Staff Auditors' Proclivity for Computer Mediated Communication with Clients and its Effect on Skeptical Behavior

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Abstract

This study considers whether computer-mediated communication (CMC) impacts auditors' interactions with the client, compared to face-to-face (FTF) communication. We also examine how nonverbal cues commonly associated with deception may affect auditors' skeptical behavior. We first conduct a brief survey with audit professionals (staff, managers, and partners) finding generational differences between the perceptions of the staff relative to those of managers and partners regarding when CMC is appropriate. Experimental results, based on Social Presence Theory (SPT) demonstrate that FTF interactions include more content and follow-up questions (a key aspect of skepticism) than CMC. Additionally, auditors engage in less relationship-building statements when communicating electronically. Also consistent with SPT, auditors communicating electronically request more documentation, though they ask fewer questions in general. Finally, using a measure of auditor skepticism, we find that auditors communicating FTF were more skeptical if the controller displayed nonverbal cues indicative of deception as well as more skeptical than auditors communicating electronically. Our findings suggest that communication mediums with reduced channels (e.g., no audio or visual channels), such as CMC, are less appropriate for complex and unique problem solving tasks. When paired with the concern that younger staff auditors are more likely to engage in CMC, skeptical behavior could be stunted in the modern audit environment.

I. Introduction

In this study we examine how computer-mediated communication (CMC) changes the content of auditor-client interactions relative to face-to-face (FTF) communication. Further, we consider how common nonverbal cues related with deception may influence auditors' skeptical behavior. Like most business professionals, auditors are increasingly (and significantly) relying on CMC with clients and within the audit team (e.g., Baltes et al. 2002; Teeter et al. 2010; Brazel et al 2004). Comfort with, and use of, CMC is greater for younger generations (Lipnack and Stamps 2000; Bergiel et al. 2008), likely resulting in an increased tendency for audit staff to use CMC and to deem it appropriate in more situations than are audit partners. Semi-structured interviews with audit partners across multiple firms indicate a unanimous concern regarding the extent to which staff-level auditors are personally interacting with clients. These partners express concern that younger staff are not developing important client relationships and that they are not learning how to "read" the client. While the use of CMC can create efficiency advantages (Baltes et al. 2002) and break down certain interpersonal barriers (Bennett and Hatfield 2013), interviewed partners believe that FTF interaction is imperative to good auditor-client relationships. Further, they suggest that good client relationships not only improve client service, but also the staff's ability to obtain information and audit evidence. This study examines how the mechanism of CMC versus FTF communication creates different expectations of information transfer and how the loss of receiving nonverbal cues (when using CMC) can negatively impact auditors' skeptical behavior.

Social Presence Theory (SPT) was developed to consider how reduced channels of communication involved in telecommunication (i.e., no visual channel) alter interactions (Short et al. 1976). Social Presence is simply defined as the awareness of those with whom one is communicating. The existence of a visual channel (e.g., talking face-to-face) increases social

presence by allowing for visual cues (e.g., facial expressions, body language, and talking distance) that can alter the meaning of the audio channel alone, often in unconscious ways (Short et al. 1976). For example, visual cues improve the synchronicity of interaction, indicating an understanding (or lack of understanding), as well as signals regarding whose turn it is to talk in the conversation. Audio channels also enhance social presence, even when visual channels are not present (e.g., a telephone conversation). Audio channels provide elements that increase meaning and understanding between parties, such as tone of voice, pauses, and speed. While face-to-face communication (with visual and audio channels relaying the message) is considered to have high social presence, communication methods that have neither visual nor audio elements (e.g., text-only communications, such as e-mail) have the least social presence (Christie 1974).

Ultimately, SPT suggests that task performance improves as features of the task better fit the communication mode. For example, complex problems or problems that involve negotiation or conflict are better suited for an environment with greater social presence such as FTF communication. However, when the task requires relaying specific information or when the questions to be asked are known, SPT suggests that less social presence (e.g., CMC) is a better fit for the task (Short et al. 1976; Daft and Lengel 1986; Noteberg et al. 2003). Recent communication research has also demonstrated that CMC is best used for simple information seeking (e.g., Heller 2010). Alternatively, FTF communication allows for rapid responses, generating more interaction, and the discovery of new questions to be asked (Short et al. 1976; Wilson and Williams 1975). In an audit context, typical audit tasks include passive information requests and interactive problem solving, as well as combinations of both. The use of CMC is more conducive to information/documentation requests (e.g., asking client for invoices, journal entries, or client contracts), but CMC can potentially impede the number of questions auditors

ask directly of the client. Asking follow-up questions is a fundamental skeptical behavior (e.g., AICPA 2013).

A key benefit to greater social presence is the ability to observe and hear cues that are absent with CMC (Heller 2010). FTF communication allows for the transference of moods, experiential knowledge, and nonverbal cues not afforded by CMC (Heller 2010). Such nonverbal cues can also betray deception on the part of the information source (Frank 1988; Valley et al. 1998). Communication methods such as e-mail are less synchronous, allowing parties more time to phrase responses in such a way as to avoid further scrutiny (Brazel et al. 2004) and/or limit the information provided. Several meta-analyses indicate that cues such as speech disturbance ("uh" or pauses), a higher-pitched tone of voice when making a statement, and decreased eye contact are indicative of deception (e.g., DePaulo 1992; Ekman 1989; Zuckerman and Driver 1985). Observance of such cues may consciously, or unconsciously, cause auditors to be more skeptical and thus ask more questions of the client.

Results from a brief survey conducted with staff auditors, managers, and partners indicate that there are generational differences regarding perceptions of when it is appropriate to use CMC. While staff and partners agree on the appropriateness of CMC for tasks such as requesting a list of journal entries or the minutes of a Board meeting (i.e., document requests), they disagree regarding tasks such as asking questions about a perpetrated fraud, investigating fluctuations, or communicating a proposed adjustment to the client. In these latter tasks, staff auditors are more likely to believe that CMC is appropriate. While these generational differences were expected (Bergiel et al. 2008), they indicate that staff auditors are likely interacting with the client via CMC more often than the managers and partners are comfortable.

To investigate the effects of CMC relative to FTF communication on auditor-client interactions and skeptical behavior, we conduct an experiment with three conditions: e-mail

communication, FTF communication (no nonverbal cues), and FTF communication with nonverbal cues[1]. In the experiment, auditors are given an audit task to complete: follow-up on three accounts receivable confirmations returned to the audit team with exceptions noted by the audit client's customers. In order to resolve differences, staff auditors interact with the controller of a fictitious client (experimental confederate). We find that, when communicating electronically, auditors ask fewer follow-up questions of the controller, have shorter overall interactions, and engage in less "give and take" in the conversation. Further, auditors engage in less relationship building statements when communicating electronically. It is interesting to note that, consistent with SPT, auditors communicating electronically request more documentation though they ask fewer questions in general. However, these general measures were not statistically significant between the two FTF conditions.

Of the three confirmations, one was designed to be a more complicated issue (i.e., potential inventory valuation issue). This issue provided a richer context for the participants to question and ask for information, and, by design, is the issue where the controller first exhibits nonverbal cues to participants in that condition. Using transcribed discussions between participants and the controller, independent coders rate how skeptical the auditors were in their questioning of the controller and the information being provided regarding this issue. In general, the auditors communicating FTF were considered more skeptical than auditors communicating electronically. Further, when receiving non-verbal cues, auditors were more skeptical than the other FTF condition (when nonverbal cues were not present) and the electronic condition. This indicates that auditors behave more skeptically when they are able to view such cues that suggest deception could be occurring, relative to when these channels of communication are removed.

[1] While all face-to-face communications involve non-verbal cues/signals, in the study we manipulate and differentiate between the controller (confederate) deliberately inserting certain non-verbal cues, related to deception, into interaction with participants (referred to as the "FTF communication with nonverbal cues" condition).

The theoretical discussion and findings of this study are important to the practice of auditing as well as to accounting research. A central theme of this study is that communication mediums, such as CMC, with reduced channels (e.g., audio and visual) are less appropriate for complex and unique problem solving tasks. When paired with the concern that younger staff auditors are more likely to engage in CMC, skeptical behavior could be stunted in the modern audit environment. However, auditors do benefit by using CMC for certain audit tasks. The key is to appropriately match task with communication medium (Short et al. 1976; Daft and Lengel 1986). Given that partners and audit staff disagree on the appropriate medium at times and that difficult social situations increase the use of CMC, firms may want to explicitly consider these decisions.

In light of our findings, it is also important to understand that increased FTF interactions in such settings improve one's ability to identify future deception (Vrij and Semin 1996). Further, meeting FTF results in less deception, simply because people find it harder to deceive in-person (Valley et al 1998; Lee and Welker 2007). Firms may also consider prior research that suggest that, even when CMC is the most appropriate communication medium, prior in-person discussions and interactions improve subsequent CMC and make it more effective for a broader range of tasks (Powell et al. 2004; Lin et al 2008). Accounting research needs to further consider the choice of communication mode combined with its effects. For example, Bennett and Hatfield (2013) show that, in a complex task where FTF is most beneficial, audit staff may choose CMC when the situation is socially difficult in an effort to avoid FTF interactions.

The remainder of the paper includes a discussion of the generational differences regarding the use of CMC in Section II; hypotheses development in Section III; the experimental

design in Section IV. Section V presents the results while Section VI discusses our findings and implications for accounting research.

II. Comfort with the use of CMC: Staff versus Partners

Computer mediated communication has numerous advantages. For example, CMC allows information to be relayed between parties asynchronously, avoiding the need for people to be in the same place at the same time and reducing scheduling conflicts and travel costs (Heller 2010). In an audit setting, staff-level auditors consider their use of e-mails to client management as less intrusive to client management (Bennett and Hatfield 2013). Further, CMC creates an "Equalization Phenomenon," which reduces status differences during communication that can prevent high-status communicators from dominating discussions (Dubrovsky et al. 1991).[2] Issues of age, race, gender and even physical handicaps can be reduced with CMC (Nowak 2003; Bergiel et al. 2008). Finally, CMC allows access to centralized experts (Rosen et al. 2007), such as national office experts that large audit firms employ.

Younger business professionals are more comfortable with CMC than older professionals (Bergiel et al. 2008). Beyond the normative considerations for use of CMC, it is important to consider the extent to which younger auditors and older partners may disagree on the appropriate use of CMC. Semi-structured interviews with six partners across multiple auditing firms provide insight into the perceptions of audit practitioners regarding the use of CMC. All partners shared the concern that younger staff are not personally communicating adequately with their clients.[3] Two reasons are most often cited for this concern. First, it is important to build personal relationships with the client. Such a relationship is important for

[2] For example, research has found that women are more comfortable engaging in CMC than men (Nowak 2003).

[3] A common example, stated in slightly different ways, involves an audit partner working at the audit client for the day and noting that the younger staff never left the audit room. At the end of the day, when the partner asked they staff why they had not met with the client at all that day, the audit staff responded that they had been interacting with the client throughout the day, via e-mail and electronic messaging.

client service, as well as improving the ability of the auditor to obtain necessary evidence. Second, auditors need to be able to "read" the client and that nonverbal cues are an important aspect of evaluating client responses. Partners believe that there are many skills related to dealing with different client situations that have to be learned over time and through multiple interactions. To expand on these partner interviews, we conduct a short survey to examine this potential difference of perceptions.

Fifty-four staff auditors and 39 managers and partners were given a short survey. Staff-level audit professionals had, on average, 1.95 years of audit experience, while the manager/partner level professionals had 11.01 years of experience. Staff were approximately 24.80 years old with 54 percent female; managers and partners (combined) averaged 34.54 years old and were 38.50 percent female. Interestingly, these groups did not differ with regard to the amount of interaction with their own friends and family using electronic methods nor with the appropriateness of using CMC in non-audit situations (e.g., offering condolences to a friend). And while the extent of FTF client communication was similar, audit staff used e-mail more to communicate with the client (whereas partners opted for greater use of telecommunication). Audit staff were marginally more likely to believe that they can determine moods electronically ($t = 1.41$; one-tailed p-value = 0.08) or if someone is trying to hide something ($t = 1.56$; one-tailed p-value = 0.06; Table 1, Panel A).

[Table 1]

We asked survey participants about different audit situations in which they could communicate with the client via e-mail or FTF interaction. Our expectations, based on the communication literature, are that younger audit staff will be more likely to prefer e-mail interactions than managers and partners (Lipnack and Stamps 2000; Bergiel et al. 2008). Participants responded on an eleven-point Likert-type scale where 1 represents "definitely meet

in person" and 11 represents "definitely e-mail request." Audit staff and partners had similar beliefs that CMC was appropriate for situations requiring the conveyance of documentation, such as a listing of journal entries (7.24 vs 7.77 respectively; one-tailed p-value = 0.18) or a request for minutes of a board meeting (8.96 vs 8.87 respectively; one tailed p-value = 0.43) (See Table 1, Panel B). These results indicate that both staff-level and manager/partner-level audit professionals agree that it is appropriate to use a communication method with less social presence when requesting documentation from the client.

However, on more complicated issues that may require further discussion and explanation, staff and partner responses were generally different (See Table 1, Panel B). For example, checking with the accounts payable clerk for differences in the accounts payable process (6.19 vs 5.00; one-tailed p-value = 0.03). Similarly, when asking the client how a receivable balance was calculated, in order to determine the cause of a fluctuation, staff auditors were marginally more likely to use CMC (4.28) relative to partners/managers (3.26; one-tailed p-value = 0.03). Similar results are found for proposing an adjustment (2.76 vs 1.76; one-tailed p-value < 0.01) and for questions regarding employee fraud (1.96 vs 1.44; one-tailed p-value < 0.01). While two other situations were not significantly different, the pattern of responses is consistent. Overall, these findings suggest that staff auditors are more comfortable using CMC in a broader range of client interactions than are partners in our sample.

Prior research has generally suggested that audit managers and partners believe FTF communication to be superior (e.g., Agoglia et al. 2010). Further, Bennett and Hatfield (2013) find that audit staff may use electronic communication to avoid difficult interactions with certain client managers. That is, there are other, social psychological reasons that staff may choose to interact electronically, beyond the specific task at hand (e.g., status/power differences). Given concerns of partners in our semi-structured interviews and our survey findings that suggest that

staff are using CMC more than partners would prefer, we next consider the extent to which use of CMC may be negatively influencing the audit process.

III. Hypotheses Development

Professional Skepticism is an attitude that includes "critical assessment of audit evidence" (AICPA 2010, paragraph 7; PCAOB 2010b), that includes a disposition of inquiry. Inquiry involves seeking information from knowledgeable persons and should include consideration of client reactions and asking follow-up questions (AICPA 2013). Lee and Welker (2007) suggest that extensive questioning creates an environment that induces a skeptical mindset in auditors. Standards specifically discuss the importance of follow-up questions as a way to discover issues, for example circumvention of controls or indicators of fraud (PCAOB 2010a) and as a premise to modify audit procedures or perform additional procedures (PCAOB 2010b; AICPA 2013). Chen et al. (2012) find that an audit environment including such questioning can deter earnings management. Given the importance of inquiry, and particularly follow up questions, we consider how the medium of communication lends itself to this aspect of auditing.

Electronic vs. Face-to-Face Communication: Social Presence Theory

In most industries electronic communication is growing at a rapid rate (Heller 2010). In auditing, electronic communication has become routine among audit team members (e.g., Brazel et al. 2004) and has increased even more since the development of electronic workpapers (e.g., Agoglia et al. 2009). Further, the rise of "remote audits" has resulted in increased use of technology to communicate among team members (Teeter et al. 2014), leading to saving labor costs through off-shoring as well as audit efficiencies. A key advantage to electronic communications among audit team members is that it allows managers and partners to review multiple jobs from a single location and reduces the time and cost of travel, improving audit

efficiency (Agoglia et al. 2010). Interestingly, interviewed partners indicate another key benefit to CMC, an audit trail of communication. Beyond the review process, electronic communication between auditors and their clients is increasing as well (Noteberg et al. 2003). While research (Agoglia et al. 2010) and anecdotal information suggest that audit firms perceive FTF communication to be superior, our survey evidence suggests that the extent of CMC deemed appropriate in a typical audit may be perceived differently by younger and older members of the audit team.

Social Presence Theory (SPT) was originally developed by Short et al. (1976) to consider the effectiveness of communicating via telephone (lacking visual cues) relative to FTF. This theory continues to be expanded and is quite relevant to modern electronic communication methods. Areas as diverse as conflict resolution (Larson 2003), business communications (Sethi and Adhikari 2010), and on-line education (Wei et al. 2012) consider the extent to which social presences influences the effectiveness and acceptance of CMC. Social presence is the level of awareness of the other person in a particular communication medium. FTF communication has the highest social presence, including three primary channels of communication: textual, audio and visual (Short et al. 1976). Visual channels of communication can enhance or even change the meaning of the other channels (Bergiel et al. 2008). Visual cues also improve synchronicity of communication allowing for more back and forth and more rapid adjustments within the interaction (Storper and Venables 2004). For example, eye contact, nods, and facial expressions can indicate that there is mutual understanding (or a lack of understanding) and when thoughts are completed and the other person should respond (Argyle 1969). Greater synchronicity results in more conversation, including more questions, and quicker transference of information.

Removing channels from the interaction hinders this process. For example, Wilson and Williams (1975) demonstrate that when the visual channel is removed (e.g., telecommunication),

interactions are changed. They analyze the Watergate transcripts (consisting of telephone and FTF communication) and find less feedback in telephone communication (less social presence) relative to FTF communication. While they do find that telephone conversations include audio feedback (e.g., "I quite agree"), FTF communication was longer, had more agreements and disagreements, and more questions were asked. Their general finding was that better synchronized discussion in FTF communication leads to more content, relative to telecommunication. CMC, such as e-mail, has the least social presence (having only textual communication), making synchronous interaction more difficult.

SPT highlights the importance of matching the medium of communication to the information task. For example, greater social presence improves task outcomes where the goal is information convergence, which involves reaching agreements or solutions through knowledge sharing and benefits from immediate feedback. However, when the goal is information conveyance, greater social presence does not improve outcomes (Murthy et al. 2003). Similarly, Carey et al. (1997) find that FTF communication improves the solutions for complex tasks but not for simple tasks. Overall, research suggests than when the exact questions are known or simple information conveyance is required, then low social presence communication (CMC) is the best medium. Fewer channels (e.g., audio or visual) allow focus on the simple information at hand, as well as the ability to reread textual communications, thus improving text-only communication in such settings (Short et al. 1976). However, if problems become complicated, if the appropriate questions are not known (i.e., uncertainty exists), or if conflicts may arise then greater social presence improves communication (Short et al., 1976; Daft and Lengel 1986; Noteberg et al, 2003). Greater synchronicity of communication afforded by mediums with higher social presence creates dialogue, with more immediate feedback to questions and the ability to ask subsequent (previously unconsidered) questions based on responses (Short et al. 1976).

Audit tasks vary in nature and thus differ in their need for social presence. For example, as discussed in the survey above, if the auditor simply needs a listing of journal entries, CMC is a better way to request the information. The asynchronous nature of the requests allows the client to provide the required information when they have available time, which is more efficient for both parties and, thus, more likely to be appreciated by the client (e.g., avoiding interrupting the client (Bennett and Hatfield 2013)). Conversely, other tasks, such as the explanation of a fluctuation, would be better served via a communication method with more social presence. That is, in such a vague task, the exact questions are unknown, and the client's reaction to questions may be an important part of the information gathered by the auditor (AICPA 2013). Many audit tasks require the auditor to both request documentation and ask client management for explanations or clarification. Given that the front-line auditors are younger, survey evidence suggests that they are more likely to use CMC than partners would prefer. However, auditors are different than information seekers in prior communications research in that they are trained to be skeptical and are subject to professional standards that describe the need for inquiry.

The above discussion describes the strength of FTF interaction as involving more synchronous discussion resulting in greater questioning by auditors. In an auditing task, increased questioning represents increased skeptical behavior (AICPA 2013; PCAOB 2010b). However, CMC lends itself to information conveyance, such that auditors will be more likely to request documentation than when discussing the issues in-person. This leads to the following hypotheses:

H1: Auditors will ask the client more follow-up questions when communicating FTF than when using CMC.

H2: Auditors will request more documentation from the client when using CMC than when communicating FTF.

Greater social presence also increases trust (Storper and Venables 2004), which can facilitate communications and dialogue between parties. Further, richer communication mediums help people learn more about one another (e.g., skills, experiences, and background) not only allowing for better relationships to be built (Rosen et al. 2007), but for assessment of competencies and abilities. Our survey responses also indicate that partners view this aspect of communication between the staff and the client as critically important to the auditing process. As an indication of relationship development, we expect that FTF communication will include more relationship building statements than CMC.

H3: Auditors will make more relationship building statements when communicating with the client FTF than when using CMC.

Nonverbal Cues and Deception

SPT suggests that the loss of the visual channel in communication, as well as the audio channel, reduces social presence and, thus, can reduce communication effectiveness. However, lack of visual and audio channels also eliminates the nonverbal cues that can indicate deception on the part of the communicator. Frequency of body movements, speech disturbances (pauses and/or "uhs") and a higher pitched tone of voice are indicators of potential deception (e.g., DePaulo 1992; Ekman 1989; Vrij and Semin 1996). Additionally, electronic communication, which is both asynchronous and text-only, allows the message sender to carefully craft his/her message to avoid further scrutiny of the message. These cues are subtle and difficult to explicitly act on, but they likely influence individuals, perhaps without knowing why (Vriji and Semin 1996).

Auditors face many situations that potentially involve aspects of deception by their clients. While outright fraud is relatively rare (Loebbecke et al. 1989), clients may simply

attempt to avoid conveying certain information without lying. That is, certain information may only be offered if specifically asked about. Thus, we employ a broader definition of deception, including acts of omission that may be misleading or misinterpreted (Gasper and Schweitzer 2012). Again, a key aspect of audit inquiry, as it relates to professional skepticism, is the consideration of client reactions to questions (AICPA 2013). Presumably, if client reactions created concerns over the forthcomingness of the client, questioning should intensify. However, prior research demonstrates the difficulty, particularly of the interviewer, in determining deception (see Feeley and Young (1998) for a review of deception studies). Nevertheless, we expect that these non-verbal cues of deception will cause auditors to behave more skeptically, causing them to ask more questions and scrutinize responses.

H4: When the client displays nonverbal cues of potential deception, auditors will ask more follow-up questions relative to FTF interactions where no such cues are displayed.

IV. Experiment

Participants

To examine the proposed hypotheses, we conduct a 3x1, between-subjects experiment. Participants in the study included staff-level audit professionals with approximately 20.53 months average full-time work experience. Participants were 40 percent female and 60 percent male and worked for three of the four international accounting firms and one regional firm.[4] See Table 2 for demographic information.

[Table 2]

[4] We obtained the majority of participants at two offices of an international, Big Four accounting firm, while others completed the experiment at a location other than their firms' office. The results reported do not differ based on data collection site.

Experimental Audit Case

Directions and case materials were administered to the participants via a web-based software platform. As noted in the instructions to the case, participants assumed the role of a staff-level audit professional on a hypothetical audit engagement. After presentation of instructions and client background, each participant was introduced to an experimental confederate in the role of the corporate controller.[5] Participants were then asked to complete testwork on accounts receivable confirmations.

To complete the testwork, participants reviewed three accounts receivable confirmations that had been returned with potential discrepancies between the customer's records and the audit client's records. As part of the assigned task, participants were to determine the nature of the discrepancy and concluded on accounts receivable testwork. Upon reviewing the returned accounts receivable confirmation noting the discrepancy, participants could request more information from the controller.

In the second meeting with the controller, the participant received more information regarding the confirmation. In the FTF conditions, these discussions were audio taped and electronic files were collected by a third party and sent to an independent transcriber who created a written transcript.[6] In all conditions, the controller's answers/narrative and provided documentation to the auditors were the same, dependent on their questions and requests. The nature of the participant's question directed the conversation, as well as what information and which documents the controller provided. If asked, the controller provided information, with supporting documentation if such documentation was requested. Therefore, the participant's inquiries and follow-up questions were important to the information/evidence gathering process.

[5] The experimental confederate was a former accounting professional with public accounting experience. To avoid a potentially intimidating situation for the staff auditor in meeting with the confederate (e.g., Bennett and Hatfield 2013), the confederate was not significantly older than participants and maintained a pleasant demeanor.

[6] The authors did not have access to the audio file itself, only the transcribed narrative.

Although all three confirmations were provided at the same time to the participant for initial review, the confirmations contained different issues and seeded problems.[7] On the first and third confirmation, the customer noted that one of the invoices had not been received by year-end and was not considered a payable on its books. Responses and documentation indicate that the first had been appropriately included in receivables (shipping terms were FOB shipping point) while the third had not (shipping terms were FOB destination).

On the second confirmation, the customer noted that they paid less than what was noted on the confirmation as owed at year-end. If asked, the controller explained that the customer received a discount, resulting in a difference in what was paid ($18,000) relative to what was in accounts receivable and on the confirmation ($19,900). Again, based on the questions, the controller would then explain that customers can receive discounts for paying "early." If verified by the invoice, the participant may notice (and question) why the amount was much greater than 2%, per the stated terms of 2/10, net 30. Upon further questioning, the controller would state that the discount was given to the customer, approved by the sales manager, in order to remain competitive and keep the customer from purchasing a competing product with another company. This lowering of the product's purchase price might be indicative of lower market value, questioning whether there were lower of cost or market issues.[8]

At the end of the audit task, participants were asked to conclude on each of the three confirmations. Participants then responded to questions regarding their perceptions of the audit client and provided demographic information.

Independent Variables

[7] Confirmations and seeded issues were reviewed by an audit partner, with consideration that a staff-level auditor would be the targeted participant. Based on these discussions, the tasks and seeded issues were amended to help ensure that the information and issues were appropriate and that the responses provided by the confederate logical.
[8] Although the participant was not given enough information to make this conclusion on his/her own (e.g., the products' historical cost, margin, etc.), these facts indicate that there is at least a possibility of a valuation issue of inventory.

To test the hypotheses, we manipulate whether the participant met with the controller face-to-face or e-mailed him to ask questions regarding the confirmations. Roughly one third communicated with the controller via email, one third communicated with the controller FTF without any planned nonverbal cues and one third communicated with the controller exhibiting nonverbal cues indicative of deception (e.g., pauses, rubbing his face, avoiding eye contract, and "umm's").[9] Assignment to the three conditions was random. While the information and documentation provided was the same across conditions (dependent on the auditor's line of questioning), these nonverbal cues occurred when asked about the second and/or third confirmations. Assuming that the auditor would want to talk about the confirmations in the order presented (even though all were presented prior to meeting with the controller), having the initial meeting as well as discussion about the first confirmation provided "baseline" behavior of how the controller responds to questions and of his overall demeanor.

Dependent Variables

The dependent variables of interest represent the extent of information gathering and skepticism of the auditors when communicating with the controller. Based on the transcripts of the discussions and e-mail correspondence, we measure quantifiable characteristics of the discussions, including (a) the number of questions asked, (b) the number of exchanges (back and forth) between the two parties, (c) the number of documents requested, and (d) the number of relationship building statements. Additionally, independent coders (blind to condition) rated the skepticism of the discussions regarding the second confirmation, using an eleven-point, Likert-type scale (0 = "Not at all skeptical" to 10 = "Highly skeptical").

[9] While the experimental confederate had to know when to insert these nonverbal cues, as well as memorize the script of what information he was to provide when asked, he was blind to hypotheses.

V. Results

Manipulation Check

As previously mentioned, the information given to participants was dependent on the questions asked and documentation requested, not on the condition to which the participant was assigned. Therefore, between face-to-face and e-mail, we asked how the participant communicated with the controller (i.e., the experimental confederate). Only one person failed this manipulation check. For the nonverbal condition, we measured whether the participant perceived the controller differently when these nonverbal cues were present. As noted in Table 3, when the controller included nonverbal cues, participants perceived him overall as behaving in a manner that may indicate he was less credible (mean = 4.53)[10] than those that met with him face-to-face without the nonverbal cues (mean = 5.40; $t = 1.41$, one-tailed p-value = 0.08) and those communicating via e-mail (mean = 5.71; $t = 1.91$, one-tailed p-value = 0.03). Additionally, when face-to-face, participants also found him less comfortable with questions when demonstrating the nonverbal cues than when he was not (means = 3.78 and 6.10, respectively; $t = 3.23$; one-tailed p-value < 0.01). However, in response to whether he was honest in his responses to questions, there were no differences between conditions, indicating that when the confederate demonstrated the nonverbal cues, it indicated that he was uncomfortable, and perhaps less credible, but not necessarily lying (recall, the controller provided the same information in all conditions).

[Table 3]

Test of Hypotheses

Hypothesis 1 proposes that auditors will ask more follow-up questions of the audit client when communicating face-to-face, compared to communicating via e-mail. As outlined in Table

[10] Participants answered the statement "Mr. Adams was credible" using a nine-point Likert-type scale, where 1 = "strongly disagree" to 9 = "strongly agree."

4, compared to the face-to-face conditions (combined), participants asked more follow-up questions (mean = 10.00 questions) than when using e-mail communications (mean = 2.42 questions, $t = 6.89$, one-tailed p-value < 0.01). Also consistent with SPT and Hypothesis 2, we find that auditors ask for more documents when communicating electronically compared to those communicating FTF without nonverbal cues (mean = 6.91 documents versus 5.15 documents, respectively; $t = 1.76$, one-tailed p-value = 0.04). Finally, as proposed by H3, we find that auditors make more relationship-building statements FTF, compared to CMC (means = 1.64 statements versus 0.71 statements, respectively; $t = 2.81$, one-tailed p-value < 0.01).

[Table 4]

Contrary to the prediction of H4, participants did *not* ask more follow-up questions when the client was providing nonverbal cues associated with deception. That is, when nonverbal cues were presented, auditors asked the controller a similar number of questions, compared to when those nonverbal cues were not present (means = 10.95 and 9.10, respectively; $t = 0.92$, p-value = 0.18; Table 4). However, given that consideration of the overall quantity of questions doesn't measure the participants' specific skepticism regarding the more problematic issue, we also evaluated how skeptical the auditors' line of discussion and questioning was with the controller on that issue. Using the assessment of skepticism, we compared the auditors' actions between conditions.[11] When the nonverbal cues were provided, the auditor was more skeptical (mean = 6.94) than when either the nonverbal cues were not present (mean = 5.55; $t = 1.79$, p-value = 0.04, one-tailed) or the auditor communicated via e-mail (mean = 4.86; t-stat = 2.29, p-value = 0.01, one-tailed). These results suggest that when non-verbal cues indicate a particular issue is

[11] Coders were former auditors with international audit firms. They were blind to condition and resolved differences between themselves, independent of the authors.

uncomfortable for the client, auditors respond with more skeptical behavior and questioning, than when cues are absent or not available (i.e. e-mail).

[Table 5]

V. Discussion and Limitations

In this study we examine how computer-mediated communication (CMC) changes the content of auditor-client interactions relative to Face-to-Face (FTF) communication. These issues were made clear in semi-structured interviews with partners, who demonstrate concern about the extent that younger staff are using CMC relative to FTF communication. Results from a brief survey conducted with staff auditors, managers, and partners indicate that there are generational differences regarding perceptions of when it is appropriate to use CMC. While these generational differences were expected (Bergiel et al. 2008), they indicate that staff auditors are likely interacting with the client via CMC more often than partners are comfortable.

Consistent with Social Presence Theory, results of an experiment suggest that, when communicating electronically, auditors ask fewer follow-up questions of the controller, have shorter overall interactions, and engage in less "give and take" dialogue during the conversation. Further, auditors engage in less relationship building statements when communicating electronically. Consistent with theory, we also find that auditors communicating electronically request more documentation though they ask fewer questions in general.

We also find that nonverbal cues such as pauses, "umms" or higher pitched responses cause auditors to act more skeptically with regard to the specific audit issue where these cues are given. It is important to understand that people are not very good at determining deception, but improvement occurs through repeated interactions where deception occurred and was discovered (Vriji and Simen 1996; Schweitzer 2005). In our setting, participants had very little interaction to determine potential deception, such that greater interaction may have further increased skeptical

behavior. These issues demonstrate the validity of the concerns of partners regarding young staff auditors not spending enough time in personal interactions with the client.

However, CMC has consequential advantages as well. Recall a key aspect of SPT is the importance of matching the task with the most appropriate communication mode. For example, in areas where the questions to ask are known or simple conveyance of information is the primary goal, FTF communication has no benefit over CMC. Even in situations where CMC is the most appropriate communication medium, prior FTF interactions improve subsequent CMC and make it more effective for a broader range of tasks (Powell et al. 2004; Lin et al 2008). Our survey results, and the findings of Bennett and Hatfield (2013), indicate that staff may choose CMC more often than partners would prefer. Thus, explicit considerations and guidance may need to be given to staff regarding the choice of communication method. Further research is required to better understand the effects of communication mode on other aspects of the audit. Also, staff often have a choice on how to communicate. Future research can also help understand the circumstances that affect audit staff choices of communication medium.

Finally, just as telecommunications evolved to improve social presence (Short et al. 1976), CMC is likely evolving as well. For example, Larson (2003) suggest that coming generations are being raised primarily with CMC and have developed ways to communicate emotion and are perhaps better able to discern implicit aspects of communication (e.g., deception). They have developed cues outside of nonverbal cues (e.g., typographic) that allow for richer communication than purely the conveyance of text (Larson 2003). As these generations gain representation in audit firms, the preferences and occurrence of CMC will likely continue to evolve. Research will need to consider how to operate effectively in work environments where CMC is increasingly the norm.

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Table 1
Survey Responses

Panel A: Auditors' Use of Electronic Communications

	Statement	Staff-level Auditors		Managers & Partners		Difference	
		Mean *(SD)*	***n***	**Mean** *(SD)*	***n***	**Mean**	**T-stat** *p-value*
1	I can generally determine people's moods when communicating with them electronically.	3.43 (1.69)	54	2.95 (1.56)	39	0.48	1.41 0.16
2	I can tell when people are trying to hide something from me when communicating with them electronically.	3.00 (1.52)	54	2.54 (1.32)	39	0.46	1.56 0.12
3	After a job interview, it is appropriate to send thank-you message via email rather than sending a handwritten thank-you note.	4.13 2.03	54	4.72 (1.93)	39	(0.59)	1.42 0.16
4	It is appropriate to send condolences via e-mail after a work colleague has had a family member pass away.	3.98 (1.95)	52	3.90 (2.11)	39	0.08	0.19 0.85
5	I would rather meet with my superior face-to-face for annual performance evaluation than to only have an electronic review (i.e., narratives and assessment communicated via email or another electronic system).	6.60 (0.97)	53	6.77 (0.54)	39	(0.17)	1.05 0.30
6	E-mail should be used as the primary form of communication in business settings.	3.38 (1.56)	53	2.68 (1.51)	39	0.69	2.13 0.03

For each provided statement, participants responded on a scale of 1-7 where 1 represents 'Disagree' and 7 represents 'Agree'.

Panel B: Auditor Communications in Given Audit Scenarios

	Statement	Staff-level Auditors		Managers & Partners		Difference	
		Mean *(SD)*	***n***	**Mean** *(SD)*	***n***	**Mean**	**T-stat** *p-value*
1	How would you request the Controller to provide a listing of all journal entries made during the year?	7.24 (2.98)	54	7.77 (2.45)	39	(0.53)	0.94 0.35
2	During discussions with payroll staff, the audit team learns that an employee had been fired for stealing inventory from the company. The staff/senior has a couple of questions to ask the Plant Controller to verify this information. How would you ask these questions?	1.96 (1.18)	54	1.44 (0.82)	39	0.53	2.53 0.01
3	During the week, the audit team identified several minor (immaterial) audit adjustments. The manager wanted the staff/senior to bring these to the client's attention, even though they were immaterial, for their review and consideration. How would you communicate these items to the client?	3.78 (2.68)	54	3.05 (2.38)	39	0.73	1.37 0.17
4	The audit team noticed that while the accounts receivable balance at year-end has increased, the allowance for doubtful accounts has not. They would like to know the policy on how the allowance is calculated by management. If given this task, how would you ask how the estimate was calculated?	4.28 (2.74)	54	3.26 (2.47)	39	1.02	1.88 0.06
5	During testwork regarding revenue, you noted that one large sale was not accounted for in the proper period. The audit team has an audit adjustment to propose to management. If given this task, how would you communicate the details of the adjustment and proposed entry?	2.76 (2.27)	54	1.76 (1.19)	39	1.00	2.73 0.02
6	How would you request the company's secretary to provide the minutes of the Board of Director's Meetings?	8.96 (2.25)	54	8.87 (2.54)	39	0.09	0.18 0.86
7	In discussing the performance of the company during the audited year, the CFO said that it had been a strong year for the company. However, the audit team noted that Inventory Turnover had decreased, indicating that inventory was moving more slowly than in prior years. If given this task, how would you follow-up to ask about inventory levels during the year?	3.65 (2.23)	54	3.23 (2.02)	39	0.42	0.94 0.35
8	How would you request supporting documentation for a selected sample of payments made during the year (e.g. sample of check numbers) in order to test the disbursement approval process?	8.80 (2.18)	54	8.90 (1.73)	39	(0.10)	0.25 0.80
9	The staff is in the process of clearing review for the engagement. For one review note, it asks the staff to check with the Accounts Payable Clerk to make sure there have not been any changes to the accounts payable process. How would you typically communicate with him/her to obtain this information?	6.19 (2.83)	54	5.00 (2.94)	39	1.19	1.93 0.06

For each provided statement, participants responded using a scale of 1-11 where 1 represents 'Primarily In-Person' and 11 represents 'Primarily e-Mail'.

Table 2
Summary of Experiment Participant Demographics

	E-mail	*F2F*	*F2F NV*	*Summary*
n	21	20	19	60
Female	8	11	5	24
Male	13	9	14	36
Mean Experience (in months)[1]	20.35	19.23	22.11	20.53

[1] *Mean Experience* represents the mean number of auditing experience, including internships, (in months) for the participants.

Table 3
Auditors' Perceptions of Controller (Experimental Confederate)

Perception Statement Provided[2]	Group				A vs. B		A vs. C		A vs. D		B vs. C	
	E-mail	Face-to-Face										
		neutral	non-verbal cues[1]	all F2F								
	A	B	C	D	t-stat	p-value[3]	t-stat	p-value[3]	t-stat	p-value[3]	t-stat	p-value[3]
"Mr. Adams was **approachable"**	6.00 (2.10)	7.15 (2.06)	6.21 (1.58)	6.69 (1.88)	1.77	0.04	0.36	0.36	1.26	0.11	1.60	0.06
"Mr. Adams was **honest in his responses to my question(s)"**	5.62 (1.94)	5.60 (2.11)	4.89 (2.00)	5.26 (2.06)	0.03	0.49	1.16	0.13	0.68	0.25	1.07	0.15
"Mr. Adams was **willing to help"**	6.00 (2.41)	6.15 (1.79)	5.68 (1.88)	5.92 (1.82)	0.23	0.41	0.46	0.32	0.13	0.45	0.79	0.22
"Mr. Adams was **credible"**	5.71 (1.87)	5.40 (1.81)	4.53 (2.04)	4.97 (1.95)	0.55	0.29	1.91	0.03	1.43	0.08	1.41	0.08
"Mr. Adams was **forthcoming with information"**	5.62 (1.96)	5.55 (1.90)	4.21 (1.99)	4.90 (2.04)	0.11	0.45	2.26	0.02	1.34	0.09	2.16	0.02
"I liked Mr. Adams"	5.52 (1.57)	6.10 (1.71)	4.84 (1.64)	5.49 (1.78)	1.21	0.13	1.34	0.09	0.08	0.47	2.35	0.01
"Mr. Adams **seemed comfortable with my questions"**	5.43 (1.89)	6.10 (2.44)	3.78 (2.04)	4.97 (2.52)	0.98	0.17	2.63	< 0.01	0.79	0.22	3.23	< 0.01

[1]In the face-to-face, non-verbal cues condition, the experimental confederate added in non-verbal cues that were to indicate he was not comfortable with the auditor's questions (e.g., "umm's", touching face, avoiding eye-contact), compared to the "neutral" condition where the verbal information was the same only the non-verbal cues were not included.
[2]Participants rated perceptions based on a Likert-type scale, from 1 = "Strongly Disagree" to 9 = "Strongly Agree"
[3] p-values are shown as one-tailed.

Table 4
Auditor and Client Discussions

	Group				A vs. B		A vs. C		A vs. D		B vs. C	
	E-mail	Face-to-Face										
		neutral	non-verbal cues[1]	all F2F								
	A	B	C	D	t-stat	p-value[2]	t-stat	p-value[2]	t-stat	p-value[2]	t-stat	p-value[2]
Number of Questions Asked	2.42 (1.89)	9.10 (5.37)	10.95 (7.07)	10.00 (6.24)	4.84	< 0.01	4.58	< 0.01	6.89	< 0.01	0.92	0.18
Number of Documents Obtained	5.10 (2.47)	3.95 (2.26)	4.53 (2.93)	4.23 (2.59)	1.55	0.06	0.66	0.26	1.27	0.11	0.69	0.25
Number of Documents Requested	6.91 (3.78)	5.15 (2.48)	6.05 (3.98)	5.59 (3.28)	1.76	0.04	0.69	0.25	1.33	0.09	0.84	0.20
Number of Relationship-building Statements	0.71 (0.72)	1.50 (1.57)	1.79 (2.07)	1.64 (1.81)	2.01	0.03	2.10	0.02	2.81	< 0.01	0.49	0.31
Number of Back-and-Forth Interactions	3.52 (1.94)	17.75 (8.89)	20.10 (10.78)	18.90 (9.84)	5.91	< 0.01	5.58	< 0.01	8.82	< 0.01	0.74	0.23

[1]In the face-to-face, non-verbal cues condition, the experimental confederate added in non-verbal cues that were to indicate he was not comfortable with the auditor's questions (e.g., "umm's", touching face, avoiding eye-contact), compared to the "neutral" condition where the verbal information was the same only the non-verbal cues were not included.
[2] p-values are shown as one-tailed.

Table 5
Skepticism of Auditor

	Group				A vs. B		A vs. C		A vs. D		B vs. C	
	E-mail	Face-to-Face										
		neutral	non-verbal cues[2]	all F2F								
	A	B	C	D	t-stat	p-value[3]	t-stat	p-value[3]	t-stat	p-value[3]	t-stat	p-value[3]
Skepticism of Auditor[1]	4.86 (2.74)	5.55 (2.87)	6.94 (3.01)	6.23 (2.99)	0.79	0.22	2.29	0.01	1.49	0.07	1.79	0.04

[1]*Skepticism of Auditor* was measured using the written transcript to base how skeptical each participant was in his/her line of discussion and questioning the client (i.e., the experimental confederate). Two graduate students, independent of each other, and blind to condition, rated the skepticism on an 11-point Likert-type scale, where 0 = 'Not at all skeptical' to 10 = 'Highly Skeptical.' Coders resolved any discrepancies between their scores/measures, independent of authors and blind to conditions.

[2]In the face-to-face, non-verbal cues condition, the experimental confederate added in non-verbal cues that were to indicate he was not comfortable with the auditor's questions (e.g., "umm's", touching face, avoiding eye-contact), compared to the "neutral" condition where the verbal information was the same only the non-verbal cues were not included.

[3]Participants rated perceptions based on a Likert-type scale, from 1 = "Strongly Disagree" to 9 = "Strongly Agree."