

## **Closing the Loop: Review Process Factors Affecting Audit Staff Follow-Through**

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## **Closing the Loop: Review Process Factors Affecting Audit Staff Follow-Through**

**ABSTRACT:** The PCAOB recently expressed concern regarding the sufficiency and effectiveness of review and supervision of audit field work. For the audit review process to succeed as a quality control mechanism, any issues or questions identified by a reviewer must be adequately resolved and documented in the workpapers. If audit review fails to correct for errors/biases in the work of preparers, there can be serious detrimental effects on audit quality and, in turn, financial statement quality. Our study extends the literature by examining the phase of the review process in which preparers respond to (or “close”) notes/comments provided by their reviewers. Utilizing an experiment, we find that certain contextual factors (review timeliness and review note frame) influence preparer follow-through during this critical phase. Specifically, we find that a delayed review elicits significantly lower effort levels than a timely review. Review note frame (i.e., how the reviewer phrases the rationale given for the underlying directive of a review note) significantly affects preparer effort and performance, but only when the review is timely. Through mediation analyses, we explore potential mechanisms behind our results. In addition, we find that reviewer delay leads to greater over-documentation.

## *1. Introduction*

As junior staff members with limited experience are responsible for performing the audit procedures that form the foundation of the audit opinion (Willet and Page [1996], Herrbach [2005]), appropriate review of their work is essential. If the audit review process fails to correct any errors or biases in the work of these less experienced auditors, it can have serious detrimental effects on audit quality and can lead to audit failure and impaired financial reporting quality (Asare and McDaniel [1996], Nelson and Tan [2005]). The Public Accounting Oversight Board (PCAOB) has expressed concern regarding the sufficiency and effectiveness of review and supervision of audit field work (PCAOB [2010a]). As a result, they have issued a concept release that solicits recommendations for achieving their objective of improving audit firm review and supervision practices and, consequently, audit and financial statement quality (PCAOB [2010b]). Our study investigates potential ways in which audit supervisors can conduct their reviews in order to elicit optimal levels of preparer effort and performance during review.

While there is a substantial body of research on the audit review process (e.g., Tan and Trotman [2003], Agoglia, Kida, and Hanno [2003], Messier, Owhoso, and Rakovski [2008]), prior research has not investigated the phase of the audit in which the preparer addresses reviewer comments/concerns regarding the work performed (commonly referred to as “review notes”). Thus, the extant literature cannot speak to whether, after the identification of an issue and creation of a review note by a reviewer: (a) the issue eventually gets resolved, (b) the workpapers, audit opinion, and financial statements reflect this and, therefore, (c) the review process succeeds as a quality control mechanism. We address this gap by examining review note follow-through by preparers to determine how two contextual factors (review timeliness and rationale for the review note) affect auditor performance.

In response to the significant audit failures of the early 2000s, the Public Company Accounting Oversight Board (PCAOB) issued several auditing standards. Auditing Standard No. 3

(AS3), *Audit Documentation*, was issued in 2004 because “the Board has made documentation a priority” and noted that “clear and comprehensive audit documentation is essential to enhance the quality of the audit and, at the same time, to allow the Board to fulfill its mandate to inspect registered public accounting firms with applicable standards and laws” (PCAOB [2004], p. 320). While AS3 was intended to address these important concerns, there may be some unintended consequences of such a focus on workpaper documentation. For example, Knechel [2007] warns that, if the auditor focuses too much on the formalities and structure of the audit, he/she runs the risk of shifting the purpose of the audit from arriving at the correct conclusion to simply completing a process. Similarly, audit partners have expressed concern about problems arising from staff and senior auditors “chugging through the audit process” with a “check the box mentality”, rather than with a focus on the goal of ensuring the appropriateness of the assumptions and figures presented in the financial statements (Griffith, Hammersley, and Kadous [2010, p. 26]. Our study explores this potential unintended consequence of AS3 by examining whether emphasizing, in review notes, the objective of documenting the work performed (relative to emphasizing the objective of drawing the appropriate conclusions from that work) may inadvertently lead to inferior preparer effort and performance.

Discussions with practicing auditors and a review of auditor blog posts indicate that long review times lead to frustration and inefficient work.<sup>1</sup> Further, prior research suggests that time delays can induce a state of negative affect in the person experiencing the delay, which can have harmful consequences on job performance (Fox and Spector [1999], Blount and Janicik [2002], Sheldon, Thomas-Hunt, and Proell [2006]). Thus, we investigate another factor that may affect preparer follow-through while “closing” review notes: the timeliness of the review. By examining

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<sup>1</sup> For example, one senior interviewed for this study stated, “If they take too long to review, you lose your train of thought and care less.” Also, one blogger advises, “Timing’s also key. Don’t give review notes two weeks after everyone leaves the client site, and expect the notes to be cleared up in a few days” ([http://lifeofanauditor.blogspot.com/2009\\_07\\_01\\_archive.html#3217290691008102918](http://lifeofanauditor.blogspot.com/2009_07_01_archive.html#3217290691008102918)).

these two factors together, we also explore whether delay-induced negative affect mitigates potential benefits of other reviewer behavior (specifically, providing conclusion-framed review notes).

We conduct an experiment to investigate the effect on preparer follow-through of review timeliness and the frame of the review note, two contextual features over which the reviewer has some control that are particular to the review note closing phase of the audit. Specifically, we manipulate the timeliness of the review as either timely or delayed and define reviewer delay as the length of time between when the preparer expects to receive the reviewed workpapers back from the reviewer and when he or she actually receives them. The review note frame is manipulated as having either a conclusion-focused (i.e., making sure an appropriate conclusion is reached regarding management's assertions) or a documentation-focused (i.e., ensuring the documentation in the workpapers will withstand ex-post scrutiny) rationale for performing the audit work requested. We define review note rationale as the supplementary advice or guidance contained in a review note. The actual additional work being requested by the reviewer (hereafter, the "underlying directive") is the same in both conditions.

As predicted, we find that a timely review leads to greater preparer effort than a delayed review. Additionally, conclusion-framed review notes result in greater effort and performance, but only when the review is timely. In our setting, the combination of a timely review and conclusion-framed review notes appears to be necessary to elicit superior preparer performance. We conduct mediation analyses and find that negative affect (preparer frustration with reviewer delay) mediates the timeliness/frame effect on preparer effort and performance. Further, we find that a delayed review elicits greater over-documentation (i.e., instances in which preparers document performing work that has not actually been performed) than a timely review.

The results of this study suggest that simply leaving a review note does not ensure that the reviewer's underlying issue gets appropriately investigated and resolved by the preparer. In addition,

how and when a reviewer relays a request for additional work can have consequences for overall audit quality. Given that reviewers maintain substantial control over these two factors, they should be made aware of the potential consequences of their review timing and style choices. Thus, this research should be of interest to the PCAOB as they solicit recommendations for improving the results of the supervisory and review process. As inexperienced staff auditors are the first line of defense against potential audit failure (Kaplan [2004]), anything that more experienced auditors can do to elicit superior preparer follow-through should be explored as a fundamental way to improve the effectiveness of audit supervision and increase overall audit quality, which affects financial reporting quality and reliability (Pittman and Fortin [2004], Lambert, Jones, Brazel [2010]). Finally, as can be inferred from Knechel [2007], the issuance of AS3 by the PCAOB may have unanticipated consequences on audit quality if it causes reviewers to write review notes that focus more on the formalities of the documentation in the workpapers than on the conclusions that the workpapers support.

The remainder of this paper is organized as follows. Section 2 presents the background literature and motivates the hypotheses. Sections 3 and 4 describe the method and present the results. Section 5 offers conclusions, implications, and suggestions for future research.

## *2. Background and Hypotheses Development*

### **2.1 THE AUDIT REVIEW PROCESS**

Audit workpaper review serves several purposes. For example, the review process provides feedback and training to preparers and induces a sense of accountability for their work (AICPA [1979], Rich, Solomon, and Trotman [1997a], [1997b], Agoglia, Kida, and Hanno [2003], Brazel, Agoglia, and Hatfield [2004]). However, its primary function is that of quality control (Roebuck and Trotman [1992]). The procedures performed by junior staff members serve as the foundation of the audit opinion, and, thus, errors or problems in their work could potentially lead to audit failures

(Willet and Page [1996], Herrbach [2005]). Audit firms rely on the review process to detect and correct errors in the judgments of less experienced auditors (Asare and McDaniel [1996], Nelson and Tan [2005]). Prior research demonstrates that a variety of contextual features affect review effectiveness, specifically with respect to preparer performance in the initial workpaper preparation stage and reviewer detection of errors (e.g., Asare and McDaniel [1996], Tan and Trotman [2003], Brazel, Agoglia, and Hatfield [2004], Asare, Haynes, and Jenkins [2007]). We venture beyond the point at which an issue or error is identified by the reviewer and examine how review-related factors that are unique to this phase of the audit affect preparer follow-through. We focus on factors (i.e., the timing and style of responses from the reviewer) that are, for the most part, under the control of the reviewer. This allows for greater practical contribution, as audit firms can take measures to train reviewers to more carefully consider their review timing and style choices.

## 2.2 REVIEW TIMELINESS

*2.2.1. Reviewer Delay in Practice.* Because audit managers typically work on several engagements concurrently and must adjust their priorities accordingly, some delay in returning reviewed workpapers to the preparer is inevitable (Agoglia et al. [2010]). However, reviewers still have discretion over how/when to conduct their reviews and can take measures (e.g., electronically reviewing a larger percentage of work, setting review time goals, requesting additional assistance from another manager or partner) to avoid allowing the delay to become unnecessarily drawn out (Agoglia et al. [2010]). While less than a third of managers surveyed on the qualities of excellent and poor reviewers referred to timeliness as an important attribute (Gibbins and Trotman [2002]), early audit research suggests that staff may view delays more negatively (Wolf [1981], Bamber and Bylinski [1982]).

In an effort to explore current perceptions regarding reviewer delay, we spoke with six Big 4 senior auditors. All six independently identified review timeliness as a critical influence on the

amount of time and effort preparers spend closing review notes and indicated that delays are viewed negatively by staff and seniors. Interviewees noted that, despite the efficiencies realized in the review process in recent years (Brazel, Agoglia, and Hatfield [2004]), delays of two weeks or more are common and that reviewers are relatively unconcerned with preparer perceptions. For example, one interviewee stated, “I don’t get the impression [manager name] ever felt it was an important part of his job to worry about setting accurate expectations for staff regarding *his* time. It was more like, ‘You’ll get it when I get to it. Period.’” Discussing whether managers ever offer explanations for a delayed review, another interviewee stated:

Well, yeah, sometimes [manager name] would apologize and give me some bull-[expletive removed] excuse, but then the next time she’d give me the same excuse and it was eventually like, “whatever”. But, [different manager name], on the other hand, would just send me the workpapers, no explanation, no apology for the fact that I was no longer even at the client and now he wants me to try to clean up these workpapers on my own time.

These excerpts, while only representing the experiences of a small sample of preparers (and, thus, reflecting neither the full range of all preparer experiences, nor the behavior of all reviewers), do suggest that reviewer delay remains a frustration for many audit staff and seniors.

*2.2.2. Review Timeliness and Time Delay Literature.* Consistent with this sentiment, prior research in psychology suggests that time delays elicit frustration which can cause suboptimal cognitive processing and inferior performance (Fox and Spector [1999], Forgas and George [2001], Blount and Janicik [2002]). Organizational behavior theory predicts that negative affective states (such as those induced by time delays) can lead to the overweighting of short-term goals and have harmful consequences on job performance (Fox and Spector [1999], Blount and Janicik [2002]). Further, Sheldon, Thomas-Hunt, and Proell [2006] find that time delays can cause participants in laboratory experiments to view information provided by the collaborator responsible for the delay as less important. Interestingly, they also find that the negative effects of time delays are moderated by the

status (i.e., task experience) of a collaborator. That is, delays caused by experienced collaborators have less of an impact on the responses of delayees than delays caused by inexperienced collaborators.

However, Sheldon, Thomas-Hunt, and Proell [2006] admit to a limited operationalization of status and call for research to explore the influence of delays in time-sensitive, hierarchically-organized settings in which the delayer may be a superior (e.g., public accounting).<sup>2</sup> Time budgets and time deadlines have always been pervasive in public accounting, but have become even more demanding in recent years due to the combination of additional internal control testing required by the Sarbanes-Oxley Act of 2002 (SOX) and regulation passed by the SEC which reduced the 10-K filing deadline (Otley and Pierce [1996], DeZoort and Lord [1997], Houston [1999], SOX [2002], SEC [2005], Lambert, Jones, and Brazel [2010]). The extent to which time delays affect the effort and performance of skilled participants in such a time-sensitive and hierarchical organizational environment is an empirical question that has not yet been investigated.

Although Sheldon, Thomas-Hunt, and Proell [2006] find that the negative effects of time delay are mitigated with an experienced delayer, we suspect this will not be the case in an audit setting. In addition to the time sensitive nature of audit engagements, there are many particulars of the audit environment that can make reviewer delay especially frustrating to preparers. For example: the preparer will have shifted to working on another area and may find it more difficult to change his/her plan of action and train of thought to deal with the reviewed area; the preparer may have rolled onto another client and now has to juggle the demands of working for two managers and trying to obtain information from the client while working at a different location; or clients may become irritated and more difficult to deal with because they believed testing on the area in question was already

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<sup>2</sup> Their status manipulation related to the amount of task-relevant experience participants were told the collaborator had. Participants were relatively inexperienced students performing a task that lacked a true time-sensitive organizational context.

completed. Further, the preparer may presume that the reason for the delay is because the reviewer is busy and may, in turn, assume that the work in question is of a low priority to the reviewer or he/she would have juggled it to the top of his/her priority list.<sup>3</sup> As a result, reviewer delay may also cause the preparer to view the additional work requested in the review notes as less important than if there had not been a delay. Thus, we expect reviewer delay to lead to frustration and perceptions that the work is of a lower priority to the reviewer than when there is no delay. This should lead to lower levels of effort and performance by the preparer.

### 2.3 REVIEW NOTE COMPOSITION AND EMPHASIS FRAMING

A review note is typically written to address a particular issue and includes instruction to perform additional audit work or follow-up (i.e., an “underlying directive”) (Roebuck and Trotman [1992]). When creating a review note, a reviewer may include phrasing (in addition to the underlying directive) that communicates his or her reason for leaving the note and provides direct and indirect advice/guidance to subordinates (which we refer to as a “rationale”) (Roebuck and Trotman [1992], Miller, Fedor, and Ramsay [2006]). Reviewers may choose to provide such guidance because the review process is an important part of the training, coaching, and development of auditors (Roebuck and Trotman [1992], Wiongrad, Gerson, and Berlin [2000], Brazel, Agoglia, and Hatfield [2004], Miller, Fedor, and Ramsay [2006]). Providing a rationale appears to be common practice among reviewers. Roebuck and Trotman [1992], in an examination of actual review notes, find that most notes include indirect advice and training.

However, the phrasing of this rationale may act as an *emphasis frame*, in which the message creator selectively enhances the importance, relevance, or weight of one potential purpose of the underlying directive at the expense of another (Nelson, Oxley, and Clawson [1997], Nelson and

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<sup>3</sup> This line of reasoning is supported by the Sheldon, Thomas-Hunt, and Proell [2006] finding that information provided by a collaborator is deemed less important when there is a time delay.

Oxley [1999], Druckman [2001]).<sup>4</sup> An emphasis frame reflects the motivation of the creator of the message, whether or not the effect of the frame was intentional (Hallahan [1999]). The concerns and needs implied in the message provide the recipient with the motivation to act (Nutt [1998]). If, for instance, a person is aware of two or more considerations relating to a particular issue, the frame may alter the relative weight of one of the considerations but does not cause the other consideration to change or cease to exist. For example, support for increased government spending has been shown to significantly differ depending on whether it is framed as enabling poor people to get ahead in life or as resulting in higher taxes (Sniderman and Theriault [2004]). In actuality, government spending may both enable poor people to get ahead and result in higher taxes. However, emphasizing one consideration over another affects the weight an individual places on each consideration. In a review setting, a rationale that reviewers provide in order to help train the preparer may intentionally or unintentionally act as a frame and influence preparer effort and performance. In highlighting one objective of the audit, a reviewer may reduce the relative importance of another objective in the mind of the preparer, which may lead to unanticipated effects on audit quality.

*2.3.1. Documentation versus Conclusion Rationale.* There are a number of ways a reviewer may frame a review note, as audit firms do not have pre-populated lists of review notes from which to choose (Ramsay [1994]). Since review notes are written by reviewers in their own words, reviewers show considerable variation in the number, type, and style of notes they leave (Roebuck and Trotman [1992], Gibbins and Trotman [2002]). Thus, a review note with the same underlying directive may be presented with different rationales.<sup>5</sup>

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<sup>4</sup> Druckman [2001] distinguishes *emphasis framing* from *equivalency framing*, noting that equivalency framing occurs when logically equivalent words or phrases cause individuals to alter their preferences or behavior (see e.g., Tversky and Kahneman [1981] and Kida [1984]), while emphasis framing involves emphasizing a subset of potentially relevant considerations.

<sup>5</sup> We discussed this likelihood with five Big 4 auditors. All recalled receiving review notes that were worded in ways that emphasized different reviewer rationales (e.g., assuring appropriateness of conclusions versus adequacy of documentation). Prior research supports the notion that review notes can invoke different rationales for the work

Rich, Solomon, and Trotman [1997a] describe two major classes of review process objectives: (1) reaching an appropriate conclusion regarding conformance with generally accepted accounting principles (GAAP) (i.e., a “conclusion objective”) and (2) ensuring that the documentation in the workpapers is defensible and will withstand ex post scrutiny (i.e., a “documentation objective”). They base this classification on Roebuck and Trotman’s [1992] examination of actual review notes and observe that both of these objectives are consistent with professional standards. The conclusion objective stems from the fact that forming an appropriate opinion is the goal of a financial statement audit, while the documentation objective arises because the workpapers provide the record of procedures applied and information obtained during the engagement (AICPA [1995]).<sup>6</sup> In addition, there are distinct consequences associated with *not* meeting either of these objectives. If the audit conclusions are incorrect, then both audit risk (i.e., the risk that the auditor provides an inappropriate opinion) and engagement risk (i.e., injury related to litigation and adverse publicity) are high (Messier, Glover, and Prawitt [2008]). If the audit documentation is inadequate, the auditor risks receiving a negative PCAOB inspection which can lead to such disciplinary actions as public hearings, sanctions, and license suspensions and/or revocations (SOX [2002]).

The defensibility of the workpapers has become an even more important objective with the passage of AS3. Recent research has documented some unintentional repercussions of AS3. Bronson et al. [2010] find that the focus on audit documentation brought on by the passage of AS3 and Section 404 of SOX has increased the amount of time required to complete an audit and led to a

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requested, including both conclusion and documentation oriented rationales (Roebuck and Trotman [1992]). In addition, assessments of the realism of the review notes used in our study (which contain different rationales) were high and did not differ by condition (see Section 3 for further discussion).

<sup>6</sup> Some studies use the terms documentation and conclusion to describe *errors* that are either mechanical or conceptual in nature, respectively (e.g., Tan and Trotman [2003], Gold, Gronewold and Salterio [2010]). In contrast, we distinguish between documentation and conclusion *review note rationales* and hold the type of error constant. All of our framed review notes relate to conceptual errors in the workpapers. As such, we focus on the reviewer’s rationale for a review note rather than on the nature of errors.

reduction in the reliability of preliminary earnings releases. Hammersley, Bamber, and Carpenter [2010] find that increased documentation can cause auditors to evaluate fraud risk less skeptically. Pre-AS3, Rich, Solomon, and Trotman [1997a] note that reviewers sometimes direct preparers to perform additional procedures not because they believe those procedures will have additional diagnostic value, but because they believe they are necessary to make the workpapers more defensible. The passage of AS3 is likely to have increased the salience of the documentation objective in reviewers' minds and may therefore lead reviewers to more frequently frame their review notes in order to highlight this objective.

Preparers responding to conclusion-framed review notes may sense greater reviewer concern for the accuracy/appropriateness of the management assertion in question. Preparers primed with a conclusion objective are likely to be more sensitive to ensuring the correctness or accuracy of the account balance/assertion being tested by the underlying directive in the review note. This may cause the preparer to take the time to gather further evidence and evaluate it more carefully. A preparer viewing the underlying directive through a documentation-focused lens may perceive that the reviewer is primarily concerned with workpaper presentation. A documentation-framed review note may cause the written record (i.e., workpapers) to be more salient in the preparer's mind than the conclusions which that written record support (Druckman [2001]). This focus on the formalities of the audit process, while important, may cause the preparer to view the purpose of the additional audit work as demonstrating completion of the process rather than arriving at the correct conclusions and may have unintended, negative implications for preparer effort and performance, and thus, for audit and financial statement quality (Knechel [2007], Griffith, Hammersley, and Kadous [2010]).

#### 2.4 THE COMBINED EFFECT OF REVIEW TIMELINESS AND REVIEW NOTE FRAME

Recipients of a message frame frequently match their plan of action to the concerns or needs of the message originator (Nutt [1998]). However, a message recipient's response may be contingent

on the source of the message. That is, the source of the frame affects the extent to which the frame matters. For example, Druckman [2001] reports results of a study that shows a framing effect for participants reading from the *New York Times*. However, the effect is entirely mitigated when the source of the frame is the *National Enquirer*.

Absent any negative feelings toward the reviewer, preparers responding to conclusion-framed review notes may be more “primed” to catch an issue or problem that might affect conclusions drawn while they perform the procedures required by the underlying directive. The preparer may perform these procedures more methodically and conscientiously than a preparer receiving documentation-framed review notes, who may be more focused on the formalities of workpaper documentation. In turn, a preparer receiving a conclusion-framed review note may be more likely to obtain, and appropriately examine, evidence sufficient to identify issues or errors. However, recall that we expect a delayed review to impair preparer follow-through because delay leads to negative affect (e.g., frustration) and lowered perceptions of the importance of information provided by the delayer (Sheldon, Thomas-Hunt, and Proell [2006]). A preparer who is distressed/frustrated by reviewer delay may feel more negatively toward the reviewer and may pay less attention to any message received from the reviewer (Dunn and Schweitzer [2005]). Thus, we expect framing to have an effect when the review is timely, but to have no discernable influence on preparer effort and performance when the review is delayed. In conjunction with our expectation that a timely review will, in general, lead to better preparer follow-through than a delayed review, we predict that preparer effort and performance closing review notes will be highest when there is a timely review and conclusion-framed review notes, lower when there is a timely review and documentation-framed review notes, and lowest when the review is delayed, regardless of review note frame. Given these expectations, we propose ordinal interactions of the form specified below (see Figure 1):

*H1*: Review timeliness and review note frame will affect preparer effort in such a way that (a) a timely review leads to greater effort than a delayed review and (b) the combination of conclusion-framed review notes and a timely review leads to the greatest level of effort.

*H2*: Review timeliness and review note frame will affect preparer performance in such a way that (a) a timely review leads to better performance than a delayed review and (b) the combination of conclusion-framed review notes and a timely review leads to the best performance.

[Insert Figure 1]

### 3. Method

#### 3.1 PARTICIPANTS

Participants were 69 staff and senior level auditors with an average of approximately 17 months of experience. Discussions with practicing audit managers revealed that staff of this experience level should be familiar with the types of testing and procedures requested by the review notes. We designed the review notes so that some general audit testing experience (e.g., examining supporting evidence) is necessary, but a large amount of experience testing the specific accounts tested in the workpapers (e.g., accounts receivable, bad debt expense) is not.<sup>7</sup>

#### 3.2 EXPERIMENTAL TASK

Participants were provided with a computerized case that was developed based on an audit program and workpapers used by a Big 4 audit firm as well as with the input and advice of nine auditors representing three of the Big 4 firms. In the task instructions, they were informed that their task involves closing review notes on a set of workpapers they were to assume they had prepared. They were asked to address the review notes as they would if on an actual client and to document additional errors (if any) they may find (see Figure 2 for presentation of the instrument flow). They

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<sup>7</sup> This assertion is supported by pre-testing with 33 auditing students. Further, all analyses used to test hypotheses were also performed using demographic data (e.g., experience, rank, gender, size of firm) as covariates. Such inclusion did not significantly affect the results or change the inferences drawn. In addition, there were no significant differences among conditions for these variables.

were provided background information on the client, as well as the names and positions of client personnel. Participants then submitted the workpapers to the reviewer and waited for the reviewer to return the workpapers. After they received the reviewed workpapers, participants proceeded to a main menu where they could access the workpapers with open review notes, access previously obtained audit evidence and firm guidance (including the audit program), and “correspond with” the client.<sup>8</sup> Participants utilized the previously obtained evidence and gathered additional evidence to perform the work required to address the review notes. Once they finished closing review notes and confirmed they were ready to end the case, they proceeded to a series of manipulation checks and other post-experimental questions.

[Insert Figure 2]

### 3.3 INDEPENDENT VARIABLES

The two independent variables (review note frame and review timeliness) are manipulated between participants using a 2 x 2 complete factorial design. Participants were randomly assigned to one of the four treatment groups. There were a total of seven review notes, four of which contained the frame manipulation (see Appendix).<sup>9</sup> Each manipulation of a given review note contained the *same underlying directive*; however, the frame is manipulated as having either a documentation-focused or a conclusion-focused rationale. The rationale in the documentation-framed review notes underscores the importance of making sure that there is sufficient, defensible documentation in the workpapers. The rationale in the conclusion-framed review notes conveys the importance of the

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<sup>8</sup> Participants had the ability to “communicate with the client” to obtain explanations and/or additional supporting documentation by clicking a button on the main menu. When they clicked on this, they were given more information about the client contacts (e.g., their positions, which customer accounts they oversee). Once they selected an individual, the communication interface asked participants to use two to three key words to describe an issue they would like to discuss with the specific client contact (e.g., “shipping documents”). The case was programmed so that many combinations, synonyms, and misspellings of the key words will trigger a response from the client. We refined the programming of these key words based on pre-testing with auditing students.

<sup>9</sup> The remaining three review notes relate to minor errors in the workpapers that are strictly presentation issues over which the reviewer is not likely to include a rationale. Based on suggestions from auditors who pre-tested the instrument, we include review notes of this type to increase the realism of the task.

additional work toward ensuring an appropriate conclusion regarding whether the assertion being tested is compliant with GAAP. The review notes were subject to two rounds of pre-testing. The first round was conducted with 33 auditing students (many of whom had audit experience) to ensure that: (1) the review note frame manipulation resulted in the review note pairs being viewed as having a relatively different rationale (i.e., documentation versus conclusion; results support this notion and are discussed below), (2) preparers do *not* feel that the two rationale frame conditions lead to different expectations regarding the work to be performed (and, reassuringly, pretest respondents indicated that the underlying directives were the same), and (3) the review notes were realistic (mean = 8.50, where 1 = “not realistic” and 11 = “very realistic”).<sup>10</sup>

The second pre-test was conducted on 19 auditors with significant review experience (mean = 4.92 years reviewing) to ensure that reviewers’ perceptions of the work requested in the review notes do not differ between frame conditions. Consistent with this, no significant differences were found in reviewers’ perceptions of the importance of the work requested in the underlying directive (p’s for individual note pairings all > 0.66) or in reviewers’ expectations of how thoroughly the work should be performed (all p’s > 0.34) based on the two manipulated review note frames. Thus, reviewers do not expect the rationales to result in differential preparer effort and performance, suggesting that they are not aware of the effect their review note phrasing choices may have on preparers.

Review timeliness is manipulated as timely (review received after two days) or delayed (review received after 14 days). These lengths were determined based on discussions with auditors regarding time lags that, given the type of workpapers under review, would constitute (a) a timely review and (b) a delay that would be significant, but not uncommon. However, to ensure that

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<sup>10</sup> The 69 staff and senior auditors who participated in the experiment also indicated that the review notes used in our study were realistic in both the conclusion and documentation frame conditions (mean = 8.38 and 8.30, respectively where 1 = “not at all realistic” and 11 = “very realistic”,  $p = 0.895$ ).

participants with different prior exposure to delays would experience this delay similarly, we follow previous literature (Sheldon, Thomas-Hunt, and Proell [2006]) and set a review time expectation of two days (i.e., expectations are set at what our discussions with auditors suggest is a “timely” review).<sup>11</sup>

With respect to the time lag utilized in this experiment, we wanted participants to experience an actual lag, but chose *not* to have participants wait the full 14 (or two) days, as this was logistically impractical, would likely lead to significant participant attrition, and would have resulted in a loss of experimental control during the lag. Given that these constraints leave us unable to reproduce the exact conditions under which such time lags occur in practice, we conducted pre-tests to develop appropriate experimental proxies for such real-world lags and took measures to assess whether our manipulation evokes feelings and responses similar to situations in which there might be a 14 (or two) day lag in practice. Based on feedback gathered from pre-testing with accounting professors with audit experience, doctoral students with audit experience, and accounting undergraduate students with auditing internship experience, we chose intervals of six seconds to represent a day (i.e., a total time lag between workpaper submission of twelve and 84 seconds in the timely and delayed conditions, respectively).

We then pre-tested the delay with several auditors who confirmed that (a) the delay experienced in the delayed review condition elicited feelings similar to those they experienced when faced with extensive delays in practice and (b) the timely condition evoked feelings similar to situations in which review time expectations are met.<sup>12</sup> In addition, a number of participants in the experiment chose to comment (post-experimentally) on how the time lag put them in mind of situations they encountered in practice. For example, one participant in the delayed review condition

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<sup>11</sup> Setting an accurate expectation or providing an explanation for an extensive time delay might alleviate some of the negative effects of that delay. However, interviews with auditors discussed in section 2.2.1 indicate reviewers often do not do so. Thus, we focus on settings in which a reviewer delay is neither expected nor explained.

<sup>12</sup> This notion is supported by post-experimental responses from participants in the experiment (see section 4.1).

noted that “the amount of time it took the reviewer to get through the workpaper...was something that usually does happen. It has happened to me where I have kept my deadline but then the manager does not keep their end of the deadline which is very frustrating to staff, but nothing can really be done by the staff person because of the manager’s seniority.” Others in this condition noted the delay was “very realistic” and “close to real life experience”. Given the fact that review times in the timely review condition met preparer expectations, participants were less likely to explicitly comment on the time lag. However, a number of participants in this condition commented on the realism of the simulation and its setting (e.g., “this simulation was very similar to my recent audit of a small manufacturing client”). Further, post-experimental responses suggest that participants in both conditions responded to our time lags similarly to the way in which they would in practice (means = 8.38 and 8.17 for the timely and delayed conditions, respectively,  $p = 0.681$ , where 1 = “not at all similarly” and 11 = “very similarly”).

### 3.4 DEPENDENT VARIABLES

To test H1, we use two measures of preparer effort. First, we use the number of supporting evidence items (e.g., invoices, explanations offered by client contacts) each preparer accesses. As a second measure of effort, we use the time preparers spend closing review notes (from the return of the workpapers to the start of the post-experimental questions). To measure preparer performance (i.e., effectiveness), we use the number of seeded errors the participant discovers and documents (H2).<sup>13</sup> Any documentation indicating the preparer plans to follow-up on the error or seek guidance from the reviewer regarding the error counts as an error discovered.<sup>14</sup>

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<sup>13</sup> The number (eight) and type of errors (e.g., authorization error) are consistent with previous literature (Waggoner [1990], Johnston, Lindsay, and Phillips [2003]). We treat the detection of each error equally because typical audit practice requires *any* error detected during tests of details to be extrapolated to the population and/or otherwise investigated (Messier, Glover, and Prawitt [2008]). Thus, it would not be appropriate to deem any of these errors immaterial. The particular errors used were chosen based on the input of auditors from three of the Big 4 firms.

<sup>14</sup> We only classify an error as *not discovered* if the participant documents nothing for the item in question or documents that everything appears appropriate. We use this classification because the ultimate goal of our study is to make

## 4. Results

### 4.1 MANIPULATION CHECKS AND RELATED ITEMS

As a manipulation check for review timeliness, all 69 participants correctly responded to a question which asked how long the manager took to return the workpapers. Responses to other timeliness-related post-experimental questions indicated that participants experienced the timeliness manipulation as expected. For example, participants in the timely review condition perceived the length of the review as significantly shorter (mean = 5.18, where 1 = “very short” and 11 = “very long”) and reported feeling significantly lower levels of frustration (mean = 2.68, where 1 = “not at all frustrated” and 11 = “very frustrated”) than participants in the delayed review condition (means = 10.23 and 8.17, respectively;  $p$ 's < 0.001). Timely review participants also reported that they perceived the work to be of a higher priority to the manager (mean = 6.00, where 1 = “low priority” and 11 = “high priority”) than delayed review participants (mean = 2.40;  $p$  < 0.001).

As noted earlier, we conducted a pre-test (see “first round” of pre-testing in section 3.3) to help ensure that we appropriately manipulated review note frame. As emphasis framing works by influencing the relative salience of potential concerns, we created a relative measure of pre-test participants' perceptions of the manager's concern for reaching the appropriate conclusion vis-à-vis concern for documentation (i.e., perception of concern for conclusion *minus* perception of concern for documentation, with each measured on 11-point scales where 1 = “not concerned” and 11 = “very concerned”; thus, a score of 0 would indicate an equal concern for conclusion and documentation). For the four framed review notes used in our study, the mean perception of the manager's relative concern for conclusion was 4.03 for the conclusion framed review notes

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inferences relating to the potential impact of our independent variables on audit quality. That is, whether or not a preparer completely understands or makes the correct judgment relating to an item matters less than whether a preparer draws the attention of the reviewer to the item. Without attention being drawn to the item, the likelihood of the error being discovered in subsequent rounds of review is very small and would most likely require a reviewer to reperform the preparers' work, which is inefficient and rare in practice (DeZoort and Lord [1997], Asare, Haynes, and Jenkins [2007]).

and -4.34 for documentation framed review notes ( $p < 0.001$ ). Examined individually, the difference for each “pair” of review notes (i.e., the conclusion and documentation framed versions of each note) is highly significant (all  $p$ 's  $< 0.001$ ). These results provide support that we manipulated relative concern for conclusions versus documentation as we intended.<sup>15</sup>

## 4.2 HYPOTHESES TESTING

Hypotheses 1 and 2 predict the pattern of results illustrated in Figure 1. Following Hirst, Koonce, and Venkataraman [2007] and Kadous, Kennedy, and Peecher [2003], we use a single planned contrast to test whether preparer effort and performance fall into the pattern predicted. We use contrast weights of +3 for the timely review/conclusion-framed review notes condition (Cell 1), +1 for the timely review/documentation-framed review notes condition (Cell 2), and -2 for both of the delayed review conditions (Cell 3 = delayed review/conclusion-frame; Cell 4 = delayed review/documentation-frame).<sup>16</sup> With these contrast codes we allow for both a main effect of timeliness on preparer effort and performance (i.e., the hypothesized effect denoted with ( $a$ ) in H1 and H2) and an interactive effect of timeliness and review note frame (i.e., the hypothesized effect denoted with ( $b$ ) in H1 and H2) (Hirst, Koonce, and Venkataraman [2007]). Specifically, the weights predict greater effort and performance from preparers receiving a timely review than a delayed review (i.e., a main effect of timeliness) as the contrast coefficient for Cell 1 (+3) is greater than that

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<sup>15</sup> When examining the impact of a manipulated message (e.g., an emphasis frame) on an outcome, O'Keefe [2003] recommends approaches such as these (i.e., pre-experimental procedures aimed at ensuring a carefully manipulated message) over a manipulation check measured at the time of participation in the experiment, as such a “check” is more likely to be an assessment of a potentially mediating variable. While not technically a manipulation check of each individual review note frame, we do however ask participants in the experiment about their *overall* perceptions of the manager's relative focus on conclusions and documentation across all review notes. Differences on this measure are significant ( $p = 0.009$ ) and in the expected direction.

<sup>16</sup> These weights were identified in previous literature as appropriate for the form of our hypothesized interaction (Kadous, Kennedy, and Peecher [2003], Rosnow and Rosenthal [1995]). Because we hypothesize an ordinal interaction, we do not rely on the main effect or interaction terms from the traditional ANOVA model as these models allocate much of the variance of an ordinal interaction to simple main effects instead of the interaction term (Buckless and Ravenscroft [1990]). Thus, we perform hypotheses testing with planned contrast tests and present the traditional ANOVA results for completeness. See Frederickson, Peffer, and Pratt [1999], Kadous [2000], Sedor [2002], Hoffman, Joe, and Moser [2003], Kadous, Kennedy, and Peecher [2003], Hales [2007], Hirst, Koonce, and Venkataraman [2007], and Hoffman and Zimelman [2009] for similar treatment.

for Cell 3 (-2) and the coefficient for Cell 2 (+1) is greater than that for Cell 4 (-2). In addition, the weights specify no difference in the contrast coefficient for delayed participants based on frame (Cells 3 and 4 are both = -2), and the contrast coefficient is higher for timely review participants who receive conclusion-framed review notes than for those who receive documentation-framed review notes (Cell 1 = +3 and Cell 2 = +1), reflecting the specified interaction.

*4.2.1. Preparer Effort: H1.* Table 1, Panel A presents descriptive statistics for our first measure of effort, the number of evidence items examined. Cell means fall approximately into the pattern predicted (Cell 1 = 31.38, Cell 2 = 25.50, Cell 3 = 25.13, and Cell 4 = 23.53; see Figure 3, Panel A). Traditional ANOVA results are presented in Panel B for completeness. However, because ANOVA assigns contrast weights which predict a disordinal interaction (specifically, 1, -1, -1, 1) (Buckless and Ravenscroft [1990]), it is more appropriate to examine the results of the planned contrast test presented in Panel C for hypothesis testing, given the pattern predicted by H1 (Kadous, Kennedy, and Peecher [2003]). Based on this analysis, H1 is supported using total evidence items examined as the dependent variable ( $p = 0.019$ ). In addition, the between-cells variance not captured by the planned contrast (i.e., the residual) is insignificant ( $p = 0.740$ ), which indicates that the joint main and interaction effect contrast model is a good fit (Hirst, Koonce, and Venkataraman [2007]).

[Insert Table 1 and Figure 3]

As another measure of effort, we examine the amount of time preparers spend closing review notes. Due to the extensive nature of the instrument and the time required to complete it (mean = 83.60 minutes), it appears that some participants did not complete the entire simulation without pausing. Therefore, we examine the time stamps recorded in the data file of each participant.<sup>17</sup> For instances in which a participant paused for more than 20 minutes, we subtract the amount of pause-

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<sup>17</sup> The program stamps the time whenever a participant clicks on something within the simulation interface.

time greater than 20 minutes from that participant's total time.<sup>18</sup> We then perform a Q Plot of the time data for all of the participants and note one very obvious outlier. For that outlier, we replace her total time with the next highest value for total time that is present in the sample.<sup>19</sup> We use these adjusted times to test H1.

Table 2 presents results using time as the dependent variable. Panel A indicates that the means (in minutes) are in the direction predicted by the planned contrast (Cell 1 = 90.20, Cell 2 = 76.26, Cell 3 = 70.16, and Cell 4 = 72.84; see Figure 3, Panel B). Again, we present the traditional ANOVA in Panel B for completeness. Results of planned contrast testing show support for H1 using time spent as the dependent variable at a significance level of  $p = 0.051$ . The lack of significance for the residual ( $p = 0.949$ ) indicates the model is a good fit.

[Insert Table 2]

Thus, using both measures of effort to test H1, we conclude that preparers exert more effort when responding to timely reviews than delayed reviews. In addition, conclusion-framed review notes elicit greater effort from the preparer than documentation-framed review notes, but only when the review is timely. The combination of a timely review and conclusion-framed review notes results in the highest levels of preparer effort.

*4.2.2. Preparer Performance: H2.* To test H2, we measure preparer performance (i.e., the effectiveness of additional testing) as the number of seeded errors the participant documents. Table 3 presents the results, including the traditional ANOVA for completeness. Although the planned

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<sup>18</sup> We exclude from the total time measure any time beyond 20 minutes during which the participant is paused (i.e., not clicking on evidence items or navigating through the screens). The results and inferences drawn are robust to cut-offs of 5, 10, 15, 20, 25, and 30 minutes and total time transformed into a rank variable. Neither the significance of the results nor the inferences drawn from them change based on the use of these various cut-off points or the use of rank time. Based on observation during pretesting of the instrument, we present results using a 20 minute cut-off since the likelihood that pauses over 20 minutes are due to the participant taking a short break (e.g., getting coffee, answering the phone), rather than working on the simulation (e.g., processing information, documenting in the workpapers). In addition, we examined (1) the number of participants with delays over these various cut-off points per cell and (2) the total number of minutes over these various cut-offs per cell. There were no significant differences among the cells for these measures, indicating such pauses were randomly distributed.

<sup>19</sup> Excluding this outlier does not affect the conclusions we draw for this, or any other, dependent variable.

contrast is significant ( $p = 0.031$ ), means for Cells 2 and 4 are virtually identical (2.78 and 2.79, respectively). Thus, the pattern of cell means does not support the timeliness main effect portion of H2. However, a visual inspection of the means (see Figure 3, Panel C) indicates that, as anticipated, Cell 1 does in fact lead to higher numbers of documented errors (mean = 3.56) than the other three cells (with Cell 3 = 2.44). To determine whether the interaction portion of the H2 prediction is significant (i.e., that Cell 1 will be the highest), we perform a contrast test using weights of +3, -1, -1, -1 that excludes the main effect requirement and focuses on the predicted interaction.<sup>20</sup> This specific contrast coding predicts better performance in the timely review/conclusion-frame condition than all other three conditions. Panel D of Table 3 shows the results of this test of the interaction. The contrast coefficient is significant ( $p = 0.022$ ) and, again, the residual is insignificant ( $p = 0.742$ ), suggesting a good fit. Thus, while we do not find evidence to support the main effect aspect of H2, we do find evidence that the combination of a timely review and conclusion-framed review notes results in significantly better preparer performance (i.e., the interaction effect aspect of H2 is supported).

[Insert Table 3]

### 4.3 ADDITIONAL ANALYSES

*4.3.1 Mediating the Timeliness/Frame Effect.* The development of our hypotheses suggests preparer frustration and preparer perceptions of manager priority for the work requested as potential mediators of the review timeliness/review note frame effect on preparer effort and performance. Thus, we perform mediation analyses to explore whether frustration and/or perceived priority are mechanisms behind our observed results. Mediation exists if the following conditions are met: (1)

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<sup>20</sup> The form of the interaction predicted by H2 specifies that (a) a timely review leads to better performance and (b) the combination of a conclusion frame and a timely review leads to the best performance. Contrast coding weights of +3, -1, -1, -1 test part (b) of H2 (i.e., the interaction) without requiring a main effect of timeliness. See Buckless and Ravenscroft [1990] and Hoffman and Zimbelman [2009] for similar use of these contrast weights.

the specified effect of review note frame and review timeliness significantly affects the proposed mediator, (2) the proposed mediator significantly affects the effort/performance measure, and (3) after controlling for the proposed mediator, the observed effect of review note frame and review timeliness on the effort/performance measure reduces in significance (Sedor [2002], Baron and Kenney [1986]). With respect to the number of evidence items preparers examine, planned contrast tests (+3, +1, -2, -2) using the potential mediator as the dependent variable show that Condition 1 is met for both frustration ( $F = 88.273$ ,  $p < 0.001$ ) and priority ( $F = 29.263$ ,  $p < 0.001$ ). Regression analyses with the potential mediator as the independent variable and evidence items as the dependent variable suggest Condition 2 is met for the measure of frustration ( $t = -1.907$ ,  $p = 0.031$ ), but not for priority ( $t = 1.188$ ,  $p = 0.120$ ). Thus, we look to see if the frustration measure also satisfies Condition 3, and it does. When preparer frustration is included in the model, the timeliness/frame effect on items examined is no longer significant ( $F = 0.012$ ,  $p = 0.456$ , versus  $p = 0.019$  reported in Table 1).<sup>21</sup> We performed similar analyses for the time spent and number of errors discovered dependent measures. When frustration serves as the mediator, Condition 2 is met for both measures ( $p$ 's  $< 0.05$ ), as is Condition 3 ( $p$ 's  $> 0.37$ ). As with the number of evidence items examined, priority fails to satisfy Condition 2 when either the time or errors dependent measure is used ( $p$ 's  $> 0.16$ ). Thus, it appears that preparer frustration is the primary mechanism through which review note frame and review timeliness interact to affect preparer effort and performance.

*4.3.2. Dysfunctional Preparer Behavior: "Ghost Ticking".* The nature of our instrument allows us to determine whether an auditor has documented performance of procedures that he or she has not, in fact, performed. Referred to in the literature and in practice as "over-documentation", "premature sign-off", "power ticking", and "ghost ticking", this behavior is considered to be unethical and

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<sup>21</sup> Since the regression of evidence items on the priority measure approaches marginal significance, we also examined whether Condition 3 is met for this measure. Inclusion of priority in the model does not reduce the significance of the timeliness/frame effect on evidence items or either of the other dependent variables.

dysfunctional.<sup>22</sup> Prior research links this and other similar dysfunctional behavior (e.g., failing to report material evidence and biasing the sample selection) with employee frustration (Otley and Pierce [1996], Fox and Specter [1999]). Further, auditors perceive there to be little risk of ghost ticking being exposed (Pierce and Sweeney [2006]). Thus, although the penalties may be high if they are caught, they may choose to over-document (Fox and Specter [1999]), particularly when they feel frustrated with their reviewer. While this prior literature primarily includes anecdotes and survey-based evidence (i.e., has not *demonstrated* such behavior), it suggests that reviewer delay (which is expected to lead to frustration) will increase preparers' use of dysfunctional behavior.

We measure ghost ticking in three ways: (1) whether or not a participant engages in any over-documentation, (2) the total number of evidence items over-documented by an individual, and (3) the proportion of over-documentation a preparer engages in (i.e., the number of evidence items over-documented divided by the total number of evidence items accessed). Because ghost ticking is considered to be an unethical behavior, and a substantial body of research suggests that women tend to behave more ethically than men in business contexts (Beltrami, Peterson, and Kozmetsky [1984], Ameen, Guffey, and McMillan [1996], Ritter [2006]), we include gender as a covariate in our model.

We use a logistic regression to examine our first measure of over-documentation because it is a binary measure (i.e., participants either do or do not engage in over-documentation). We find that 33% of all auditors in this study over-documented some aspect of their work (e.g., included a tickmark which indicated all invoices in a particular testing area were examined when, in fact, some were not accessed). Results show that significantly more participants over-documented in the delayed condition (40%) than in the timely condition (26%) (Wald Chi-Square = 2.521,  $p = 0.056$ ,

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<sup>22</sup> See <http://goingconcern.com/2010/02/sec-deadline-watch-a-teaching-moment-for-young-auditors/> for recent anecdotal evidence that the behavior persists in practice.

non-tabulated).<sup>23</sup> Gender is a significant covariate (Wald Chi-Square's = 5.549,  $p = 0.009$ ), with 41% of male participants over-documenting compared to 20% of female participants. Our second measure of over-documentation (the total number of evidence items over-documented) also supports the supposition that a delayed review leads to increased over-documentation. Participants in the delayed condition over-documented an average of 3.14 items compared to 1.91 items for the timely condition ( $F = 6.112$ ,  $p < 0.001$ , non-tabulated). Male participants over-documented more items than female participants (3.05 compared to 1.64,  $p = 0.099$ ). Finally, our third measure provides consistent results, with the mean percentage of over-documentation greater for delayed preparers (18.5%) than for those in the timely condition (7.3%,  $F = 6.228$ ,  $p < 0.001$ ). These results suggest audit firms may want to consider implementing some level of sampled reperformance of preparer work, particularly when time delays are unavoidable.

##### *5. Discussion and Concluding Remarks*

Recently, the PCAOB expressed concern regarding the effectiveness of audit review and supervisory practices and asked for recommendations for improving the supervision of audit field work (PCAOB [2010]). If audit review fails to correct any errors or biases in the work of preparers, it can have serious detrimental effects on audit quality and can lead to audit failure and impaired financial reporting quality (Asare and McDaniel [1996], Nelson and Tan [2005]). In our study, we explore the review note closing phase of the review process, in which preparers respond to and “close” notes left by reviewers, in an attempt to understand factors that affect preparer follow-through during this important phase. We examine two factors over which reviewers maintain substantial control: review timeliness and review note frame.

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<sup>23</sup> Our percentage of over-documentation is consistent with early survey research on this topic (see Alderman and Deitrick [1982]).

Our results suggest that providing a timely review can enhance preparer *effort* and that review timeliness and review note frame interact to affect preparer effort. Specifically, preparers receiving timely reviews examine more evidence items and spend more time closing review notes than those receiving delayed reviews. In addition, conclusion-framed review notes lead to higher effort levels than documentation-framed review notes when the review is timely. Interestingly, preparer *performance* is only enhanced by the combination of both a timely review and conclusion-framed review notes. We conduct mediation analyses and find that preparer frustration with the reviewer mediates the timeliness/frame effect on preparer effort and performance. Further, some auditors engaged in dysfunctional behavior by documenting procedures they had not performed (i.e., over-documentation or “ghost ticking”). However, preparers were significantly less likely to over-document when their review was timely.

Our findings have implications for both practice and future research. While some prior studies show that preparer errors/biases can flow through the review process undetected (e.g., Asare and McDaniel [1996], Yip-Ow and Tan [2001], Asare, Haynes, and Jenkins [2007], Agoglia, Beaudoin, and Tsakumis [2009], Agoglia, Hatfield, and Brazel [2009]), we find that, even when a reviewer identifies issues, they may not get appropriately investigated and resolved by the preparer. We find that how and when a reviewer relays a request for additional work can have consequences for preparer follow-through and, in turn, overall audit and financial reporting quality. These findings provide important insights to audit firms. For example, given that reviewers maintain substantial control over these two factors, firms can make reviewers aware of the potential consequences of their review timing and style choices through reviewer training and the way in which they set related firm policy. Further, our study also informs standard setters, such as the PCAOB, regarding supervisor behavior that can result in diminished preparer effort and performance. For instance, the PCAOB’s own issuance of AS3 may have unanticipated consequences on audit quality if it results in

preparers focusing more on the formalities of the documentation in the workpapers than on the conclusions that the workpapers support.

This study also contributes to the extant literature on time delays by examining the effect of delays on professionals in a hierarchical, time sensitive organizational culture, finding that the status of the collaborator does not mitigate the negative implications of time delays in this setting. We extend the emphasis framing literature by demonstrating that frustration toward the message framer can reduce the impact of an emphasis frame. Further, while prior research in both emphasis framing and time delays has primarily focused on self-reported attitudes and opinions, our study extends both literature streams by examining how these factors affect *effort* and *performance* on a relatively complex task. While we examine two factors that can influence preparer effort and performance, future research can explore other factors that have the potential to influence preparer follow-through, as well as the use of dysfunctional behaviors, in this critical stage of review (e.g., preparer experience and ability, reviewer rank and reputation, client risk and complexity, the use of decision aids, setting a realistic turn-around expectation when delay is unavoidable, time pressure, and other affect-inducing reviewer behavior). Such research will further our understanding of the factors that influence whether, to what extent, and how effectively preparers “close the loop” on issues identified by their reviewers.

## REFERENCES

- AGOGLIA, C. P., C. BEAUDOIN, AND G. T. TSAKUMIS. "The Effect of Documentation Structure and Task-Specific Experience on Auditors' Ability to Identify Control Weaknesses." *Behavioral Research in Accounting* 21 (2009): 1-17.
- AGOGLIA, C. P., J. F. BRAZEL, R. C. HATFIELD, AND S. B. JACKSON. "The Effect of Risk of Misstatement and Workload Pressure on the Choice of Workpaper Review Format." *Auditing: A Journal of Practice and Theory* 29 (2010): 27-43.
- AGOGLIA, C. P., R. C. HATFIELD, AND J. F. BRAZEL. "The Effect of Audit Review Format on Review Team Judgments." *Auditing: A Journal of Practice and Theory* 28 (2009): 95-111.
- AGOGLIA, C. P., T. KIDA, AND D. HANNO. "The Effects of Alternative Justification Memos on the Judgments of Audit Reviewees and Reviewers." *Journal of Accounting Research* 41 (2003): 33-46.
- ALDERMAN, C. W., AND J. W. DEITRICK. "Auditors' Perceptions of Time Budget Pressures and Premature Sign-Offs: A Replication and Extension." *Auditing: A Journal of Practice and Theory* (1982): 54-68.
- AMEEN, E. C., D. M. GUFFEY, AND J. J. MCMILLAN. "Gender Differences in Determining the Ethical Sensitivity of Future Accounting Professionals." *Journal of Business Ethics* 15 (1996): 591-597.
- AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS (AICPA). *Statement on Quality Control Standards No. 1. Systems of Quality Control for a CPA Firm*. 1979.
- AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS (AICPA). *Professional Standards*. Chicago, IL: Commerce Clearing House, 1995.
- ASARE, S. K., C. M. HAYNES, AND J. G. JENKINS. "The Effects of Client and Preparer Risk Factors on Workpaper Review Effectiveness." *Behavioral Research in Accounting* 19 (2007): 1-17.
- ASARE, S. K., AND L. S. MCDANIEL. "The Effects of Familiarity with the Preparer and Task Complexity on the Effectiveness of the Audit Review Process." *The Accounting Review* 71 (1996): 139-159.
- BALLOU, B. "The Relationship between Auditor Characteristics and the Nature of Review Notes for Analytical Procedure Working Papers." *Behavioral Research in Accounting* 13 (2001): 25-48.
- BAMBER, E. M. AND J. H. BYLINSKI. "The Audit Team and The Audit Review Process: An Organizational Approach." *Journal of Accounting Literature* 1 (1982): 33-58.

- BARON, R. M. AND D. A. KENNY. "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations." *Journal of Personality and Social Psychology* 51 (1986): 1173-1182.
- BELTRAMI, R. F., R. A. PETERSON, AND G. KOZMETSKY. "Concerns of College Students Regarding Business Ethics." *Journal of Business Ethics* 3 (1984): 195-200.
- BLOUNT, S., AND G. A. JANICIK. "Getting and Staying In-Pace: The "In-Synch" Preference and its Implications for Work Groups." *Toward a Phenomenology of Groups and Group Membership* 4 (2002): 235-266.
- BRAZEL, J. F., C. P. AGOGLIA, AND R. C. HATFIELD. "Electronic vs. Face-to-Face Review: The Effects of Alternative Forms of Review on Auditors' Performance." *The Accounting Review* 79 (2004): 949-966.
- BRONSON, S. N., C. E. HOGAN, M. F. JOHNSON, AND K. RAMESH. "Unintended Consequences of PCAOB Auditing Standards Nos. 2 and 3 on the Reliability of Preliminary Earnings Releases." *Journal of Accounting and Economics* (2010): (in press).
- BUCKLESS, F. A., AND S. P. RAVENSCROFT. "Contrast Coding: A Refinement of ANOVA in Behavioral Analysis." *The Accounting Review* 65 (1990): 933-945.
- DEZOORT, F. T., AND A. T. LORD. "A Review and Synthesis of Pressure Effects Research in Accounting." *Journal of Accounting Literature* 16 (1997): 28-85.
- DRUCKMAN, J. N. "The Implications of Framing Effects for Citizen Competence." *Political Behavior* 23 (2001): 226-256.
- DUNN, J. R., AND M. E. SCHWEITZER. "Feeling and Believing: The Influence of Emotion on Trust." *Journal of Personality and Social Psychology* 88 (2005): 736-748.
- FORGAS, J. P., AND J. M. GEORGE. "Affective Influences on Judgments and Behavior in Organizations: An Information Processing Perspective." *Organizational Behavior and Human Decision Processes* 86 (2001): 3-34.
- FOX, S., AND P. E. SPECTOR. "A Model of Work Frustration-Aggression." *Journal of Organizational Behavior* 20 (1999): 915-931.
- FREDERICKSON, J. R., S. A. PEFFER, AND J. PRATT. "Performance Evaluation Judgments: Effects of Prior Experience Under Different Performance Evaluation Schemes and Feedback Frequencies." *Journal of Accounting Research* 37 (1999): 151-165.
- GIBBINS, M., AND K. T. TROTMAN. "Audit Review: Managers' Interpersonal Expectations and Conduct." *Contemporary Accounting Research* 19 (2002): 411-444.
- GOLD, A., U. GRONEWOLD, and S. SALTERIO. "The Impact of Error-Management Climate, Error Type and Error Originator on Auditors' Reporting Errors Discovered on Audit Work Papers." Working Paper, Erasmus University, 2010.

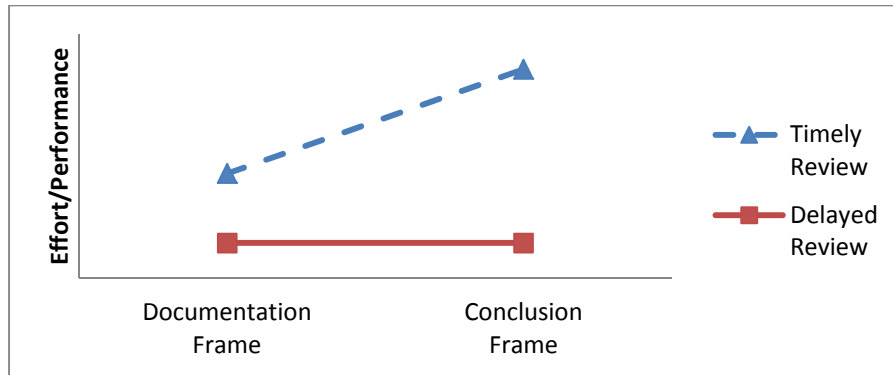
- HALES, J. "Directional Preferences, Information Processing, and Investors' Forecasts of Earnings." *Journal of Accounting Research* 45 (2007): 607-628.
- HALLAHAN, K. "Seven Models of Framing: Implications for Public Relations." *Journal of Public Relations Research* 11 (1999): 205-242.
- HAMMERSLEY, J. S., E. M. BAMBER, AND T. CARPENTER. "The Influence of Documentation Specificity and Priming on Auditors' Fraud Risk Assessments and Evidence Evaluation Decisions." *The Accounting Review* 85 (2010): 547-571.
- HERRBACH, O. "The Art of Compromise? The Individual and Organisational Legitimacy of "Irregular Auditing"." *Accounting, Auditing, & Accountability Journal* 18 (2005): 390-409.
- HIRST, D. E., L. KOONCE, AND S. VENKATARAMAN. "How Disaggregation Enhances the Credibility of Management Earnings Forecasts." *Journal of Accounting Research* 45 (2007): 811-837.
- HOUSTON, R. W. "The Effects of Fee Pressure and Client Risk on Audit Seniors' Time Budget Decisions." *Auditing: A Journal of Practice & Theory* 18 (1999): 70-86.
- HOFFMAN, V. B., J. R. JOE, AND D. V. MOSER. "The Effect of Constrained Processing on Auditors' Judgments." *Accounting, Organizations and Society* 28 (2003): 699-714.
- HOFFMAN, V. B., AND M. F. ZIMBELMAN. "Do Strategic Reasoning and Brainstorming Help Auditors Change Their Standard Audit Procedures in Response to Fraud Risk?" *The Accounting Review* 84 (2009): 811-837.
- JOHNSTON, H., W. D. LINDSAY, AND F. PHILLIPS. "Undetected Deviations in Tests of Controls: Experimental Evidence of Nonsampling Risk." *Canadian Accounting Perspectives* 2 (2003): 113-134.
- KADOUS, K. "The Effects of Audit Quality and Consequence Severity on Juror Evaluations of Auditor Responsibility for Plaintiff Losses." *The Accounting Review* 75 (2000): 327-341.
- KADOUS, K., S. J. KENNEDY, AND M. E. PEECHER. "The Effect of Quality Assessment and Directional Goal Commitment on Auditors' Acceptance of Client-Preferred Accounting Methods." *The Accounting Review* 78 (2003): 759-778.
- KAPLAN, R. L. "The Mother of All Conflict: Auditors and Their Clients." *Illinois Public Law Research Paper No. 04-13* (2004).
- KIDA, T. "The Impact of Hypothesis-Testing Strategies on Auditors' Use of Judgment Data." *Journal of Accounting Research* 22 (1984): 332-340.
- KNECHEL, W. R. "The Business Risk Audit: Origins, Obstacles and Opportunities." *Accounting, Organizations and Society* 32 (2007): 383-408.

- LAMBERT, T. A., K. L. JONES, AND J. F. BRAZEL. "Unintended Consequences of Accelerated Filings: Are Mandatory Reductions in Audit Quality Associated with Reductions in Earnings Quality?" Working Paper, University of Massachusetts Amherst, 2010.
- MESSIER, W. F. JR., V. OWHOSO, AND C. RAKOVSKI. "Can Audit Partners Predict Subordinates' Ability to Detect Errors?" *Journal of Accounting Research* 46 (2008): 1241-1264.
- MESSIER, W. F. JR., S. M. GLOVER, AND D. F. PRAWITT. *Auditing & Assurance Services: A Systematic Approach*. 6<sup>th</sup> edition, New York, NY: McGraw-Hill/Irwin, 2008.
- MILLER, C. L., D. B. FEDOR, AND R. J. RAMSAY. "Effects of Discussion of Audit Reviews on Auditors' Motivation and Performance." *Behavioral Research in Accounting* 18 (2006): 135-146.
- MOON, Y. "The Effects of Physical Distance and Response Latency on Persuasion in Computer-Mediated Communication and Human-Computer Communication." *Journal of Experimental Psychology: Applied* 5 (1999): 379-392.
- NELSON, T. E., AND Z. M. OXLEY. "Issue Framing Effects on Belief Importance and Opinion." *The Journal of Politics* 61 (1999): 1040-1067.
- NELSON, T. E., Z. M. OXLEY, AND R. A. CLAWSON. "Toward a Psychology of Framing Effects." *Political Behavior* 19 (1997): 221-246.
- NELSON, M., AND H. TAN. "Judgment and Decision Making Research in Auditing: A Task, Person, and Interpersonal Interaction Perspective." *Auditing: A Journal of Practice & Theory* 24 (Supplement 2005): 41-71.
- NUTT, P. C. "Framing Strategic Decisions." *Organization Science* 9 (1998): 195-216.
- O'KEEFE, DANIEL J. "Message Properties, Mediating States, and Manipulation Checks: Claims, Evidence, and Data Analysis in Experimental Persuasive Message Effects Research." *Communication Theory* 13 (2003): 251-274.
- OTLEY, D. T., AND B. J. PIERCE. "Auditor Time Budget Pressure: Consequences and Antecedents." *Accounting, Auditing, & Accountability Journal* 9 (1996): 31-58.
- PEECHER, M. E., AND I. SOLOMON. "Theory and Experimentation in Studies of Audit Judgments and Decisions: Avoiding Common Research Traps." *International Journal of Auditing* 5 (2001): 193-203.
- PIERCE, B., AND B. SWEENEY. "Perceived Adverse Consequences of Quality Threatening Behaviour in Audit Firms." *International Journal of Auditing* 10 (2006): 19-39.
- PITMAN, J. A., AND S. FORTIN. "Auditor Choice and the Cost of Debt Capital for Newly Public Firms." *Journal of Accounting and Economics* 37 (2004): 113-136.

- PUBLIC OVERSIGHT BOARD (POB). Panel on Audit Effectiveness. Appendix F – Analysis of SEC AAER. Washington, DC: POB, 2000.
- PUBLIC COMPANY ACCOUNTING OVERSIGHT BOARD (PCAOB). Application of the “Failure to Supervise Provision of the Sarbanes-Oxley Act of 2002 and Solicitation of Comment on Rulemaking Concepts. Remarks delivered by Steven B. Harris at PCAOB Open Board Meeting, Washington, D.C. August 5, 2010. Washington, D.C.: PCAOB, 2010a.
- PUBLIC COMPANY ACCOUNTING OVERSIGHT BOARD (PCAOB). Auditing Standard No. 3, Audit Documentation. Washington, DC: PCAOB, 2004.
- PUBLIC COMPANY ACCOUNTING OVERSIGHT BOARD (PCAOB). PCAOB Rulemaking Docket Matter No. 31, Application of the “Failure to Supervise” Provision of the Sarbanes-Oxley Act of 2002 and Solicitation of Comment on Rulemaking Concepts. Washington, DC: PCAOB, 2010b.
- RAMSAY, R. J. “Senior/Manager Differences in Audit Workpaper Review Performance.” *Journal of Accounting Research* 32 (1994): 127-135.
- RICH, J. S., I. SOLOMON, AND K. T. TROTMAN. “The Audit Review Process: A Characterization from the Persuasion Perspective.” *Accounting, Organizations and Society* 22 (1997a): 481-505.
- RICH, J. S., I. SOLOMON, AND K. T. TROTMAN. “Multi-Auditor Judgment/Decision Making Research: A Decade Later.” *Journal of Accounting Literature* 16 (1997b): 86-126.
- RITTER, B. A. “Can Business Ethics be Trained? A Study of the Ethical Decision-making Process in Business Students.” *Journal of Business Ethics* 68 (2006): 153-164.
- ROEBUCK, P., AND K. T. TROTMAN. “A Field Study of the Review Process.” *Abacus* 28 (1992): 200-210.
- ROSNOW, R. L., AND R. ROSENTHAL. ““Some Things You Learn Aren’t So”: Cohen’s Paradox, Asch’s Paradigm, and the Interpretation of Interaction.” *Psychological Science* 6 (1995): 3-9.
- SARBANES-OXLEY ACT of 2002, Pub. L. No. 107-204, 116 Stat. 745 (codified as amended in scattered sections of 15 U.S.C.).
- SECURITIES AND EXCHANGE COMMISSION (SEC). Revisions to Accelerated Deadlines for Filing Periodic Reports. Release No. 33-8644, 2005.
- SEDOR, L. M. “An Explanation for Unintentional Optimism in Analysts’ Earnings Forecasts.” *The Accounting Review* 77 (2002): 731-753.
- SHELDON, O. J., M. C. THOMAS-HUNT, AND C. A. PROELL. “When Timeliness Matters: The Effect of Status on Reactions to Perceived Time Delay Within Distributed Collaboration.” *Journal of Applied Psychology* 91 (2006): 1385-1395.

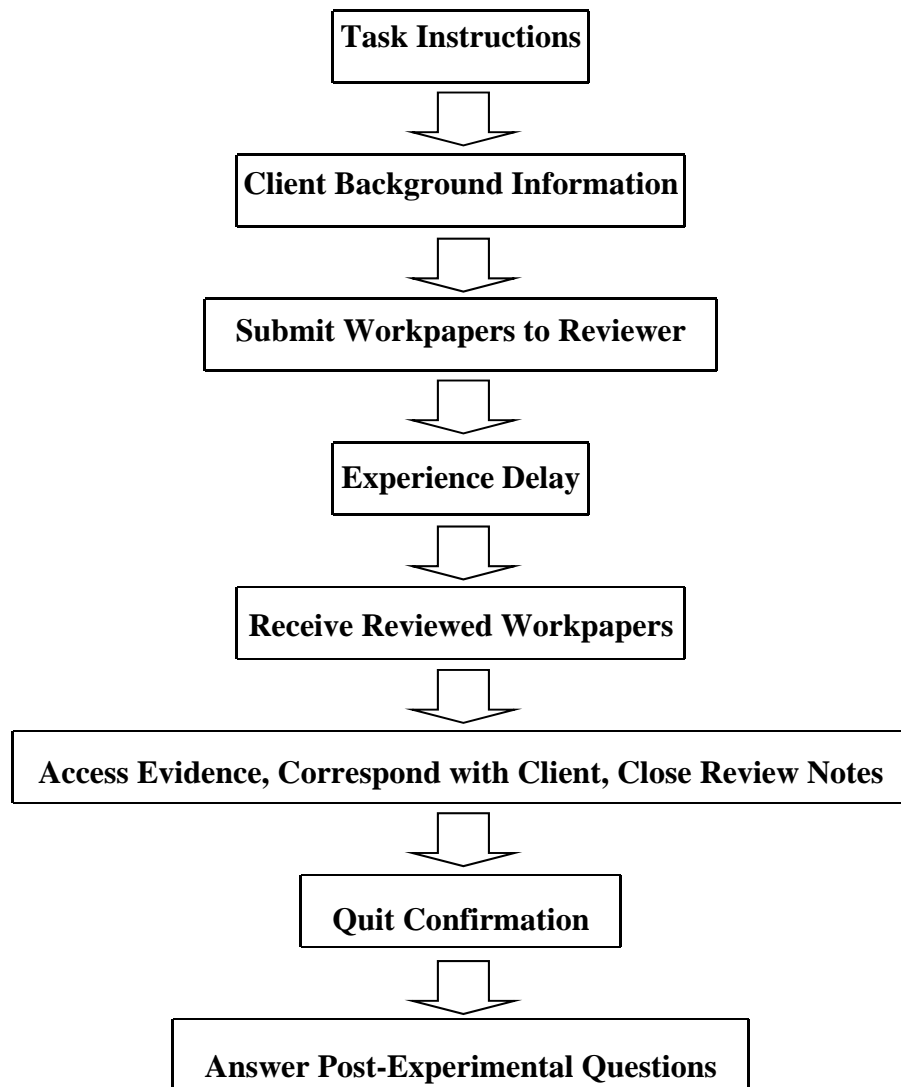
- SNIDERMAN, P. M., AND S M. THERIAULT. "The Structure of Political Argument and the Logic of Issue Framing." *Studies in Public Opinion: Attitudes, Nonattitudes, Measurement Error, and Change*, edited by William E. Saris and Paul M. Sniderman. 2004.
- TAN, H., AND K. T. TROTMAN. "Reviewers' Responses to Anticipated Stylization Attempts by Preparers of Audit Workpapers." *The Accounting Review* 78 (2003): 581-604.
- TVERSKY, A., AND D. KAHNEMAN. "The Framing of Decisions and the Psychology of Choice." *Science* 211 (1981): 453-458.
- YIP-OW, J., AND H. T. TAN. "Effects of the Preparer's Justification on the Reviewer's Hypothesis Generation and Judgment in Analytical Procedures." *Accounting, Organizations and Society* 25 (2000): 203-215.
- WAGGONER, J. B. "Auditor Detection Rates in an Internal Control Test." *Auditing: A Journal of Practice & Theory* 9 (1990): 77-89.
- WILLETT, C., AND M. PAGE. "A Survey of Time Budget Pressure and Irregular Auditing Practices Among Newly Qualified UK Chartered Accountants." *The British Accounting Review* 28 (1996): 101-120.
- WIONGRAD, B. N., J. S. GERSON, AND B. L. BERLIN. "Audit Practices of PricewaterhouseCoopers." *Auditing: A Journal of Practice & Theory* 19 (2000): 175-182.
- WOLF, F. M. "The Nature of Managerial Work: An Investigation of the Work of the Audit Manager." *The Accounting Review* 56 (1981): 861-881.

**Figure 1**  
*Hypothesized Ordinal Interaction of Review Timeliness and Review Note Frame for Preparer Effort and Performance Closing Review Notes*



H1 and H2 predict that preparer follow-through on review notes is jointly affected by review timeliness and review note frame. First, we expect a timely review to lead to better effort and performance. Further, relative to a documentation frame, we expect a conclusion frame to result in better preparer follow-through with a timely review, but not when the review is delayed.

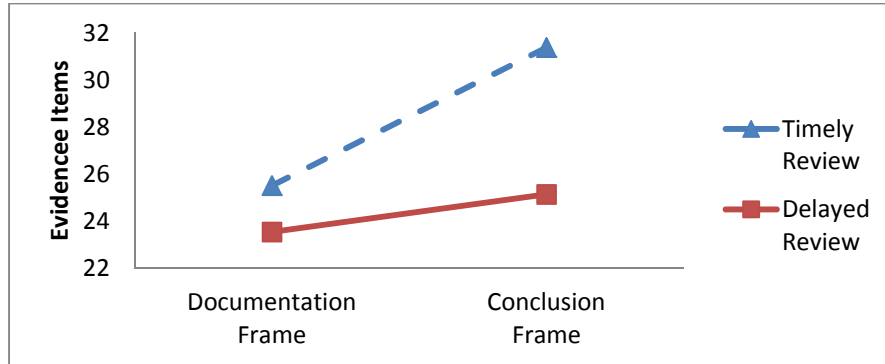
**Figure 2**  
*Instrument Flow*



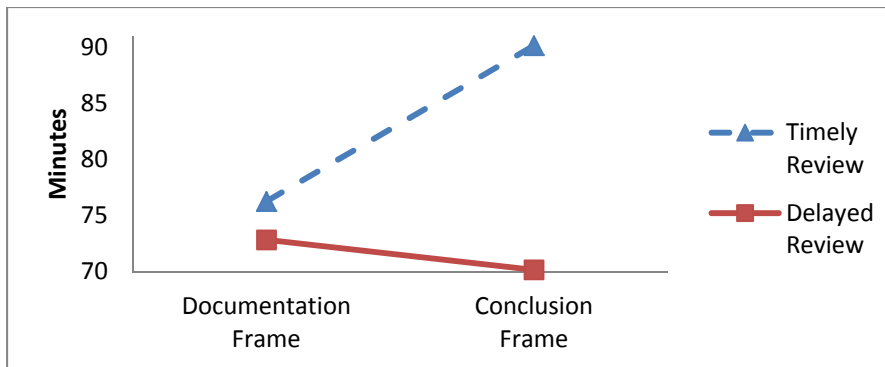
**Figure 3**

*Effect of Reviewer Delay and Review Note Frame on Preparer Effort and Performance*

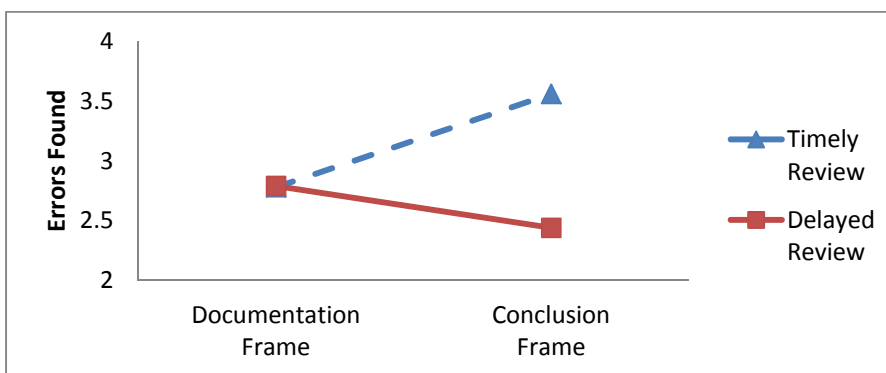
**Panel A: Results using number of evidence items documented as the dependent variable**



**Panel B: Results using time spent as the dependent variable**



**Panel C: Results using number of errors found as the dependent variable**



**Table 1**  
**H1: Number of Evidence Items Examined (Effort Measure One)**

**Panel A: Mean (standard deviation) number of evidence items examined by the preparer**

	Conclusion Frame	Documentation Frame	Row Means (SD)
Timely Review Mean (SD)	Cell 1 31.38 (9.55) n = 16	Cell 2 25.50 (9.86) n = 18	28.26 (10.02)
Delayed Review Mean (SD)	Cell 3 25.13 (10.42) n = 16	Cell 4 23.53 (10.65) n = 19	24.26 (10.42)
Column Means (SD)	28.25 (10.33)	24.49 (10.18)	

**Panel B: Conventional ANOVA results**

<u>Independent Variable</u>	<u>df</u>	<u>F-Statistic</u>	<u>p-value</u> <sup>a</sup>
Review Timeliness	1	2.818	0.049
Review Note Frame	1	2.237	0.132
Interaction	1	0.762	0.193

**Panel C: Planned contrast**

**H1 Test:** Preparer effort will be highest in the timely review/conclusion-frame condition, lower in the timely review/documentation-frame condition and lowest in the two delayed review conditions (contrast weights are +3, +1, -2, and -2, respectively).

<u>Source of Variation</u>	<u>F-Statistic</u>	<u>p-value</u> <sup>a</sup>
Contrast	4.490	0.019
Residual <sup>b</sup>	0.419	0.740

<sup>a</sup> p-values are one-tailed when there are directional expectations (i.e., expectations relating to the review timeliness main effect and the interaction predicted by H1). All other p-values are two-tailed.

<sup>b</sup> The residual sum of squares represents the between-group variance not explained by the contrast weights used to test the hypotheses. An insignificant F-Statistic for the residual indicates that the specified contrast is a good fit (Hirst et al. 2007).

**Table 2**  
**H1: Time Spent (Effort Measure Two)**

**Panel A: Mean (standard deviation) time spent by the preparer (in minutes)**

	Conclusion Frame	Documentation Frame	Row Means
Timely Review	Cell 1	Cell 2	
Mean	90.20	76.26	(SD)
(SD)	(32.68)	(33.56)	82.82
	n=16	n=18	(33.40)
Delayed Review	Cell 3	Cell 4	
Mean	70.16	72.84	
(SD)	(34.00)	(39.84)	71.61
	n=16	n=19	(36.77)
Column Means (SD)	80.18 (34.34)	74.50 (36.44)	

**Panel B: Conventional ANOVA results**

<u>Independent Variable</u>	<u>df</u>	<u>F-Statistic</u>	<u>p-value<sup>a</sup></u>
Review Timeliness	1	2.308	0.067
Review Note Frame	1	0.208	0.650
Interaction	1	1.129	0.146

**Panel C: Planned contrast**

**H1 Test:** Preparer effort will be highest in the timely review/conclusion-frame condition, lower in the timely review/documentation-frame condition and lowest in the two delayed review conditions (contrast weights are +3, +1, -2, and -2, respectively).

<u>Source of Variation</u>	<u>F-Statistic</u>	<u>p-value<sup>a</sup></u>
Contrast	2.752	0.051
Residual <sup>b</sup>	0.119	0.949

<sup>a</sup> p-values are one-tailed when there are directional expectations (i.e., expectations relating to the review timeliness main effect and the interaction predicted by H1). All other p-values are two-tailed.

<sup>b</sup> The residual sum of squares represents the between-group variance not explained by the contrast weights used to test the hypotheses. An insignificant F-Statistic for the residual indicates that the specified contrast is a good fit.

**Table 3**  
**H2: Errors Found (Performance Measure)**

**Panel A: Mean (standard deviation) errors found by the preparer**

	Conclusion Frame	Documentation Frame	Row Means
Timely Review	Cell 1	Cell 2	
Mean	3.56	2.78	(SD)
(SD)	(1.21)	(1.67)	3.15
	n=16	n=18	(1.50)
Delayed Review	Cell 3	Cell 4	
Mean	2.44	2.79	
(SD)	(1.59)	(1.55)	2.63
	n=16	n=19	(1.56)
Column Means (SD)	3.00 (1.50)	2.78 (1.58)	

**Panel B: Conventional ANOVA results**

<u>Independent Variable</u>	<u>df</u>	<u>F-Statistic</u>	<u>p-value<sup>a</sup></u>
Review Timeliness	1	2.301	0.067
Review Note Frame	1	0.348	0.558
Interaction	1	2.399	0.063

**Panel C: Contrast test for H2 main effect and interaction**

**Test:** Preparer performance will be highest in the timely review/conclusion-frame condition, lower in the timely review/documentation-frame and lowest in the two delayed review conditions (contrast weights are +3, +1, -2, and -2, respectively).

<u>Source of Variation</u>	<u>F-Statistic</u>	<u>p-value<sup>a</sup></u>
Contrast	3.640	0.031
Residual <sup>b</sup>	0.363	0.783

**Panel D: Contrast test for H2 interaction only**

**Test:** Preparer performance will be higher in the timely review/conclusion-frame condition than in the other three conditions (contrast weights are +3, -1, -1, -1).

<u>Source of Variation</u>	<u>F-Statistic</u>	<u>p-value<sup>a</sup></u>
Contrast	4.248	0.022
Residual <sup>b</sup>	0.416	0.742

<sup>a</sup> p-values are one-tailed when there are directional expectations (i.e., expectations relating to the review timeliness main effect and the interaction predicted by H1). All other p-values are two-tailed.

<sup>b</sup> The residual sum of squares represents the between-group variance not explained by the contrast weights used to test the hypotheses. An insignificant F-Statistic for the residual indicates that the specified contrast is a good fit.

**Appendix**  
**Summary of Review Notes** (frame manipulation in bold, italics where applicable)

Review Note #	Documentation Frame	Conclusion Frame
1	Please adjust date in the procedures to include 12/31/08.	
2	Number does not agree to number on “Summary GL” tab. Number here should agree to total of the detail from which you made selections.	
3	Please perform more procedures on the unconfirmed selections (denoted by your tickmark b). See the audit program for guidance (step 1F). We need to make sure <i>all of the necessary procedures are documented.</i>	Please perform more procedures on the unconfirmed selections (denoted by your tickmark b). See the audit program for guidance (step 1F). We need to make sure <i>that all of these receivables are valid.</i>
4	Please check firm guidance to make sure that a haphazard sample is appropriate for 10 selections.	
5	Please check to see that write-offs were properly authorized. We need to make sure that <i>all of the steps on the audit program have been documented.</i>	Please check to see that write-offs were properly authorized. We need to make sure that <i>we arrive at the proper conclusion regarding their authorization assertion.</i>
6	We still need to perform additional cut-off procedures due to this error (see firm guidance on errors found during test of details). We need to make sure our <i>documentation holds up.</i>	We still need to perform additional cut-off procedures due to this error (see firm guidance on errors found during test of details). We need to make sure our <i>conclusions (regarding cut-off) hold up.</i>
7	We use PY balance to set our expectation of the allowance. Make sure that this is an appropriate basis for our expectation or see if you can come up with a better one. We really need to make sure <i>that we document a justifiable expectation.</i>	We use PY balance to set our expectation of the allowance. Make sure that this is an appropriate basis for our expectation or see if you can come up with a better one. We really need to make sure <i>we use an expectation that adequately tests the appropriateness of the allowance.</i>