planning stage of the audit and the evidence evaluation stage. The delay represents the delay between the planning and evaluation stages of the audit. We expected this delay to reduce the salience of the risks discussed during the fraud brainstorming session and to increase the chance that participants had to rely on the fraud risk memo as documentation of what was discussed. To determine whether the delay was effective at reducing the salience of the brainstorming discussion, we also had 23 auditors complete the experimental task without a delay; all other experimental procedures were the same as those applied to the treatment conditions. Members of this control group were given a complete fraud risk memo and were not primed to recall fraud risks before evidence evaluation. Consistent with the delay reducing the salience of the brainstorming session, the control group more accurately recalled the content of the fraud risk memo on a 14 question quiz included in the post-experimental questionnaire than did auditors in the unprimed, specific complete memo condition (12.048 vs. 10.463; two-sided  $p = 0.010$ ).

### **Hypothesis 1**

Hypothesis 1 predicts that for auditors who are not primed, fraud risk assessments will be higher in the specific fraud risk memo conditions than in the summary memo condition. To examine H1, we compute an ANCOVA with final fraud risk assessment as the dependent variable, fraud risk memo condition and fraud priming as the independent variables, and initial fraud risk assessments and CPA status as covariates.<sup>3</sup> Panel A of Table 1 contains the ANCOVA table, Panel B contains the adjusted means and Panel C contains the results from our planned comparison tests. The hypotheses predict specific patterns of cell means, so we use contrasts as

---

<sup>3</sup> Despite our use of random assignment of participants to condition, we have significant differences in the proportion of participants who are CPAs across experimental condition. Consequently, we include CPA status as a covariate in all of our analysis.

the primary tests of the hypotheses (Buckless and Ravenscroft 1990). In Panel C of Table 1 we show that the mean fraud risk assessment in the summary memo condition (7.527) is less than the mean of the fraud risk assessments in the specific-complete and specific-incomplete memo conditions (mean 8.367; one-tailed  $p = 0.020$ ). Documenting specific risks in the fraud risk memo results in auditors possessing a heightened fraud risk mindset in evidence evaluation.

## **Hypothesis 2**

In H2, we predict that fraud memo condition and fraud priming will interact such that primed auditors will assess fraud risk higher than will auditors who are not primed and that this effect will be more pronounced in the summary memo condition than in the specific memo conditions. Table 1, Panel B contains the means of auditors' fraud risk assessments after priming and Table 1, Panel C contains the planned comparison for the formal test of H2. The test of H2 is significant ( $F = 6.673$ , one-tailed  $p = 0.006$ ). However, this result must be interpreted with caution. Primed auditors in the summary memo condition do assess higher fraud risk (8.485) than do unprimed auditors in the summary memo condition (7.527; one-tailed  $p = 0.019$ ) and this is consistent with H2. However, the pattern of results for the specific memo conditions is not consistent with our expectations. Primed auditors in the specific memo conditions do not assess fraud risk higher than unprimed auditors in the specific memo conditions.<sup>4</sup> Thus, H2 is only partly supported. We return to this unexpected result in the Additional Analysis section of paper.

## **Hypothesis 3**

---

<sup>4</sup> Primed auditors in the specific-incomplete memo condition do not assess fraud risk (8.161) differently than unprimed auditors who receive specific-incomplete memos (8.455; two-tailed  $p = 0.530$ ). Primed auditors in the specific-complete memo condition do not assess fraud risk (7.590) differently than unprimed auditors who receive specific-complete memos (8.279; two-tailed  $p = 0.130$ ).

While specific fraud risk documentation increases auditors' fraud risk assessments (H1), documenting fraud risks may interfere with evidence evaluation to the extent that this documentation is incomplete. In H3, we predict that unprimed auditors in the specific-incomplete memo condition will experience an interference effect that will result in auditors identifying fewer issues and requesting less additional evidence than auditors in the summary and specific-complete memo conditions. To examine H3, we compute an ANCOVA for each of the dependent variables using fraud risk memo condition and fraud priming as the independent variables and CPA status as a covariate. Table 2 contains the results for the issue identification dependent variable; Table 3 contains the results for the additional evidence dependent variable. Panel B of Table 2 presents the means for the issue identification dependent variable. In Panel C of Table 2 we show that participants in the specific-incomplete memo condition document fewer remaining issues (5.186) than do auditors in the specific-complete memo condition and the summary memo condition (mean 5.968), however, this difference is not quite significant (one-tailed  $p = 0.128$ ). We note that auditors in the summary memo condition document more issues (6.363) than do auditors in the specific-incomplete memo condition (5.186) and this difference is significant (one-tailed  $p = 0.068$ ). Auditors in the specific-complete memo condition document more issues (5.572) than do auditors in the specific-incomplete memo condition (5.186), but this difference is not significant (one-tailed  $p = 0.311$ ).

Panel B of Table 3 presents the means for the evidence dependent variable. In Panel C of Table 3 we show that auditors in the specific-incomplete memo condition require fewer pieces of evidence (1.439) than do auditors in the specific-complete and summary memo conditions (mean 2.532; one-tailed  $p = 0.004$ ). This result for additional evidence required supports H3. Overall, the evidence from both dependent variables partially supports H3. While a specific fraud risk

memo leads to higher fraud risk assessments, to the extent that the memo presents an incomplete list of specific fraud risks, the memo will marginally interfere with the identification of issues and will strongly interfere with the evaluation of evidence that relates to the complete set of fraud risks.

#### **Hypothesis 4**

In H4, we predict that primed auditors will identify more remaining issues and require more additional evidence than will auditors who are not primed, and that because of the effect of priming on output interference, this effect will be more pronounced in the specific-incomplete memo condition than in the other two conditions. Panel B of Tables 2 and 3 presents the means for the issue identification and evidence variables, respectively. In Panel C of Table 2 we present the results of the test of the planned comparison for issue identification. The test of H4 is not significant for remaining issues identified ( $F = 0.821$ , one-tailed  $p = 0.183$ ). Primed auditors in the specific-incomplete memo condition do not identify significantly more issues (5.928) than do those who were not primed (5.186; one-tailed  $p = 0.167$ ). Additionally, primed auditors in the summary memo condition do not identify significantly more issues (6.575) than do unprimed auditors in this condition (6.363; one-tailed  $p = 0.390$ ). Finally, primed auditors in the specific-complete memo condition do not identify more issues (5.158) than do unprimed auditors (5.572; two-tailed  $p = 0.574$ ). Overall, priming does not appear to significantly improve issue identification judgments.

Panel C of Table 3 presents the planned comparison for the formal tests of H4 for the additional evidence dependent variable; Panel B of Table 3 presents the associated means. This test of H4 is significant for additional evidence required ( $F = 6.307$ , one-tailed  $p = 0.006$ ), however this interaction must be interpreted with caution. As expected, primed auditors in the

specific-incomplete memo condition require significantly more evidence (2.408) than those who were not primed (1.439; one-tailed  $p = 0.016$ ). However, primed auditors in the summary memo condition do not require significantly more evidence (2.496) than do unprimed auditors in this condition (2.298; one-tailed  $p = 0.328$ ). Finally, contrary to expectations, primed auditors in the specific-complete memo condition require significantly less evidence (1.779) than do unprimed auditors (2.767; two-tailed  $p = 0.023$ ). This result suggests that for evidence decisions, priming improves performance only when specific-incomplete memos are used. Priming appears to hinder performance when specific-complete memos are used. Overall, these results suggest that priming can mitigate the interference effect associated with incomplete documentation, but that priming has context-specific effects on evidence evaluation decisions.

### **Additional Analysis**

Contrary to expectations, priming in the specific-complete memo condition appears to reduce, rather than enhance, auditors' sensitivity to fraud in evidence evaluation. We examined debriefing questions to understand this result and, in particular, to determine whether the auditors in this condition were less concerned about fraud. One debriefing question asked participants to indicate on an 11-point scale how much attention they gave to the risk of misstatement due to error (0) versus fraud (10). The mean response for primed auditors in the specific-complete memo condition (6.821) is not significantly different than the response for unprimed auditors in the same memo condition (6.415; two-tailed  $p = 0.495$ ).<sup>5</sup> The results do not support an alternative explanation of less attention to fraud among the primed, specific-complete memo

---

<sup>5</sup> Additionally, primed auditors in the specific-complete memo condition do not report significantly different attention to fraud than primed auditors in the summary memo condition (6.040; two-tailed  $p = 0.275$ ) and they actually report significantly higher attention to fraud than do primed auditors in the specific-incomplete memo condition (5.513; two-tailed  $p = 0.057$ ).

condition participants than other participants. Instead, primed specific complete memo condition participants appear to be at least as concerned about fraud as other participants.

A series of 14 debriefing questions tested recall accuracy of the fraud risks documented in the fraud risk memo. Primed auditors in the specific-complete memo condition exhibited significantly higher recall accuracy (11.720) than the unprimed auditors in the same memo condition (10.463; two-tailed  $p = 0.040$ ). Controlling for the information differences between fraud risk memos, primed auditors in the specific-complete memo condition also had higher recall accuracy than primed auditors in the summary memo condition (10.682; two-tailed  $p = 0.093$ ), but not primed auditors in the specific-incomplete memo condition (11.738; two-tailed  $p = 0.977$ ). These results suggest that auditors in the primed specific-complete memo condition were more aware of the fraud risk factors than their unprimed counterparts. Additionally, primed specific-complete memo condition auditors recalled fraud risk factors as well as auditors in other conditions. In combination, this evidence does not support a view that these participants were unaware of fraud risk factors during evidence evaluation. However, rather than priming increasing auditors' concern about fraud during evidence evaluation, the priming may have given comfort that the initial planning efforts as documented in the fraud risk memo adequately responded to all fraud risks.

## **V. CONCLUSION**

We have two goals with this study. First, we examine how the specificity of the fraud risk memo influences auditors' subsequent fraud risk assessments, issue identification, and collection of additional evidence. Second, we examine whether priming auditors with the fraud risk memo before they begin evidence evaluation influences auditors' subsequent judgments.

Results from our experiment suggest that, consistent with our expectations, fraud risk memo type and fraud risk priming interact to determine the effect on fraud risk assessments. Specifically, in the absence of priming we find that auditors who receive fraud risk memos with specific fraud risks listed assess final fraud risk higher than auditors who receive summary memos. We find that primed auditors in the summary memo condition assess fraud risk higher than unprimed auditors in the summary memo condition, but there is no effect of priming on fraud risk assessments of auditors in the specific-incomplete or specific-complete memo conditions. Overall, we find that priming improves fraud risk judgments in the memo condition frequently used in practice.

We also find evidence of an interaction between fraud risk memo type and fraud risk priming on evidence evaluation decisions. Specifically, unprimed auditors show evidence of an output interference effect when evaluating evidence such that auditors in the specific-incomplete memo condition require less additional evidence than do summary or specific-complete memo condition auditors. Priming significantly mitigates the effect of output interference on evidence evaluation decisions. However, we document that primed specific-complete memo condition auditors require less evidence than unprimed auditors in the same condition. This is true despite evidence that these participants were focused on fraud detection and had better recall of the documented fraud risks than other participants. Future research will be necessary to determine why this obtained.

Our results are important for several reasons. First, the PCAOB has expressed concern that auditors' mindsets are not sufficiently fraud oriented (PCAOB 2004). In recent inspection reports, the PCAOB suggested that auditors lacked specific documentation needed for effective procedures to be performed to investigate fraud. We find that more specific documentation does

not always have the expected positive effect on audit performance. Thus, this study's findings should inform standard-setters as they reconsider the professional guidance on auditors' consideration of fraud (PCAOB 2004, 2007; Hogan et al. 2006).

Second, most prior fraud research focuses on fraud risk assessment in the audit's planning stage (Nieschwietz et al. 2000). However, SAS 99 emphasizes the investigation of fraud throughout the audit process. This is a relatively recent change for auditors, and little is known about how the emphasis on fraud in audit planning influences the subsequent conduct of the audit. Our study therefore answers the call for research in this area (Nieschwietz et al. 2000), and our study contributes to this literature by suggesting that fraud-related planning efforts have a significant effect on auditors' subsequent fraud risk judgments and evidence evaluation. Third, our study contributes to the accounting and auditing literature by providing evidence about whether priming auditors with the fraud risks documented during planning impacts subsequent evidence evaluation decisions and we find that priming has some impact on these decisions. Thus, the results of this study are of interest to auditors, standard setters, and academic researchers.

## APPENDIX<sup>6</sup>

### Fraud Risk Memo Manipulation

*Calico Corporation  
Fraud Risk Memo  
For December 31, 20XX Audit*

**Purpose of meeting:** To highlight the importance of professional skepticism and brainstorm about the susceptibility of the client's financial statements to material misstatements due to fraud.

During the meeting members of the engagement team were reminded of the importance of professional skepticism, and were reminded to recognize that fraud is possible on every audit.

**Current-year fraud risks identified during the brainstorming meeting:** Summarized in terms of *Incentives/Pressures*, *Opportunities*, and *Attitude/Rationalization*.

*Incentives/Pressures:* Management faces pressure to enhance the value of the company through its performance and operating results given the company's loss this year and its struggle to restructure in the face of significant competition. The company also faces pressure to meet certain performance measures to satisfy the investment community. Additionally, management is compensated through a combination of salary, bonus based on profit, and stock options. This gives management incentive to improve profitability and maintain share price.

*Opportunities:* Although we have not noticed any behavior indicative of rationalization, if management decided to perpetrate fraud, there is sufficient opportunity since there are limited controls over management override. Restructuring also creates some uncertainty over the company's accounting systems.

*Attitude/Rationalization:* Per discussions with management coupled with our knowledge of the client, management does not seem to have personal financial distress or an overwhelming need to improve their personal financial position. However, members of management seem more aggressive in their accounting choices in recent months. Therefore, we conclude that revenue recognition is a high fraud risk area.

#### **Specific fraud risks in the revenue area include:**

- *Fictitious sales* – the varied and complex terms of many of Calico's sales arrangements provide opportunities for creating fictitious revenues.
- *Allocation of revenues for bundled arrangements* – Calico often sells equipment, service, supplies, and financing in a bundled arrangement. Customers negotiate a single

---

<sup>6</sup> This is the specific-complete version of the fraud risk memo. Participants in the specific-incomplete condition received only the first four specific fraud risks; participants in the summarized memo condition received none of the specific fraud risks.

price for this arrangement, so there is an opportunity to manipulate how revenue is allocated across each deliverable element.

- ***Timing of revenues for bundled arrangements*** – revenue is recognized at different points in time for the various elements in the bundled arrangements. There is an opportunity to manipulate the timing of when these revenue streams are recognized.
- ***Topside adjusting entries*** – given concerns that there are limited controls over management override.
- ***Classification of equipment-lease types*** – in addition to sales of equipment on credit, Calico enters into both sales-type lease contracts and operating lease contracts with customers. Lease classification and estimates inherent in sales-type leases provide opportunities for premature revenue recognition.
- ***Sales cutoff*** – complex nature of many sales arrangements provides opportunities to recognize sales before revenue should be earned and accelerate 2006 sales into 2005 by recognizing revenue before contracts are fully executed.
- ***Sales returns and allowances*** – returns and allowances are the most common form of revenue adjustment. Failure to record returns overstates net sales and supports inadequate allowance for future returns.
- ***Bad debt expense and allowance for doubtful accounts*** – given Calico's current difficulties, any understatement of the allowance for doubtful accounts would result in net income being overstated.

## REFERENCES

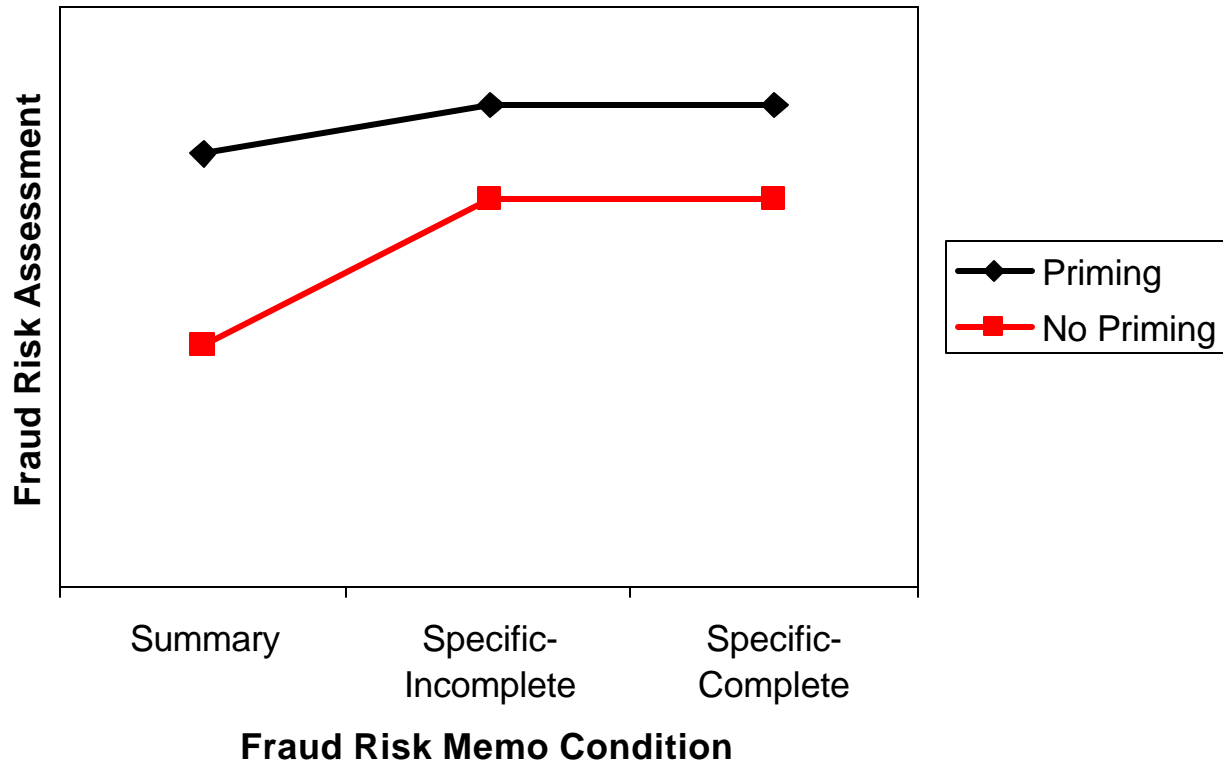
- Anderson, J. C., S. E. Kaplan, and P. M. J. Reckers. 1992. The effects of output interference on analytical Procedures. *Auditing: A Journal of Practice & Theory* 11 (2): 1-13.
- American Institute of Certified Public Accountants (AICPA). 1988. *The Auditors Responsibility to Detect and Report Errors and Irregularities*, Statement on Auditing Standards No. 53. New York, NY: AICPA.
- \_\_\_\_\_. 1997. *Consideration of Fraud in a Financial Statement Audit*, Statement on Auditing Standards No. 82. New York, NY: AICPA.
- \_\_\_\_\_. 2002. *Consideration of Fraud in a Financial Statement Audit*, Statement on Auditing Standards No. 99. New York, NY: AICPA.
- \_\_\_\_\_. 2003. *AICPA Practice Aid Series, Fraud Detection in a GAAS Audit: SAS No. 99 Implementation Guide*. New York, NY: AICPA.
- Asare, S., and A. Wright. 2004. The Effectiveness of Alternative Risk Assessment and Program Planning Tools in a Fraud Setting. *Contemporary Accounting Research* 21 (2): 325-352.
- Ashton, R. H., and J. J. Willingham. 1989. Using and evaluating audit decision aids. In R. P. Srivastava and J. E. Rebele (Eds.), *Auditing Symposium IX: Proceedings of the 1988 Touche Ross/University of Kansas Symposium on Auditing Problems*, Lawrence, KS: University of Kansas: 1-25.
- Bäumel, K.H. and A. Aslan. 2004. Part-list cuing as instructed retrieval inhibition. *Memory and Cognition* 32 (4): 610-617.
- Bedard, J. C., and S. F. Biggs. 1991. Pattern recognition, hypotheses generation, and auditor performance in an analytical task. *The Accounting Review* 66 (3): 622-42.
- Braun, R. 2000. The Effect of Time Pressure on Auditor Attention to Qualitative Aspects of Misstatements Indicative of Potential Fraudulent Financial Reporting. *Accounting, Organizations and Society* 25: 243-259.
- Buckless, F. A. and S. P. Ravenscroft. 1990. Contrast coding: A refinement of ANOVA in behavioral analysis. *The Accounting Review* 65: 933-45.
- Carmichael, D. R. 2003. Professionalism is Primary. Remarks delivered at AICPA National Conference, Washington D.C., December 12, 2003.
- Carpenter, T. 2007. Audit Team Brainstorming, Fraud Risk Identification, and Fraud Risk Assessment: Implications of SAS No. 99. Forthcoming in *The Accounting Review*.

- Davies, M. F. 1998. Dogmatism and Belief Formation: Output Interference in the Processing of Supporting and Contradictory Cognitions. *Journal of Personality and Social Psychology* 75 (2): 456-466.
- Elliott, R. 2002. Twenty-First Century Assurance. *Auditing: A Journal of Practice & Theory* 21 (1): 139-146.
- Erickson, M., B. Mayhew, and W. Felix, Jr. 2000. Why do audits fail? Lessons from Lincoln Savings and Loan. *Journal of Accounting Research* 38: 165-94.
- Frederick, D. M. 1991. Auditors' Representation and Retrieval of Internal Control Knowledge. *The Accounting Review* 66(2): 240-258.
- Glass Lewis and Co. 2005. Control deficiencies – Finding financial impurities analysis of the 2004 and early 2005 of deficiency disclosures. *Control Deficiencies Trend Alert* (June 2004). Available at: <http://www.glc.com>.
- Glover, S., D. Prawitt, J. Schultz, and M. Zimbelman. 2003. A Test of Changes in Auditors' Fraud-Related Planning Judgments since the Issuance of SAS No. 82. *Auditing: A Journal of Practice & Theory* 22 (2): 237-251.
- Hackenbrack, K. 1992. Implications of seemingly irrelevant evidence in audit judgment. *Journal of Accounting Research* 30 (1): 126-136.
- Heiman-Hoffman, V., D. Moser, and J. Joseph 1995. The Impact of an Auditor's Initial Hypothesis on Subsequent Performance at Identifying Actual Errors. *Contemporary Accounting Research* 11 (2): 763-779.
- Hoch, S. 1984. Availability and interference in predictive judgment. *Journal of Experimental Psychology* 10 (4): 649-662.
- Hoffman, V., and J. Patton. 1997. Accountability, the Dilution Effect, and Conservatism in Auditors' Fraud Judgments. *Journal of Accounting Research* 35 (Autumn): 227-237.
- Hoffman, V., and M. Zimbelman. 2006. The Nature of Audit Plans in Response to Fraud Risk: Strategic Reasoning and Brainstorming in Audit Planning. Working Paper, University of Pittsburgh.
- Hogan, C. E., Z. Rezaee, R. A. Riley, and U. Velury. 2006. Financial Statement Fraud: Insights from the Academic Literature. Working Paper, Michigan State University.
- Jamal, K., P. Johnson, and R. Berryman. 1995. Detecting Framing Effects in Financial Statements. *Contemporary Accounting Research* 12 (1): 85-105.

- Johnson, E. J., F. Häubl, and A. Keinan. 2007. Aspects of Endowment: A Query of Value Construction. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 33 (3): 461-474.
- Johnson, P., K. Jamal, and R. Berryman. 1991. Effects of Framing on Audit Decisions. *Organizational Behavior & Human Decision Processes* 50 (1): 75-105.
- Johnson, P., S. Grazioli, K. Jamal, and P. Berryman. 2001. Detecting deception: Adversarial problem solving in a low base-rate world. *Cognitive Science* 25 (3): 355-392.
- Kahneman, D. and A. Tversky. 1973. On the psychology of prediction. *Psychological Review* 80: 237-251.
- Knapp, C. and M. Knapp. 2001. The Effects of Experience and Explicit Fraud Risk Assessment in Detecting Fraud with Analytical Procedures. *Accounting, Organizations and Society* 26: 25-37.
- Levitt, A. 1998. The numbers game. Remarks of the Chairman Arthur Levitt at the N.Y.U. Center for Law and Business New York, NY. Available at <http://www.sec.gov/news/speech/speecharchive/1998speech.shtml>
- Libby, R. 1985. Availability and the generation of hypotheses in analytical review. *Journal of Accounting Research* 23 (2): 648-667.
- Libby, R. and D. Frederick. 1990. Experience and the ability to explain audit findings. *Journal of Accounting Research* 28(2): 348-367.
- Nelson, M. 2007. A Model and Literature Review of Professional Skepticism in Auditing. Working Paper, Cornell University.
- Nieschwietz, R., J. Schultz, and M. Zimbelman. 2000. Empirical Research on External Auditors' Detection of Financial Statement Fraud. *Journal of Accounting Literature* 19: 190-246.
- Pincus, K. 1989. The Efficacy of a Red Flags Questionnaire for Assessing the Possibility of Fraud. *Accounting, Organizations and Society* 14 (1/2): 153-164.
- Public Company Accounting Oversight Board (PCAOB). 2004. PCAOB Standing Advisory Group Meeting: Meeting Agenda (September 8-9). Available at: [http://pcaobus.org/News\\_and\\_Events/Events/2004/09-08-09.aspx](http://pcaobus.org/News_and_Events/Events/2004/09-08-09.aspx).
- PCAOB. 2007. Observations on auditors' implementation of PCAOB standards relating to auditors' responsibilities with respect to fraud. Available at: [http://pcaob.org/inspections/other/01-22\\_release\\_2007-001.pdf](http://pcaob.org/inspections/other/01-22_release_2007-001.pdf)

- Reckers, P. and J. Schultz 1993. The Effects of Fraud Signals, Evidence Order, and Group Assisted Counsel on Independent Auditor Judgment. *Behavioral Research in Accounting* 5: 125-144.
- Todd, P., and I. Bamasat. 1992. The use of information in decision making: An experimental investigation of the impact of computer-based decision aids. *MIS Quarterly* 16 (3): 373-393.
- Wilks, T., and M. Zimbelman. 2004. Decomposition of Fraud-Risk Assessments and Auditors' Sensitivity to Fraud Cues, *Contemporary Accounting Research* 21 (3) (Fall): 719-745.
- Zimbelman, M. 1997. The Effects of SAS No. 82 on Auditors' Attention to Fraud Risk Factors and Audit Planning Decisions. *Journal of Accounting Research* 35 (Supplement): 75-97.

**FIGURE 1**  
Hypotheses 1 and 2

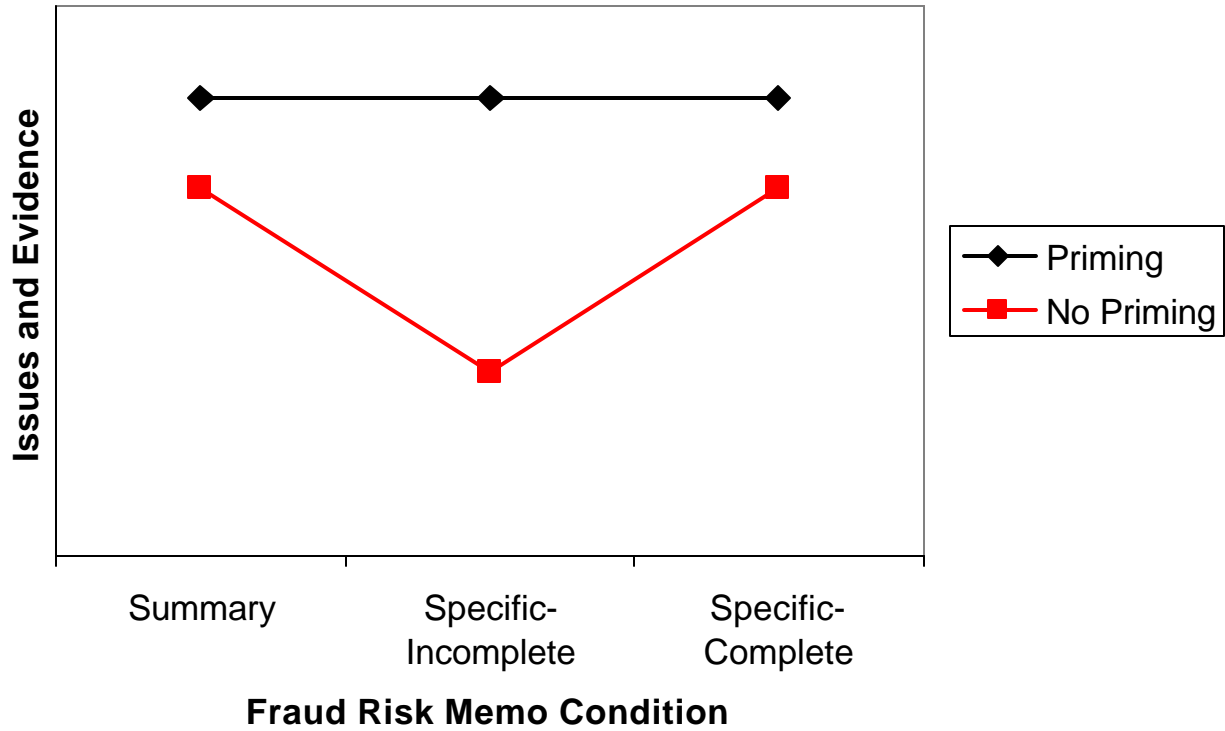


*Fraud risk priming* is operationalized at two levels between participants. Priming participants were instructed to list the important fraud risks at the beginning of the second session before beginning to evaluate the evidence collected; the no-priming participants did not receive this instruction.

*Fraud risk memo* is operationalized at three levels between participants. Participants in the summary memo condition received a memo that described the general sources of risk present. Participants in the specific -incomplete (specific -complete) memo condition received this information and four (all eight) of the specific fraud risks that were discussed during the brainstorming video.

The *dependent variable* is the final fraud risk assessment. Participants assess this risk on an 11-point scale anchored by 0 (extremely low) and 10 (extremely high).

**FIGURE 2**  
Hypotheses 3 and 4



See Figure 1 for descriptions of the fraud risk priming and fraud risk memo variables. The *dependent variable* is the number of issues participants documented as being concerned about misstatement and the number of items focused on the extent of evidence required.

**TABLE 1**  
**Fraud Risk Assessments**

**Panel A: ANCOVA Table**

Source of Variation	df	MS	F	p-value
Fraud risk memo type	2	1.511	0.727	0.486
Fraud risk priming	1	0.002	0.001	0.975
Fraud risk memo type x Fraud risk priming	2	7.407	3.562	0.032
Initial fraud risk assessment	1	60.781	29.233	0.000
CPA	1	0.549	0.264	0.608
Error	112	2.079		

**Panel B: Fraud Risk Assessments: Adjusted LS Mean (SE) [n] Cell**

	Fraud Risk Memo:		
	Summary	Specific-Incomplete	Specific-Complete
<b>No Fraud Risk Priming</b>	7.527 (0.327) [20] A	8.455 (0.351) [17] B	8.279 (0.324) [20] C
<b>Fraud Risk Priming</b>	8.485 (0.323) [20] D	8.161 (0.308) [22] E	7.590 (0.322) [21] F

**Panel C: Tests of H1 and H2**

Planned Contrasts	$F_{1,112}$	$p > F$ (one-tailed)
<b>H1:</b> $A < (B + C)/2$	4.306	0.020
<b>H2:</b> $(D - A) > [(E - B) + (F - C)]/2$	6.673	0.006

See Figure 1 for descriptions of the independent variables.

The *dependent variable* is the final fraud risk assessment. Participants assess this risk on an 11-point scale anchored by 0 (extremely low) and 10 (extremely high).

**TABLE 2**  
**Issue Identification**

**Panel A: ANCOVA Table**

<b>Source of Variation</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>p-value</b>
Fraud risk memo type	2	13.936	2.407	0.095
Fraud risk priming	1	0.991	0.171	0.680
Fraud risk memo type x Fraud risk priming	2	3.461	0.598	0.552
CPA	1	16.438	2.839	0.095
Error	116	5.790		

**Panel B: Issue Identification – Adjusted LS Mean (SE) [n] Cell**

	<b>Fraud Risk Memo:</b>		
	<b>Summary</b>	<b>Specific-Incomplete</b>	<b>Specific-Complete</b>
<b>No Fraud Risk Priming</b>	6.363 (0.539) [20] A	5.186 (0.570) [18] B	5.572 (0.528) [21] C
<b>Fraud Risk Priming</b>	6.575 (0.540) [20] D	5.928 (0.513) [22] E	5.158 (0.517) [22] F

**Panel C: Tests of H3 and H4**

<b>Planned Contrasts</b>	<b>F<sub>1,116</sub></b>	<b>p &gt; F (one-tailed)</b>
<b>H3:</b> $B < (A + C)/2$	1.306	0.128
<b>H4:</b> $(E - B) > [(D - A) + (F - C)]/2$	0.821	0.183

See Figure 1 for a description of the independent variables.

The *dependent variable* is the number of issues participants documented as being concerned about misstatement.

**TABLE 3**  
**Evidence Required**

**Panel A: ANCOVA Table**

<b>Source of Variation</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>p-value</b>
Fraud risk memo type	2	2.397	1.216	0.300
Fraud risk priming	1	0.108	0.055	0.816
Fraud risk memo type x Fraud risk priming	2	10.066	5.108	0.007
CPA	1	0.055	0.028	0.867
Error	116	1.971		

**Panel B: Evidence required – Adjusted LS Mean (SE) [n] Cell**

	<b>Fraud Risk Memo:</b>		
	<b>Summary</b>	<b>Specific-Incomplete</b>	<b>Specific-Complete</b>
<b>No Fraud Risk Priming</b>	2.298 (0.314) [20] A	1.439 (0.332) [18] B	2.767 (0.308) [21] C
<b>Fraud Risk Priming</b>	2.496 (0.315) [20] D	2.408 (0.299) [22] E	1.779 (0.302) [22] F

**Panel C: Tests of H3 and H4**

<b>Planned Contrasts</b>	<b>F<sub>1,116</sub></b>	<b>p &gt; F (one-tailed)</b>
<b>H3:</b> $B < (A + C)/2$	7.505	0.004
<b>H4:</b> $(E - B) > [(D - A) + (F - C)]/2$	6.307	0.006

See Figure 1 for a description of the independent variables.

The *dependent variable* is the number of items focused on the extent of evidence required.