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## **When Auditors' Skeptical Judgments do not lead to Skeptical Actions**

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WHEN AUDITORS' SKEPTICAL JUDGMENTS DO NOT LEAD TO SKEPTICAL  
ACTIONS

by

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Bachelor of Science  
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Submitted in Partial Fulfillment of the Requirements

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## DEDICATION

I dedicate this work to my grandfather, Dr. Marion Wells, who inspired me to pursue this career path. Thank you for always encouraging me to ask questions and to live a life of curiosity and learning. I also dedicate this work to my mother, Beth Velandra, who gave me everything I ever needed to succeed. Thank you for passing on your strength and determination to me. Additionally, I dedicate this work to my husband, Craig, who challenges me to be a better person each and every day. None of this would be possible without your support and encouragement.

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## ABSTRACT

Auditors are required to maintain professional skepticism through the course of an audit engagement. Professional skepticism is maintained through both skeptical judgment and observable skeptical behavior (skeptical action). However, auditors who exhibit professional skepticism in judgment do not always exhibit professional skepticism in action. The present study examines whether social presence alters the likelihood of auditors acting on skeptical judgments by utilizing an experimental setting where participants interact with a hypothetical client using four different communication mediums varying in social presence. Results suggest that auditor-client interactions high in perceived social presence inhibit auditors from acting on skeptical judgments compared to auditor-client interactions that are low in perceived social presence. Results extend literature on auditor-client interactions, professional skepticism, and communication medium while also informing regulator concern over inappropriately applied, or even absent, professional skepticism.

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## CHAPTER 1

### INTRODUCTION

Professional skepticism is defined as “an attitude that includes a questioning mind and a critical assessment of audit evidence” and should be maintained for the duration of the audit (PCAOB 2016, Par. .07; ISA 200). However, regulators note that professional skepticism is often inappropriately applied due to both client-related factors (e.g., trust in client management) and audit factors (e.g., time pressure) (PCAOB 2013). An important component of professional skepticism is the distinction between a judgment and an action (Nelson 2009). While skeptical judgment is an antecedent of observable skeptical behavior, increases in skeptical judgment do not always culminate in skeptical action (Shaub and Lawrence 1999; Nelson 2009; Hurtt, Brown-Liburd, Earley, and Krishnamoorthy 2013; Ortegren, Downen, and Kim 2016).<sup>1</sup> The professional skepticism literature has recognized the importance of skeptical judgment as a necessary component of skeptical behavior (Nelson 2009); however, the empirical question of when auditors do (and do not) appropriately take skeptical action as a consequence of increased skeptical judgment remains largely unanswered. The present study speaks to the link between skeptical judgment and skeptical action by examining whether the social presence

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<sup>1</sup> For example, one Securities and Exchange Commission (SEC) filing in response to PCAOB inspections determined an auditor maintained an overall lack of due professional care, specifically concerning professional skepticism (SEC 2013). One particular instance discussed in the proceedings described a situation where professional skepticism was enhanced via judgment, but the auditor did not act on the judgment. The auditor admitted to an enhanced skeptical judgment due to past experience with the client and a specific “trouble” account. However, the auditor did not act on this judgment by sending the appropriate requests to confirm material balances.

perceived by the auditor during an interaction with the client affects the likelihood of skeptical action.

Social presence theory suggests judgments and actions are affected by communication medium (Short, Williams, and Christie 1976). Social presence is defined as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships” (p. 65). Many elements of communications affect the level of social presence perceived by interacting individuals, including feedback, verbal cues (e.g., tone), and nonverbal cues (e.g., eye contact), such that the perceived level of social presence differs for an interaction depending on both the communication medium and the individual perceptions of those involved in the interaction (Short et al. 1976; Gunawardena and Zittle 1997; Tu and McIsaac 2002). In fact, social presence may be affected by the mere presence of another individual, even without direct interaction (Zajonc 1965; Argo, Dahl, and Manchanda 2005). Face-to-face interactions generally consist of more cues (verbal as well as nonverbal) than electronic interactions and are therefore high in social presence while electronic interactions are low in social presence (Short et al. 1976). However, computer-mediated communication can be altered to increase social presence, such as inclusion of nonverbal cues (e.g., emoticons) or affective responses (Gunawardena and Zittle 1997).

The present study examines four levels of communication medium (email, instant messaging, video conferencing, and face-to-face) in order to determine the effect of perceived social presence on auditor professional skepticism. The first prediction is that the link between skeptical judgment and skeptical action is influenced by perceived social presence, such that auditors who interact with the client via communication mediums

high in social presence (e.g., face-to-face) will be less likely to act on their skeptical judgment compared to those who interact with the client via communication mediums low in social presence (e.g., email). The second prediction is that auditors who perceive high social presence in an auditor-client interaction are less likely to take skeptical action than auditors who perceive low social presence.

One hundred and eighty four student participants perform a simple analytical procedures task where they inquire of the client regarding unexpected fluctuations. Importantly, participants receive expectations for the analytical procedures that are contradicted by the client's response. Therefore, the experimental setting is one in which skepticism, particularly skeptical judgment, should increase. Participants interact with the client face-to-face, via video conferencing, via instant messaging/chat, or via email. In addition to a manipulation of social presence, participants also complete a measure of social presence. The primary dependent variables include participant assessments of the likelihood of a material misstatement (skeptical judgment) and the likelihood of performing additional procedures, such as additional testing or further inquiry (skeptical action).

Results support the prediction that perceived social presence influences auditors from acting on skeptical judgments. Namely, while skeptical judgment is unaffected by the communication medium of the auditor-client interaction, and skeptical judgment is unaffected by participant assessments of perceived social presence, skeptical action depends on participant perceived social presence of the auditor-client interaction.<sup>2</sup>

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<sup>2</sup> As discussed in detail in the methods and results sections, both a manipulation of social presence (communication medium) and a measure of participant perceived social presence is used to determine the effect of social presence on auditor skeptical action.

Specifically, participants who indicated feelings of high social presence are significantly less likely to take skeptical action than participants who indicated feelings of low social presence. These results hold for several dependent variable measures of skeptical action. This finding suggests that novice auditors are susceptible to social aspects of auditor-client interactions affecting their skeptical action. Additionally, skeptical judgment is affected by the client inquiry itself, such that skeptical judgment collected after the client inquiry (regardless of condition) significantly decreased compared to the same skeptical judgment collected prior to the inquiry. This finding suggests that novice auditors tend to accept client explanations for unexpected fluctuations at face value.

Findings of the present study suggest perceived social presence is one possible contributor to inadequate professional skepticism (judgment or action) currently noted by regulators (PCAOB 2012). The present study addresses regulator concern for inappropriately applied professional skepticism by examining whether a lack of skeptical action is due to the auditor's perception of social presence when interacting with clients. By manipulating communication medium at four levels and measuring participant perceptions of social presence, the effects of varying degrees of social presence on auditor skeptical action can be examined in detail.<sup>3</sup> Additionally, the experiment used in the present study provides a situation where skeptical judgment should increase, which is frequently experienced by auditors in practice. Therefore, the present study directly tests whether the auditor's perceived social presence of a client inquiry affects the likelihood of auditors appropriately reacting to situations where skepticism should increase. Further,

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<sup>3</sup> While theory predicts that communication medium should affect social presence in a systematic manner (e.g., face-to-face is high social presence and email is low social presence), a measure of social presence is also collected in order to verify this prediction holds.

results of the present study speak to overall audit quality. Because auditor skeptical action differs depending on the perceived social presence of the auditor-client interaction, audit quality could be harmed by inappropriately applied, or even unapplied, professional skepticism. This could lead to clients strategically choosing a communication medium likely to produce high perceived social presence that leads to a decrease in auditor skeptical action.

While prior audit research has examined differences in auditor behavior related to communication medium types (e.g., Brazel, Agoglia, and Hatfield 2004), the settings examined are either specific to the review process (e.g., Payne, Ramsay, and Bamber 2010) or do not provide evidence related to auditor professional skepticism judgments and/or actions (e.g., Bennett and Hatfield 2013). Further, results of the present study show that while communication medium affects social presence, feelings of social presence are not developed based on the communication medium alone. Supplemental analyses show that prior experience, such as an internship, also affects feelings of social presence and the likelihood of skeptical action. Additionally, generational differences in communication medium usage, such as millennials relying on text-based forms of communication, likely affects perceived social presence for email interactions. Such perceptions might cause some individuals to perceive high social presence in email communications, a form generally considered low in the social presence literature (e.g., Tu 2000). The present study speaks to the younger generation of novice auditors who tend to prefer digital communication and to avoid in-person interactions (Hurley 2015). The study of this specific group of auditors is particularly important as novice auditors perform a variety of audit tasks throughout the audit (PwC 2015; Hawkins, Keune, and

Saunders 2016). Findings of the present study suggest that the specific communication medium of an auditor-client interaction does not necessarily lead to a lack of skeptical action; rather, the level of social presence felt by the auditor leads to inadequate professional skepticism. Because interactions low in perceived social presence result in a higher likelihood of skeptical action, novice auditors who perceive low social presence when interacting with the client are likely to maintain adequate skepticism in both judgment and action. However, novice auditors who feel high social presence, regardless of communication medium type, are likely to exercise inadequate professional skepticism. Given the generational difference in communication preferences between young people entering the workforce (i.e., the millennial generation) and those who have experience (i.e., generations such as Generation Y), the effect of communication medium in an audit setting is both important and timely.

Results of the present study extend the professional skepticism literature by providing evidence that the link between skeptical judgment and skeptical action does not always hold. Results of the present study also extend the growing body of communication medium literature in auditing (e.g., Saiewitz and Kida 2016). Due to the prevalence of auditor-client interactions during an audit engagement, insights into the effects of one aspect of this frequent interaction, communication medium, are important. Results suggest that auditors who perceive high social presence when interacting with the client take skeptical action less frequently than auditors who perceive low social presence when interacting with the client. Results also suggest that communication mediums thought to be low in social presence, such as email, may still result in feelings of high social presence, perhaps due to the level of use over time. Therefore, auditors should be careful

to remain unbiased by feelings of social presence when interacting with the client via any communication medium.

## CHAPTER 2

### THEORY AND HYPOTHESES DEVELOPMENT

#### **Prior Literature**

##### *Professional Skepticism*

Many models have been developed to explain the construct of professional skepticism (e.g., Shaub and Lawrence 1996; Nelson 2009; Hurtt et al. 2013; Glover and Prawitt 2014).<sup>4</sup> Auditing standards describe both judgment-oriented behaviors, such as a questioning mind (PCAOB 2016), and action-oriented behaviors, such as gathering additional evidence (PCAOB 2012).<sup>5</sup> Recent professional skepticism models incorporate the distinction between skeptical judgments and skeptical actions (Nelson 2009; Hurtt et al. 2013). When an event occurs that should increase professional skepticism, auditor skeptical judgment should increase. Once the skeptical judgment increases to a sufficient level, the increase in skeptical judgment should culminate in an observable skeptical action. The level at which skeptical judgment results in skeptical action can be thought of as a skeptical judgment threshold. With the exception of one working paper (Ortegren et al. 2016), prior research does not address the question of when an increase in skeptical

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<sup>4</sup> Prior research has also noted the difference in state and trait skepticism (c.f., Hurtt 2010). State professional skepticism fluctuates due to various situational factors while trait professional skepticism is expected to be a more stable individual characteristic. The present study focuses on state skepticism unless otherwise noted.

<sup>5</sup> Much of the existing accounting literature has utilized a presumptive doubt perspective of professional skepticism where at least some management dishonesty or bias is assumed until collected evidence indicates otherwise (Bell, Peecher, and Solomon 2005; Nelson 2009). However, the standard favors a more neutral view of professional skepticism where the auditor does not assume dishonesty nor “unquestioned honesty” (PCAOB 2016, Par. .09).

judgment does not lead to observable skeptical action. Ortegren et al. (2016) provides initial evidence to support that skeptical judgment does not always lead to skeptical action and suggests that auditors who suspect a misstatement do not always propose an adjustment.

#### *Communication Medium in Auditor-Client Interactions*

Bennett and Hatfield (2013) provide some evidence that auditor behavior differs depending on the communication medium used for the auditor-client interaction. However, Bennett and Hatfield's (2013) findings relate more to client factors, as the main research question is whether staff-level auditors avoid interactions with the client due to aspects of the client himself such as age, intimidating nature, etc. The present study is distinctly different from Bennett and Hatfield (2013) in three primary ways. First, Bennett and Hatfield (2013) do not isolate communication medium as a manipulation, as all participants interact with the client face-to-face at the beginning of the experiment and communication medium is not manipulated until the third interaction. Alternatively, the present study isolates social presence effects by manipulating communication medium between-subjects in a singular participant-client interaction. Second, participants in Bennett and Hatfield (2013) are given the choice whether to perform client inquiry while the present study requires client inquiry. Third, Bennett and Hatfield (2013) manipulate social aspects of the client, such as age and intimidation factors, which alters perceptions of social presence. Alternatively, the present study does not manipulate any factors related to the communicators themselves (i.e., the client or the auditor). Rather, the communication medium is cleanly manipulated between participants in order to isolate the effects of social presence via the communication medium alone.

## **Skeptical Judgment**

Client responses that are contrary to previously developed expectations likely trigger auditor state skepticism. The present study utilizes a specific setting where the client response is contrary to previously developed expectations. Therefore, skeptical judgment should increase based on the receipt of inconsistent evidence. While effects on skeptical judgment are not formally hypothesized, the presence of heightened skeptical judgment is tested.

## **Skeptical Action**

### *Client-Related Factors*

Several factors may inhibit auditors from acting on increases in skeptical judgment. Prior research on risk assessment notes that auditors do not always respond to changes in risk assessment. In fact, Wright and Bedard (2000) find that auditors react to risk factors, but do not respond to them with extended testing. Similar to prior research on auditor unresponsiveness to changes in risk (e.g., Wright and Bedard 2000), a change in skeptical judgment does not necessarily mean auditors will respond with skeptical action. Increasing skeptical judgment has no impact on the client personally; however, an increase in skeptical action (such as increasing the scope of testing) can affect the client directly. For example, auditors may not take skeptical action in order to satisfy client preferences to not be bothered.<sup>6</sup>

Other areas in both research and practice imply potential auditor bias toward the client (e.g., Rose 2007; PCAOB 2012). For example, auditors tend to bias judgments toward client preferred accounting treatments, such as when precedents are mixed

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<sup>6</sup> Bennett and Hatfield (2013) provide survey evidence that auditors likely experience interactions with clients that indicate the client does not want to be bothered by auditor inquiries and/or requests.

(Salterio and Koonce 1997) or when a client’s policy preference is known (Salterio 1996). Auditors may also be biased towards client preferences based on trust (e.g., Rose 2007; Hawkins and Owens 2016), especially given the length of auditor tenure (e.g., Carey and Simnett 2006). Additionally, maintaining independence throughout the audit is difficult (Richard 2006), and auditors may not appropriately respond to pressures inherent to the audit setting (e.g., profit pressure, Houston 1999). Regulators have expressed specific concern related to auditor overreliance on client-provided evidence (PCAOB 2012).

### *Social Presence*

Short et al. (1976) define social presence as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships” and emphasize that social presence is “a quality of the [communication] medium itself” (p. 65). Further, Short et al. (1976) describe social presence as a “perceptual or attitudinal dimension of the user, a ‘mental set’ towards the medium” (p. 65). Therefore, the construct of social presence is a factor of both the communication medium itself and the individuals involved in the interaction (Gunawardena 1995). Short et al. (1976) emphasize that social presence is the combination of many factors, including those related to the medium itself and the users involved.<sup>7</sup>

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<sup>7</sup> Research has developed multiple definitions, or concepts of social presence (e.g., Garrison, Anderson, and Archer 2000; Tu and McIsaac 2002). For example, Tu and McIsaac (2002) describe social presence as composed of three dimensions in an online educational setting: (1) social context, (2) online communication, and (3) interactivity. For purposes of the present study, the focus is on the original definition of social presence as described by Short et al. (1976) because it focuses on the pure psychological construct, rather than a specific setting (e.g., online learning). Further, other theories are closely related, such as construal theory. For example, construal theory includes a psychological distance element (Trope and Liberman 2010), and electronic propinquity theory includes feelings of “psychological nearness” (Walther and Bazarova 2008 p. 624). While other theories may include elements of social presence, social presence theory focuses only on factors related to the communication medium and factors related to the communicators.

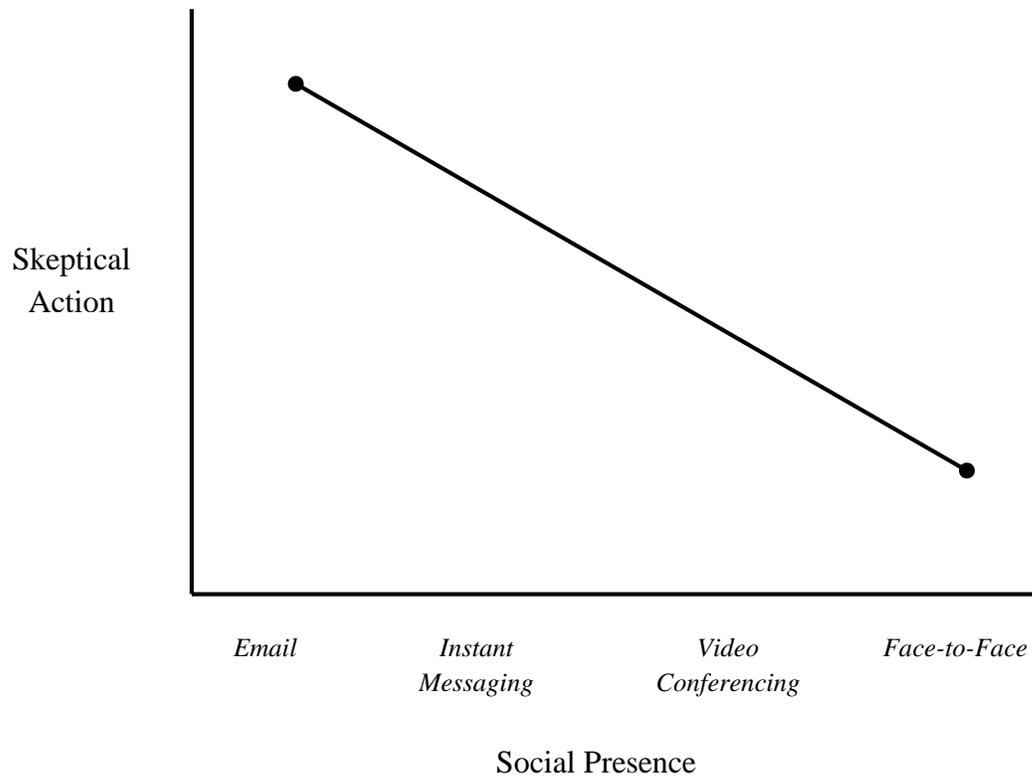
Kiesler, Siegel, and McGuire (1984) point out several specific social psychological aspects that are different between computer-mediated communication and other, more traditional, communication methods such as phone or face-to-face. Computer-mediated communication can differ based on timing, feedback, nonverbal social cues, and personalization (Kiesler et al. 1984). The concept of timing relates to the quickness of responses in a given interaction. For example, verbal communication such as face-to-face and video conferences (e.g., Skype) are instantaneous, or synchronous, because all communicators are interacting at the same time (Dennis, Fuller, and Valacich 2008). Text-based computer-mediated communications such as email are asynchronous because users do not (necessarily) communicate immediately. Users likely feel more distant from one another when feedback is not expected (such as when sending an email or leaving a voicemail) (Short et al. 1976; Tu 2000).

In sum, auditor-client interactions that elicit high perceptions of social presence are likely to alter auditor skeptical behavior. Due to the salience of the relationship with the client caused by perceived high social presence, auditors will be less likely to respond to increases in skeptical judgment with observable skeptical behavior that impacts the client. The first hypothesis predicts that a communication medium high in social presence, such as face-to-face, will affect the likelihood of auditors acting on increases in skeptical judgment compared to a communication medium low in social presence, such as email. Therefore, the second hypothesis predicts that the perceived social presence of the auditor-client interaction will affect the likelihood of auditors acting on increases in skeptical judgment. H1 essentially verifies that the manipulation of social presence via communication medium affects auditor skeptical action while H2 verifies that the

measure of perceived social presence affects auditor skeptical action. Stated formally and modeled in Figure 2.1:

**H1:** Auditors who interact with a client face-to-face are less likely to take skeptical action than auditors who interact with the client via email.

**H2:** Auditors who perceive high social presence when interacting with a client are less likely to take skeptical action than auditors who perceive low social presence.



**FIGURE 2.1 HYPOTHESES**

Figure 2.1 demonstrates the predicted relationship between social presence and likelihood of skeptical action. When social presence increases, auditors are less likely to take skeptical action.

## CHAPTER 3

### METHOD

#### **Participants**

The present study utilizes undergraduate auditing students and masters of accounting students as proxies for novice auditors. Students are appropriate proxies for novice auditors because they have the task-specific knowledge (i.e., basic understanding of financial comparisons when performing analytical procedures) to complete the experimental task (Hawkins et al. 2016). Additionally, students have been used in prior research to proxy for staff auditors in a client inquiry experimental task (Bennett and Hatfield 2013). Novice auditors in practice frequently interact both formally and informally with audit clients (Hawkins et al. 2016) and more frequently perform analytical procedures and client inquiry now than they were in the past (Trompeter and Wright 2010).<sup>8</sup> Therefore, novice auditors are an appropriate participant group to study the effects of auditor-client interactions on professional skepticism.

A total of 190 undergraduate auditing students and masters of accountancy students completed the experiment. Of these, two participants were removed due to completing the experiment without inquiry, one participant was removed due to only receiving part of the client's response, and three participants were removed from the video condition due to performing the inquiry audio-only (i.e., no video). The final

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<sup>8</sup> Practicing auditors note the difference in designing and performing analytical procedures in Trompeter and Wright (2010) such that seniors and managers generally design the procedures while staff and seniors generally perform the procedures (p. 687).

sample of 184 participants is composed of 145 students enrolled in a senior level auditing course and 39 masters of accountancy students. Participants had a combined average GPA of 3.46. Fifty-three percent of participants were male (47% female) and 40% indicated internship experience. Data was collected at two separate times, and there were no differences in responses based on date taken. Responses were also not different based on class standing, expected future role (e.g., external auditor), GPA, or gender. There was a difference in responses based on internship experience. Therefore, internship experience is included in all analyses as a covariate as discussed in the results section.

### **Design**

The experimental design is a 1 x 4 between-subjects design with communication medium manipulated at four levels. Social presence is operationalized by manipulating communication medium as face-to-face (highest social presence), video conferencing, instant messaging, or email (lowest social presence). For the email and instant messaging conditions, the entire experiment is completed in a behavioral lab via Qualtrics. For the video conferencing and face-to-face conditions, the majority of the experiment is completed in a behavioral lab via Qualtrics with the exception of the client inquiry. The client inquiry for the video conferencing (face-to-face) condition is completed in a separate conference room (office) in the same area as the behavioral lab. Details regarding the experimental task and the manipulation of communication medium are included in the following procedure section.

### **Procedure**

Participants first receive background information about a hypothetical manufacturing client and are informed they will be completing an analytical procedure

task and will be given the opportunity to inquire of the client, Amy Jones, regarding any unexpected fluctuations. Participants are given current year recorded inventory amounts for raw materials, work-in-process, and finished goods to compare with prior year audited amounts. Participants are given three pre-developed expectations for the inventory accounts: 1) industry demand is steady (no substantial increases or decreases), 2) no new, renewed, or lapsed contracts with suppliers during the year under audit, and 3) no substantial changes in suppliers or supplier pricing in the industry (see Appendix A). After reviewing the expectations and differences in recorded amounts, participants are asked to specifically select the expectations included in the workpaper. Participants then assess the likelihood of a material misstatement in the inventory account before moving on the client inquiry.

For the inquiry stage, participants are given an example client inquiry before performing the inquiry via one of the four communication medium conditions to which they are assigned (see independent variable section for more detail).<sup>9</sup> Participants in the email condition inquire of the client by creating an email to the client in a text box via Qualtrics. To resemble the client response time, participants wait thirty seconds after sending their email for the client to respond.<sup>10</sup> After thirty seconds, the client's email

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<sup>9</sup> Importantly, all conditions receive the same example inquiry for two reasons. First, participants will likely use the example word-for-word or will construct their own inquiry that is similar in nature to the example. Therefore, the same response can be used as the answer to every participant inquiry. Second, participants do not have to construct their own inquiry, which facilitates the use of students as proxies for novice auditors because the student participants do not need the task-specific experience of constructing their own client inquiry. With the exception of one participant in the email condition who did not make an inquiry, all participant inquiries were similar in nature and the scripted client response was appropriate.

<sup>10</sup> Thirty seconds is chosen as the time for participants to wait for an email response for two reasons. First, participants sitting in a lab with nothing else to do but wait for the email response will *feel* like enough time has passed for an actual email to be composed by the client and sent to the auditor. Second, a thirty second wait time is larger than the wait time for the instant messaging condition, but not too long for participants to remain idle and become agitated and/or lose attention. Participants know to wait for a response as they see “*Waiting for Response...*” on the screen.

response appears (see Appendix B). The email response is pre-generated within the Qualtrics experiment. Participants in the instant messaging condition inquire of the client via a chat system called Trillian. Within the Qualtrics experiment, the client inquiry screen asks each participant to minimize the browser to reveal the Trillian software. In order to initiate an instant message, participants double click on the “Amy Jones” contact. For the instant message condition, the response is delayed to give the impression of typing (see Appendix B). The instant message response is sent by the researcher while sitting in a separate location.

Participants in the video conferencing condition are directed to a room outside of the behavioral lab to conduct a video meeting with the client. Participants in the face-to-face condition are directed to a mock client’s office to perform their inquiry. The same individual assuming the role of the client is used in the face-to-face condition and in the video conferencing condition. Additionally, the client responds using a script based on the email and chat condition.<sup>11</sup> Participants in both the video conferencing and face-to-face conditions are given a legal pad to write any notes before or during the inquiry. Similar to participants in the email and instant message conditions, those in the video conferencing and face-to-face conditions also receive an example inquiry. When ready, the participants are directed to a conference room (video condition) or an office (face-to-face condition) on the same floor of the behavioral lab where they inquire of Amy Jones.

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<sup>11</sup> The script used by the client is the same as the email response included in Appendix B without the first phrase “in response to your inquiry.” Because data was collected at two different times, the individual playing the role of the client wore the same clothes and hairstyle both times. Further, the client’s office setup was kept the same for both data collections.

For all conditions, participants are advised the client is only available for a short amount of time and only questions related to the accounts indicated should be asked.<sup>12</sup>

After completing the client inquiry, participants assess the likelihood of material misstatement in the inventory account and complete measures designed to capture the likelihood of skeptical action (see dependent variables section for more detail). All participants complete the experiment after documenting their client inquiry and final conclusion as well as answering post-experimental questions, including demographics.

### **Independent Variable**

To examine the effects of varying levels of social presence on auditor skeptical action, the independent variable of communication medium is manipulated at four levels: face-to-face, video conferencing, instant messaging, and email. Within verbal communication mediums (i.e., video conferencing and face-to-face), there are specific aspects that differ in social presence. Video conferencing can illicit feelings of interacting with a “real” person (Homer, Plass and Blake 2008); however, this feeling is more salient in a face-to-face interaction. Additionally, nonverbal cues, such as smiling and eye contact, are likely to be much more salient in a face-to-face interaction compared to an interaction via video.

Within text-based communication mediums (i.e., instant messaging and email), there are also specific aspects that differ in social presence. For example, instant messaging allows for rapid responses and is considered synchronous while email is asynchronous (Loewenstein, Morris, Chakravarti, Thompson, and Kopelman 2005;

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<sup>12</sup> Some participants began the inquiry with small talk, such as introducing themselves or asking how Amy was doing. After the inquiry, most participants did not initiate follow up questions. However, when needed, Amy noted that someone had walked into her office (video condition) or that she must answer the phone (face-to-face condition) in order to end the inquiry.

Dennis et al. 2008). Additionally, communicators interacting via instant messaging are likely to feel pressure to produce quicker replies than those interacting via email (Loewenstein et al. 2005). The interactivity that is natural in face-to-face interactions can be produced in electronic communication mediums such as two-way instant messaging (Rafaeli 1988).

In addition to a manipulation of social presence, a measurement of social presence is collected. Due to the absence of a well-accepted scale to measure social presence across multiple communication medium conditions, prior scales were reviewed in order to develop a scale used to measure social presence in the present study. The original measurement of social presence discussed in Short et al. (1976) included seven-point bipolar scales using labels such as impersonal – personal, unsociable – sociable, etc. This original scale less one of the scale labels (sociable/unsociable) was used by Tang, Wang, and Norman (2013). Additional scales to measure social presence used in multiple studies include a scale based on television broadcasting/telepresence concepts (Kim and Biocca 1997), a scale based on computer-mediated online learning settings (Gunawardena and Zittle 1997), and a scale based on auditory-only communication (Lee and Nass 2005).

The final items used to measure social presence for the present study are presented in Appendix C. Measurement items used in prior scales that relate to the specific components of social presence, intimacy and immediacy, were selected for use in the present study. For example, several social presence factors used in Gunawardena (1995) were included in the scale due to their direct relation to immediacy (e.g., interactivity of the interaction). Others used in Gunawardena (1995) were included due to their direct relation to intimacy (e.g., unthreatening). Participants were asked “To what

extent do you agree with the following terms describing your interaction with the client” and indicated agreement using a 5-point Likert scale with endpoints of “Strongly Disagree” and “Strongly Agree.”

A factor analysis on the 17 items designed to measure social presence was performed. The analysis used an orthogonal rotation, and based on eigenvalues and a scree plot, the data indicated two factors. Items with low factor loadings ( $< 0.50$ ) were removed one at a time until the remaining measurement items adequately loaded on two separate factors. Factor 1 indicated positive social presence with measurement items such as stimulating and personal. Factor 2 indicated negative social presence with measurement items such as impersonal and cold. Therefore, a single social presence measure was constructed by computing an average of the positive social presence items and subtracting an average of the negative social presence items (refer to bold measurement items in Appendix C). The final social presence measure (*SP*) ranges from -4 to +4, with +4 representing the highest social presence and -4 representing the lowest social presence.

### **Dependent Variables**

The dependent variable to test H1 and H2 is a sum measure of skeptical action collected after the client inquiry and after documenting results (*PROFSKEP*). In order to capture a variety of actions differing in levels of skepticism, participants are given a list of possible additional procedures (see Table 3.1) and are asked to assess the likelihood of performing each procedure using an 11-point Likert scale where 0 = definitely does not need to be done and 10 = definitely needs to be done. The list of skeptical actions is based on guidance from the PCAOB (2012) on applying professional skepticism and

prior literature (e.g., Hurtt 2010, Kim and Trotman 2015). Additionally, participants assess the likelihood of performing no further procedures separately. Each of the “action” procedures differs in degree of skepticism (e.g., increasing the sample size is more skeptical than following up with an additional inquiry).<sup>13</sup>

The final dependent variables for skeptical action used in the analysis are (1) a sum measure of the 14 skeptical actions, (2) a measure of general professional skepticism, and (3) a measure of inventory-specific professional skepticism. To compute the second and third dependent variables, a factor analysis of the 14 skeptical actions is used. The factor analysis revealed two distinct factors, one representing general skepticism (e.g., make a note in the workpaper for possible fraud) and one representing specific skepticism related to the inventory account (e.g., send confirmations to verify supplier pricing). After removing procedures with low factor loadings (< 0.50), five actions are used for a general professional skepticism variable (*GENPS*), and six actions are used for a specific professional skepticism variable (*SPECPS*). Specifically, *GENPS* is the average of the five general skeptical actions and *SPECPS* is the average of the six specific skeptical actions (see Table 3.1).

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<sup>13</sup> To confirm varying degrees of skepticism, an expert panel of audit firm personnel consisting of two senior managers and two partners separately rated each procedure on skepticism using an 11 point Likert scale (0 = not skeptical, 10 = very skeptical). Average skepticism scores range from 3.5 to 9.3 for the 14 skeptical actions, supporting differences in skepticism across the 14 actions.

**TABLE 3.1: SKEPTICAL ACTIONS**

<b>Skeptical Action</b>	<b>General or Specific</b>
Speak with your supervisor as to next steps	General*
Follow up with the client immediately	General*
Wait until more testing is done before inquiring further of the client	General*
Scrutinize everything received from Amy going forward	General
Scrutinize everything received from anyone at the Company going forward	General
Email your supervisor about the results of the client inquiry being an indication of fraud	General
Make a note in the workpaper that the results of the client inquiry indicate possible fraud	General
Recommend an increase in testing for inventory accounts (e.g., increase sample size)	Specific
Recommend an increase in testing for accounts other than inventory (e.g., increase sample size)	General
Recommend to increase the number of supplier contracts to be tested	Specific
Recommend to increase the number of supplier invoices to be tested	Specific
Recommend to further investigate industry trends for supplier pricing	Specific
Recommend to increase the number of inventory observations throughout the year	Specific
Recommend to send confirmations to supplier to verify pricing	Specific

Table 3.1 presents the possible actions the auditor and/or audit team could take. Participants were asked to assess whether they would perform, or recommend performing, each action using an 11-point Likert scale (0 = Definitely does not need to be done, 10 = Definitely needs to be done).

\* Items were not included in the final general professional skepticism variable used in the analysis due to low factor loadings (< 0.50).

## CHAPTER 4

### RESULTS

#### **Internship Experience Covariate**

Internship experience is a significant demographic variable and is therefore included as a covariate in the analyses for H1 and H2. Of the 184 participants in the sample, 74 (40%) had internship experience. Those with internship experience were significantly less likely to take skeptical action compared to those without internship experience, indicating that there may be an experience-related factor that decreases auditor skepticism.<sup>14</sup> For the *PROFSKEP* dependent variable, those with internship experience indicated an average skeptical action of 87.35 while those without internship experience indicated an average of 92.13 (t-stat = -1.95, p-value = 0.052).<sup>15</sup> For the *GENPS* dependent variable, those with internship experience indicated an average skeptical action of 4.5 while those without internship experience indicated an average of 5.04 (t-stat = -1.84, p-value = 0.0680). These results suggest that novice auditors with experience are prone to client-related social factors, such as social presence.

#### **Skeptical Judgment**

After analyzing the workpaper, participants are asked to assess the likelihood of a misstatement in the inventory account (0 = low, 5 = moderate, 10 = high), which is used as an initial measure of skeptical judgment. Participants are again asked to assess the

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<sup>14</sup> Including an internship experience by communication medium interaction term in the model is not significant and does not qualitatively change the inferences of the other variables.

<sup>15</sup> All reported p-values are two-tailed unless otherwise noted.

likelihood of a misstatement in the inventory account after performing the client inquiry, which is used as a second measure of skeptical judgment. Table 4.1 presents the averages in total and for each condition of both the initial skeptical judgment and the second skeptical judgment. The average initial skeptical judgment for all participants is 5.93, and the means are not statistically different across conditions. After client inquiry, participants significantly decreased their skeptical judgment overall (average = 5.07,  $t$ -stat = 5.18,  $p$ -value < 0.001, two-tailed) as well as within each condition.<sup>16</sup> As discussed in the supplemental analysis, the decrease in skeptical judgment is likely due to the tendency to accept the client response as true (i.e., not maintaining a questioning mind or noting further corroborating evidence needed).

To confirm the link between skeptical judgment and skeptical action described in prior models of professional skepticism (e.g., Nelson 2009), an ANOVA was run to confirm that skeptical judgment is a significant predictor of skeptical action. For each dependent variable, the second skeptical judgment was significant in the model (analyses untabulated; all  $p$ -values < 0.05). In order to control for the effects of skeptical judgment on skeptical action and isolate the effect of social presence as predicted in H1 and H2, the second skeptical judgment is also included as a control variable in all data analyses unless otherwise noted.<sup>17</sup>

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<sup>16</sup> Within each condition, participants significantly decreased skeptical judgment (face-to-face, instant message, and email condition, all  $p$ -values < 0.05; video condition,  $p$ -value = 0.06). Similar to the initial skeptical judgments, no two conditions were significantly different from each other for the second skeptical judgment.

<sup>17</sup> Using the change variable (skeptical judgment 2 – skeptical judgment 1) produces qualitatively similar results to using skeptical judgment 2. Therefore, skeptical judgment 2 is used in the analyses.

## **Social Presence Manipulation (H1) and Measure (H2)**

In order to examine the effects of social presence on auditor skeptical action, both a manipulation (communication medium) and measurement (*SP*) of social presence are employed. H1 predicts the manipulation of social presence affects auditor skeptical action, such that auditors interacting with the client face-to-face are less likely to take skeptical action than auditors interacting with the client via email. Results for the manipulation of social presence (communication medium) are presented in Table 4.2. Panel A presents the average skeptical action for each communication medium. On average, participants in the video and instant messaging conditions indicated the lowest likelihood of skeptical action for the variable *PROFSKEP* (85.45 and 86.79, respectively). However, ANCOVA results for *PROFSKEP* presented in Panel B are not significant for the main independent variable of communication medium (p-value, one-tailed = 0.2090). Skeptical judgment is significant in the ANCOVA presented in Panel B (p-value, one-tailed < 0.0001) as expected given the relationship between skeptical judgment and action. As noted in Panel C of Table 4.2, there are no significant differences in *PROFSKEP* for any of the communication medium comparisons, including the comparison between face-to-face and email (p-value, one-tailed = 0.2366). Therefore, H1 is not supported.

While communication medium does not significantly impact auditor skeptical action as indicated in Panel B of Table 4.2, communication medium does significantly impact perceived social presence (p-value < 0.001, analyses untabulated), such that text-based communication mediums (email and instant messaging) generally elicit lower perceived social presence than audio-based communication mediums (video and face-to-

face).<sup>18</sup> H2 predicts the measure of social presence affects auditor skeptical action, such that auditors who perceive high social presence in an auditor-client interaction are less likely to take skeptical action than those who perceive low social presence. Using the variable *SP*, all participants were divided into three groups of high negative ( $SP < -1$ ), low ( $SP$  between  $-1$  and  $+1$ ), and high positive ( $SP > 1$ ) social presence.<sup>19</sup> Only eight participants fell into the high negative *SP* group, and these responses are not significantly different than the responses in the low *SP* group. Therefore, these two *SP* groups were collapsed. The final analysis using *SP* groups participants as low ( $SP \leq 1$ ) and high ( $SP > 1$ ). Table 4.3 presents the results utilizing the dichotomous *SP* measure (high or low).<sup>20</sup> Panel A displays the mean participant assessments of the three dependent variables of skeptical action. For *PROFSKEP*, participants who perceived high social presence were significantly less likely to take skeptical action than those who perceived low social presence (87.95 compared to 92.78, Panel B p-value, one-tailed = 0.0311).<sup>21</sup> For *GENPS*, participants who perceived high social presence were also significantly less likely to take skeptical action compared to those who perceived low social presence (4.46 compared to 5.25, Panel C p-value, one-tailed = 0.0033). Again, as expected, skeptical judgment is a significant control variable in the ANCOVA models in both Panel B and C (p-value, one-tailed < 0.0001). For the inventory-specific professional skepticism variable (*SPECPS*),

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<sup>18</sup> The average *SP* for email, instant messaging, video, and face-to-face are as follows: 0.75, 0.57, 1.85, and 1.50. *SP* for face-to-face is significantly higher than both the instant messaging (p-value < 0.001) and email (p-value < 0.001) conditions.

<sup>19</sup> The range of *SP* is  $-4$  to  $+4$ . Therefore the midpoint of 0 represents no social presence while the two extremes ( $-4$  and  $+4$ ) represent high negative or high positive social presence.

<sup>20</sup> Using the continuous measure of *SP* in an ANCOVA with internship experience produces similar results, such that *SP* is significant in the model at p-value < 0.05 for *PROFSKEP*, *GENPS*, and *SPECPS*.

<sup>21</sup> Panels B through D present the ANCOVA results using social presence as the independent variable, internship experience as the covariate, and *PROFSKEP* (Panel B), *GENPS* (Panel C), and *SPECPS* (Panel D) as the dependent variable.

social presence and internship experience did not significantly affect participant assessments (Panel D p-values, one-tailed  $> 0.05$ ). This result combined with the fairly high averages of *SPECPS* (7.93 for high social presence and 7.69 for low social presence on a 0 – 10 point scale) suggests that all participants recognized the inventory account as a suspicious area that needed further corroboration based on the client response. However, skeptical judgment is significant in this model. Due to the link between skeptical judgment and skeptical action, skeptical judgment should still significantly predict the skeptical action of participants, regardless of whether participants differ in their skepticism due to social presence. In sum, overall participant professional skepticism (*PROFSKEP*) and general professional skepticism (*GENPS*) are both significantly affected by social presence (p-values = 0.0311 and 0.0033, respectively), such that high social presence results in lower skeptical action. Therefore, H2 is supported. Figure 2 graphically displays the results from Table 4.3 Panel B.

## **Supplemental Analyses**

### *Skeptical Judgment*

Overall, results indicate that participants decreased skeptical judgment after client inquiry. This result is likely due to novice auditors accepting the client response at face value without corroboration.<sup>22</sup> An independent coder (PhD student) examined participant documentation of the client inquiry. Of the 184 responses, only two responses specifically mentioned the need to obtain corroborating evidence of the client's response. Further, only 29% of participants (n=54) increased their skeptical judgment after the

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<sup>22</sup> Participants could have either (1) ignored the previous information included on the workpaper that contradicts the client response or (2) valued the client-provided information more than the previous information on the workpaper.

client inquiry. However, for those participants who increased their skeptical judgment, the average *PROFSKEP* is 2.76 (indicating higher skepticism than the expert panel ratings) compared to an average of -7.01 (indicating lower skepticism than the expert panel ratings) for those participants who decreased their skeptical judgment (n=115).<sup>23</sup> Importantly, social presence did not significantly affect the second skeptical judgment (p-value = 0.3277).

### *Expert Panel*

A variable comparing participant likelihood of performing skeptical actions and the expert panel ratings of skepticism is computed by subtracting the participant response for each action from the corresponding average skepticism rated by the expert panel for each action. Subtracting the expert rating from the participant response produces positive values when the participant skepticism is higher than the expert panel skepticism for that specific action and negative values when the participant skepticism is lower than the expert panel. Each of these differences for the 14 skeptical actions are then summed, resulting in the participant's professional skeptical action score compared to the expert professional skepticism ratings. For example, if a participant indicates the likelihood of performing skeptical action 1 as 5.4, the expert panel rating for skeptical action 1, 3.5, is subtracted, resulting in a value of 1.9. Because 1.9 is positive, this indicates the participant's professional skepticism is higher compared to the expert panel because he is more likely to perform the skeptical action. After computing the difference for each of the 14 procedures, a positive (negative) value indicates the participant skepticism is higher (lower) than the expert panel ratings and represents a higher (lower) likelihood of

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<sup>23</sup> Of the 184 participants, 115 decreased skeptical judgment, 15 did not change, and 54 increased skeptical judgment.

skeptical action. The untabulated results for this variable are qualitatively similar to the main results, such that H1 is not supported and H2 is supported at  $p\text{-value} < 0.05$ .

### *Other Measures*

Participants assessed characteristics of the client, including credibility, reliability, competence, and trustworthiness. Participants also indicated their agreement with several statements related to the client, such as “I like the client,” “I did not want to irritate the client,” etc. on a 5 point Likert scale with endpoints Strongly Disagree and Strongly Agree. Participants in the video conferencing condition compared to the email condition rated the client higher in competence and trust ( $p\text{-values} < 0.05$ ).<sup>24</sup> All other comparisons between conditions for credibility, reliability, competence, and trust were not significant. All participants found the client to not be intimidating, and face-to-face and video participants found the client to be significantly more approachable than the email condition ( $p\text{-values} < 0.05$ ). However, face-to-face and video participants did indicate higher anxiety when interacting with the client compared to the email condition ( $p\text{-values} < 0.05$ ). Participants in the video conditions rated the client as the most likable, followed by participants in the face-to-face, instant messaging, and email conditions.

Using the high and low social presence groupings, participants who perceived high social presence rated the client as significantly more credible, reliable, competent, and trustworthy (all  $p\text{-values} < 0.001$ ). Those who perceived high social presence also rated the client as more approachable and likable ( $p\text{-values} < 0.001$ ). Further, those who perceived high social presence were more concerned with making the client happy than those who perceived low social presence ( $p\text{-value} < 0.01$ ). These results further support

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<sup>24</sup> All supplemental analyses presented in the “Other Measures” section utilize the Tukey test to adjust for multiple pairwise comparisons.

that social presence leads auditors to engage in less skeptical behaviors that might influence the client negatively.

**TABLE 4.1: MEANS (STANDARD DEVIATIONS) FOR SKEPTICAL JUDGMENT**

<u>Communication Medium</u>	<u>Skeptical Judgment 1</u>	<u>Skeptical Judgment 2</u>
Email <sup>a</sup>	6.13 (1.71)	5.41 (1.97)
Instant Messaging (IM) <sup>a</sup>	5.72 (1.93)	4.48 (2.04)
Video <sup>b</sup>	5.65 (1.76)	4.81 (1.92)
Face-To-Face (FTF) <sup>a</sup>	5.87 (1.73)	5.01 (2.51)
Overall <sup>a</sup>	5.93 (1.75)	5.07 (2.17)

<sup>a</sup>The difference between Skeptical Judgment 1 and Skeptical Judgment 2 is significant at p-value < 0.05.

<sup>b</sup>The difference between Skeptical Judgment 1 and Skeptical Judgment 2 is significant at p-value < 0.10.

Table 4.1 reports the means and standard deviations of the initial skeptical judgment (“Skeptical Judgment 1”) and the skeptical judgment after client inquiry (“Skeptical Judgment 2”). Within Skeptical Judgment 1, values are not different by condition (all p-values > 0.05). Similarly, within Skeptical Judgment 2, values are not different by condition (all p-values > 0.05).

**TABLE 4.2: ANCOVA RESULTS FOR MANIPULATION OF SOCIAL PRESENCE**

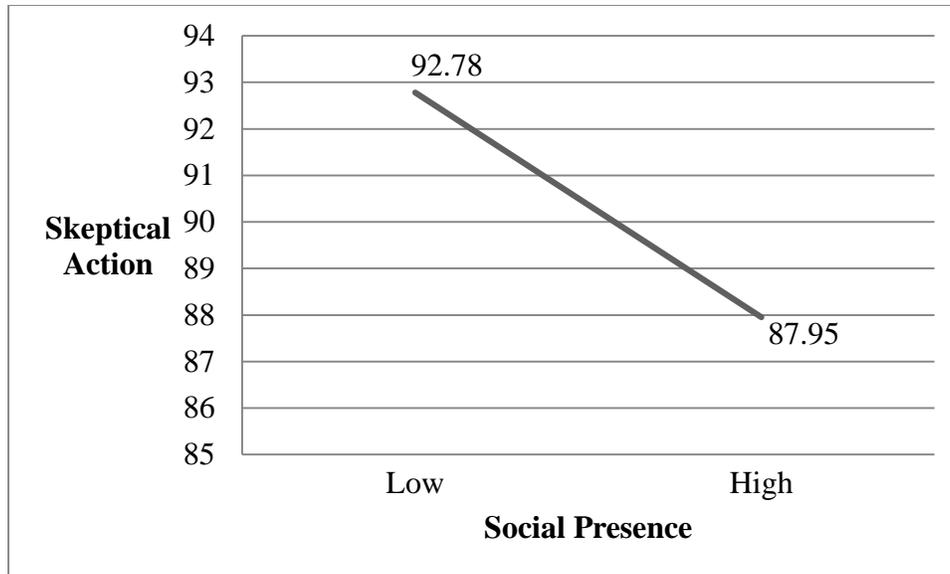
<b>Panel A: Mean (Standard Deviation) of Skeptical Action Variables</b>			
<u>Communication Medium</u>	<u>PROFSKEP</u>	<u>GENPS</u>	<u>SPECPS</u>
Email	92.72 (15.06)	5.00 (1.85)	7.91 (1.24)
Instant Messaging (IM)	86.79 (18.64)	4.41 (2.14)	7.74 (1.30)
Video	85.45 (17.45)	4.75 (1.78)	7.28 (1.54)
Face-To-Face (FTF)	90.35 (16.34)	4.84 (2.08)	7.89 (1.23)
<b>Panel B: ANCOVA Results (Using <i>PROFSKEP</i> as dependent variable)</b>			
<u>Source</u>	<u>df</u>	<u>F</u>	<u>p-value (one-tailed)</u>
Communication Medium	3	0.95	0.2090
Internship Experience	1	5.86	0.0083
Skeptical Judgment 2	1	52.31	< 0.0001
<b>Panel C: Planned Contrasts (Using <i>PROFSKEP</i> as dependent variable)</b>			
<u>Comparison</u>	<u>t</u>	<u>p-value (one-tailed)</u>	
FTF < Video	1.05	0.1470	
FTF < IM	0.35	0.3648	
FTF < Email	-0.72	0.2366	
Video < IM	-0.66	0.2551	
Video < Email	-1.60	0.0562	
IM < Email	-0.93	0.1759	

Table 4.2 reports the results of the manipulation of social presence via communication medium. Communication is manipulated at four levels: face-to-face (FTF), video, instant messaging (IM), and email. ANCOVA results and planned contrast for *GENPS* and *SPECPS* dependent variables are not significant and are therefore not presented. Including an internship experience by communication medium interaction term in the model is not significant and does not qualitatively change the inferences of the other variables.

**TABLE 4.3: ANCOVA RESULTS FOR MEASURE OF SOCIAL PRESENCE**

<b>Panel A: Mean (Standard Deviation) of Skeptical Action Variables</b>			
<u>Social Presence</u>	<u>PROFSKEP</u>	<u>GENPS</u>	<u>SPECPS</u>
Low	92.78 (16.49)	5.25 (1.89)	7.93 (1.24)
High	87.95 (16.11)	4.46 (1.96)	7.69 (1.32)
<b>Panel B: ANCOVA Results (Using <i>PROFSKEP</i> as dependent variable)</b>			
<u>Source</u>	<u>df</u>	<u>F</u>	<u>p-value (one-tailed)</u>
Social Presence	1	3.52	0.0311
Internship Experience	1	5.78	0.0086
Skeptical Judgment 2	1	55.30	< 0.0001
<b>Panel C: ANCOVA Results (Using <i>GENPS</i> as dependent variable)</b>			
<u>Source</u>	<u>df</u>	<u>F</u>	<u>p-value (one-tailed)</u>
Social Presence	1	7.55	0.0033
Internship Experience	1	5.44	0.0104
Skeptical Judgment 2	1	58.02	< 0.0001
<b>Panel D: ANCOVA Results (Using <i>SPECPS</i> as dependent variable)</b>			
<u>Source</u>	<u>df</u>	<u>F</u>	<u>p-value (one-tailed)</u>
Social Presence	1	1.06	0.1527
Internship Experience	1	1.33	0.1256
Skeptical Judgment 2	1	18.63	< 0.0001

Table 4.3 reports the results of the measure of social presence. The low social presence group includes participants with values of *SP* less than or equal to 1, and the high social presence group includes participants with values of *SP* greater than 1 (values of *SP* range from -4 to +4). Including an internship experience by social presence (both dichotomous and continuous) interaction term in the model is not significant and does not qualitatively change the inferences of the other variables.



**FIGURE 4.1 AVERAGE SKEPTICAL ACTION BY SOCIAL PRESENCE**

The low social presence group includes participants with values of *SP* less than or equal to 1, and the high social presence group includes participants with values of *SP* greater than 1 (values of *SP* range from -4 to +4). Skeptical action values (*PROFSKEP*) can range from 0 to 140. Comparing the two averages, the high social presence group (*PROFSKEP* = 87.95) is significantly less likely to take skeptical action than the low social presence group (*PROFSKEP* = 92.78, p-value < 0.05).

## CHAPTER 5

### CONCLUSION

A skeptical judgment must be present for a skeptical action to occur; however, an increase in skeptical judgment does not always produce a skeptical action (Shaub and Lawrence 1999; Nelson 2009; Hurtt et al. 2013). In order for auditors to apply the standard of due professional care, instances where increased professional skepticism is required (i.e., more persuasive evidence is needed) must not only increase an auditor's skeptical judgment (e.g., doubting information provided by a client), but must also result in a skeptical action (e.g., gathering additional evidence). The present study examines the link between skeptical judgment and skeptical action by testing whether the perceived social presence of the auditor-client interaction affects the likelihood that auditors act on increases in skeptical judgment.

As predicted, the present study finds that participants who perceive high social presence in an auditor-client interaction are less likely to take skeptical action in a situation where skepticism should increase. Overall, the supplemental analysis supports regulator concern that auditors may place too much reliance on management representations, as only 29% of participants increased their skeptical judgment after client inquiry. Further research is needed to determine how auditors react to management representations, particularly concerning whether auditors maintain skepticism in light of reasonable client explanations (Hurtt et al. 2013).

Results of this study speak to both literature and practice. First, the effect of communication medium on auditor judgment and decision making is a ripe area for research. Existing studies have examined settings related to this area, such as how auditors respond to reviews depending on communication medium (Brazel et al. 2004; Payne et al. 2010) and how clients respond to auditor communication mode and tone (Saiewitz and Kida 2016). However, existing research has not examined communication medium in a professional skepticism setting, particularly regarding the likelihood of auditor skeptical action. Of particular importance is that the results of the present study suggest that the communication medium may not affect the likelihood of auditor skeptical action; however, the perceived social presence in the auditor-client interaction certainly does. Second, results of the present study speak to regulator concern regarding the lack of auditor professional skepticism (PCAOB 2012). Further, results of the present study suggest that experience may exacerbate the lack of auditor skeptical action due to perceived social presence. However, the supplemental analysis on those who increased versus decreased skeptical judgment after client inquiry suggest that public accounting firms and regulators should focus on ensuring auditors make appropriately skeptical judgments in response to client inquiries in order to increase the likelihood of a corresponding skeptical action.

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## APPENDIX A

### Analytical Procedure Provided to Participants

#### **WP 4015 Procedures on Inventory Accounts**

**Purpose:** To perform analytical procedures on inventory accounts by comparing raw materials, work-in-process, and finished goods balances to previous years.

**Expectations:** Based on current understanding of the client and industry changes, the inventory account balance is likely to be similar to prior year.

- Industry demand is steady (no substantial increases or decreases)
- No new, renewed, or lapsed contracts with suppliers during the year under audit
- No substantial changes in suppliers or supplier pricing in the industry

#### ***Procedure yet to be completed:***

You observed a significant increase in raw materials and, correspondingly, total inventory (see balances below). Inquire of the client regarding the increase in raw materials and total inventory.

	<b><u>2014</u></b>	<b><u>2015 (unaudited)</u></b>	<b><u>\$ Change</u></b>
Raw Materials	\$ 35,569,578	\$ 46,348,987 <b>TB</b>	\$ 10,779,409
Work-in-Process	6,218,694	6,465,348 <b>TB</b>	246,654
Finished Goods	<u>29,351,338</u>	<u>31,694,697</u> <b>TB</b>	<u>2,343,359</u>
Total Inventory	\$ <b><u>71,139,610</u></b> <b>PY</b>	\$ <b><u>84,509,032</u></b> <b>TB</b>	13,369,422

<b>Tickmark Legend</b> <b>PY = Prior year</b> <b>TB = Trial balance</b>
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## APPENDIX B

### Client Response

#### Email Condition

**Inventory**  
[amy.jones@abc.com](mailto:amy.jones@abc.com)

To: Auditor, Staff

In response to your inquiry, we had several changes in inventory during the fourth quarter of 2015 that caused a substantial increase overall from prior year in the inventory accounts. For example, our main supplier increased prices when we renewed our contract in November. Also, many of our suppliers that we do not have contracts with increased prices. Additionally, we expect sales to increase in 2016 based on the demand in the fourth quarter of 2015.

Thanks,

Amy Jones  
Accounting Supervisor  
Inventory Department  
(789) 456-1234

#### Chat Condition (Example from participant)

**staffaccountant11** Based on my review of the 2015 inventory account balances compared to the prior year, the raw materials and total inventory balances are larger than expected. Are there any factors you are aware of that would cause this?

**amy\_jones** We had several changes in inventory during the fourth quarter of 2015 that caused a substantial increase overall from prior year in the inventory accounts. For example, our main supplier increased prices when we renewed our contract in November. Also, many of our suppliers that we do not have contracts with increased prices. Additionally, we expect sales to increase in 2016 based on the demand in the fourth quarter of 2015.

Here is your passcode: 95489

**staffaccountant11** Thanks Amy!

**amy\_jones** You're welcome

## APPENDIX C

### Social Presence Measurement Items and Sources

Social Presence Factor	Source	Used in Other Scales
<b>Impersonal</b>	Short et al. (1976)	Gunawardena (1995); Gefen and Straub (1997, 2004); Gunawardena and Zittle (1997)
<b>Cold</b>	Short et al. (1976)	
<b>Sociable</b>	Short et al. (1976)	Gunawardena (1995); Gefen and Straub (1997, 2004)
<b>Personal</b>	Short et al. (1976)	Gunawardena (1995); Gefen and Straub (1997, 2004); Gunawardena and Zittle (1997)
Passive	Short et al. (1976)	Gunawardena (1995)
<b>Unsociable</b>	Short et al. (1976)	Gefen and Straub (1997, 2004)
<b>Insensitive</b>	Short et al. (1976)	Gunawardena (1995); Gefen and Straub (1997, 2004)
<b>Involving</b>	Lee and Nass (2005)	Lee and Jang (2013)
<b>Engaging</b>	Lee and Nass (2005)	Lee and Shin (2012)
<b>Vivid</b>	Lee and Nass (2005)	Lee and Jang (2013)
Appropriateness of Medium	Gunawardena and Zittle (1997)	
Comfortable	Gunawardena and Zittle (1997)	
<b>“Real-time” feel</b>	Kim and Biocca (1997)	Kreijns, Kirschner, Jochems and van Buuren (2011)
<b>Stimulating</b>	Gunawardena (1995)	
<b>Interactive</b>	Gunawardena (1995)	
Immediate	Gunawardena (1995)	
<b>Unthreatening</b>	Gunawardena (1995)	

**Note:** Items in bold are included in the final social presence measure used in the analyses.