ABSTRACT

VIGNOVIC, JANE ANN. Effects of Cultural Cues on Perceptions Formed During Computer-Mediated Communication Abstract. (Under the direction of Frank J. Smith and Lori F. Thompson).

Computer-mediated communication, such as e-mail, facilitates cross-cultural interactions by enabling convenient communication. However, the absence of contextual or situational information in e-mails may cause recipients to over rely on dispositional explanations for behavior. An experiment was conducted on 435 students examining how technical language violations (i.e., spelling and grammatical errors) and etiquette deviations from language norms (i.e., short messages lacking a conversational tone) affect a recipient's perceptions of an e-mail sender's conscientiousness, intelligence, agreeableness, extraversion, affective trustworthiness, and cognitive trustworthiness. This study also investigated whether the effects of technical and etiquette language violations depend on the availability of information indicating the e-mail sender is from a foreign culture. Participants' causal uncertainty levels were examined as a potential moderator of the influence the provision of this additional contextual information had on the dependent variables. Results reveal that participants formed negative perceptions of the sender of an e-mail containing technical language violations. Specifically, perceptions of the sender's conscientiousness and intelligence were affected by technical language violations. However, these negative perceptions were reduced when the participants had additional information indicating that the e-mail sender was from a different culture. Meanwhile, negative attributions stemming from etiquette violations were not significantly mitigated by knowledge that the e-mail sender was from a foreign culture. Causal uncertainty had no significant effects. Implications for work organizations are discussed. Overall, it is argued that a greater understanding of cross-

cultural communication via e-mail can aid in the development of appropriate training and tools to increase the success of communication within and between organizations.

Effects of Cultural Cues on Perceptions Formed During Computer-Mediated Communication

by
Jane Ann Vignovic

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APPROVED BY:

_____	_____
Dr. Lori Foster Thompson	Dr. Frank J. Smith
Co-Chair of Advisory Committee	Co-Chair of Advisory Committee

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Dr. Samuel B. Pond, III

BIOGRAPHY

Jane Vignovic was born on July 5, 1979 in Pittsburgh, Pennsylvania. She spent most of her childhood in Brecksville, Ohio and graduated from Brecksville-Broadview Heights High School. She received her Bachelor of Science in Animal and Poultry Sciences from Virginia Tech. After several years of living and working in a variety of environments, Jane began her graduate studies at North Carolina State University where she is pursuing her Ph.D. in Industrial/Organizational Psychology.

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Effects of Cultural Cues on Perceptions Formed During Computer-Mediated Communication

Computer-mediated communication (CMC) is an extensive part of today's workplace. Companies are utilizing CMC technologies (e.g., e-mail, video conferencing, instant messaging, and shared databases) to connect employees and customers throughout the world. The use of these technologies is replacing interactions that previously would have occurred in person or by telephone (Watt, Lea, & Spears, 2002). As CMC has become more commonplace, people are beginning to understand the differences between computer-mediated and face to face (FTF) interactions. One form of CMC, e-mail, is considered a less rich avenue of communication when compared with FTF interactions, because e-mail does not allow nonverbal means of communication (Jünemann & Lloyd, 2003). While some of the differences between e-mail and FTF interactions, such as richness, have the potential to be detrimental, others, such as being able to easily communicate with someone across the world can be beneficial.

Unfortunately, many organizations are uninformed and unaware of the possibility that the technologies upon which they have become so reliant may be responsible for project and communication failures (Susman, Gray, Perry, & Blair, 2003). Since organizations are often quick to try new technologies without fully understanding both the benefits and the consequences of their implementation (Straus, Miles, & Levesque, 2001), more extensive research is needed to gain a better understanding of some of the potential problems that can occur when organizations, teams, and individuals rely on CMC. Some of the seemingly complex organizational problems (e.g., low performance, conflicts, misunderstandings, etc.) that plague distributed teams (e.g., Armstrong & Cole, 2002; Cramton, 2001; Hinds &

Mortensen, 2005), and potentially computer-mediated relationships with clients and coworkers, may be addressed by examining the communication process. Researchers have suggested that some of the technical conditions influencing dispersed teams need to be examined (Cramton, 2001; Pauleen & Yoong, 2001; Susman et al., 2003). For example, what may seem like complex problems (e.g., formation of in-groups and out-groups) causing teams to under-perform may in fact stem from basic person to person communication. Empirical research examining simple person to person CMC is necessary, and may provide answers that will assist in optimization of more complex CMC in teams. Once the communication problems which may occur are identified, targeted solutions can be developed to alleviate them, and the benefits of CMC can be fully realized. The present study addresses the need for research on the sources of problems that can occur during person to person CMC. In particular, this study examines whether the absence of contextual information, such as a communication partner's cultural background, fuels misunderstandings and causes certain types of e-mail recipients to form misattributions about the message sender. This issue is especially important in today's global economy, where computer-mediated cross-cultural interactions are not uncommon. The topic of cross-cultural collaboration is addressed next, followed by a review of the literature on CMC.

Cross-Cultural Collaboration

The nature of today's technology and workplace is such that people who identify with different international cultures are communicating and working interdependently more often than ever before, making successful cross-cultural online communication valuable to many organizations (Fujimoto, Bahfen, Fermelis, & Härtel, 2007). With organizations operating in

larger, multinational environments, there is a need to examine the issues that arise from people working with others from different cultures. In addition, research is needed to determine how employees can be prepared to work with colleagues, collaborators, clients, and customers from other countries (Burke & Ng, 2006). Even if organizations are not directly participating in international business, there is enough diversity within the working population of the United States to warrant concern about the miscommunications that can occur when people from different cultural backgrounds interact. Nearly twelve percent of the United States population was born in another country (Larsen, 2003). Eighty percent of these 33.5 million people are in the prime working age group of 18 to 24 years old (Larsen, 2003). These statistics indicate many workers within the United States are using English as a second language and identify with cultures different from American culture. Due to the international nature of today's organizations and the demographics of people within the United States, employees have the opportunity to encounter cross-cultural interactions with coworkers and customers alike.

Interactions between people from different cultures are at risk for problems stemming from differences in preferred language, cultural norms, and cultural values (Sriussadaporn, 2006). The success of cross-cultural interactions can be hampered because of "incorrect assumptions, lack of understanding, prejudices, anger, and disrespect" (Hugenberg, LaCivita, & Lubranovic, 1996). Disbursed teams and employee interactions with customers provide two good examples of groups at risk for communication misunderstandings due to cultural differences. Communication with customers is often limited to isolated incidents, so there is little time for relationship building; consequently, judgments about others will be

made with limited information. Similarly, disbursed teams tend to have little history as a group and are often very culturally diverse (Cramton, 2002). Problems in communication due to cultural differences may be exacerbated when the communication is computer-mediated.

Today's global economy creates a situation where cross-cultural interactions with customers and dispersed teammates often occur via e-mail. One of the benefits of CMC is it allows people all over the world to communicate more easily than if it was necessary to travel and meet FTF for every interaction, or even if it was necessary to arrange for phone calls around time zones and other appointments. Understanding the implications of cultural differences and how they are reflected in text-based CMC, such as e-mail, is essential due to the reliance on these technologies for communication.

Computer-Mediated Collaboration

CMC is a broad term encompassing a range of technologies where communication occurs through a computer (Barnes & Greller, 1994). CMC can include e-mail, instant messaging, blogging, video and audio streaming, just to name a few examples (Herring, 2004). Many CMC technologies are typically viewed as cheap and easy (Herring, 2004). These are some of the reasons why CMC has facilitated the process of communicating with people from different areas of the world. Companies are able to have online meetings with people across the globe, and employees do not have to physically travel to attend (Pauleen & Yoong, 2001). From a financial perspective, reducing how much employees have to travel is a huge advantage which allows organizations to capitalize on the ease with which they can form distributed partnerships and work teams.

Various communication media can be ranked from rich to lean. Rich media, such as

real time video conferencing, are immediate and provide a large amount of interpersonal information, while lean media, typically text-based, are time-delayed and do not provide interpersonal information (Zornoza, Ripoll, & Peiró, 2002). When CMC (e.g., e-mail, instant messaging, chat rooms, etc.) does not include audio or video support it is very lean, because the only means for communication is through the text. People using these text-based CMC media cannot rely on facial expressions to convey information about their emotional states. If they are angry, for example, they are going to have to carefully choose words that can convey that emotion or it may be lost on the reader.

E-mail is a common text-based CMC technology used by organizations. Unlike real-time chat and instant messaging, for example, it is asynchronous, enabling collaborators to work on their own time. This is helpful when there are significant time zone differences between communication partners. It also helps organizations wishing to allow their employees to work flexible and nontraditional work schedules. Because it is a lean technology, e-mail filters out a number of contextual and visual cues. Unless it is explicitly communicated in text, people collaborating over e-mail will not know the situational differences in the location and environment in which their interaction partners are working. This may cause them to miss important, contextual information such as a teammate's work load, local holidays, and types of equipment being used (Cramton, 2001). E-mail also filters out visual cues such as race, gender, age, and attractiveness. As discussed next, certain benefits, such as a reduction in bias, may accompany this type of cue deprivation.

Potential Benefits of Cue Deprivation During CMC

One of the suggested benefits of text-based CMC is that it may help group members

maintain a relatively equal status, which is important to communication, because the hierarchy and structure of a group influences the behavior of the people within the group (Dubrovsky, Kiesler, & Sethna, 1991). During group interactions, individuals consider demographic and social variables that often have visual cues (e.g., race, gender, age, social status, etc.) during the establishment of members' positions within the group (Dubrovsky et al., 1991). When people interact with others, they also use social categorizations as indicators of how much and what people know (Clark & Marshall, 1981; Krauss & Fussell, 1990). Dubrovsky et al. (1991) conducted an experimental study comparing FTF and computer-mediated group decision making processes. The groups were comprised of a "high status" older MBA student and three "lower status" freshmen students, and the students were required to work together on a complex task (Dubrovsky et al., 1991). In the FTF experimental condition, the higher status member dominated and was more influential in the decision making process; but, in the CMC condition, members maintained a more equal level of influence and input (Dubrovsky et al., 1991). By reducing some of the social cues that are often present in FTF communication, CMC may encourage open discussions and allow people to communicate with each other on a more equal level.

Text-based CMC filters out many of the visual cues that are not task related which may help people make decisions based on more relevant information than demographics. Research in many areas of psychology has demonstrated that nonverbal cues influence peoples' first impressions of others (Straus et al., 2001). For example, Crocker, Cornwell, and Major (1993) suggested overweight people are often negatively stereotyped, and Hart and Morry (1997) found that a person's race influenced the trait inferences made about him

or her. There are a number of social categories which have identifying visual cues, and reducing the number of these visual cues may be beneficial to some of these identifiable groups. For example, researchers have suggested text-based CMC, such as e-mail, could benefit people with disabilities in that it decreases the visibility of behaviors that trigger discrimination; someone reading an e-mail would not necessarily know the sender has a disability (Watt et al., 2002). Bias activated by visual cues extends to important management decisions. Evidence from research over the years has indicated that interview decisions, for example, are often heavily influenced by demographic variables unrelated to a job (Raza & Carpenter, 1987). In general, physically attractive people are often favored, because they are viewed more positively than less attractive people (Cann, Siegfried, & Pearce, 1981; Gilmore, Beehr, & Love, 1986; Marlowe, Schneider, & Nelson, 1996). Because of their appearance, physically attractive people tend to be considered more intelligent and likable compared to less attractive counterparts (Feingold, 1992). Straus et al. (2001) conducted an experimental study comparing judgments based on mock interviews conducted FTF, by video conference, or by telephone. They found that less physically attractive applicants were rated significantly more favorably after a telephone interview than after a FTF interview (Straus et al., 2001). Similarly, Anderson (2003) suggested that technologies that filter visual cues may help reduce adverse impact from interviews, because interviewers do not know the ethnic identity of an applicant. In short, when CMC technologies are used that do not have a visual component allowing communicators to see each other, people may be able to work on a more equal status level, where irrelevant physical attributes are not incorporated into people's judgments of each other.

Potential Drawbacks of Cue Deprivation During CMC

While there seem to be many benefits to the elimination of visual cues during text-based CMC, there may also be drawbacks. When people are communicating through text on a computer, not only do they lack visual information about their communications partners, they also do not have information about the context in which their partners are working. Because there is more information and more immediate feedback in FTF communication than in CMC, judging a person's knowledge, skills, and abilities is easier in FTF communication (Becker-Beck, Wintermantel, & Borg, 2005).

When employees rely on CMC, errors can occur due to the intricacies of the interaction (Cramton & Webber, 2005). As communication problems transpire, people naturally look for a cause or a reason to explain the source of the problem. Social psychology commonly places these explanations into two broad categories – those that are situational in nature and those that are dispositional. That is, the recipient of a CMC message may attribute a miscommunication to situational factors such as technology problems and/or other external constraints impinging on the sender. Alternatively, he or she may attribute a miscommunication to dispositional variables such as the sender's carelessness, poor attitude, lack of skills, and so forth.

Attribution theory posits that people favor dispositional over situational explanations – a phenomenon often referred to as the fundamental attribution error. The fundamental attribution error is when people fail to take into account the situational variables influencing a person's behavior and attribute behavior to a person's disposition (Heider, 1944; Jones & Nisbett, 1972). One well supported theory of how people make attributions is Trope's

two-stage model (Trope, 1986; Trope & Liberman, 1993). According to this model, during the first stage, a person automatically observes and identifies a dispositional explanation for another person's behavior. It is not until the second stage that a person may take into account possible situational influences affecting the observed person (Trope, 1993). Not having information about a person's situation can increase the likelihood of the fundamental attribution error. When contextual information is not available, people will have trouble moving to the second stage of the process, thereby increasing the likelihood of accepting their initial dispositional explanations for behavior. In short, filtering out cues signaling a person's situation can serve as a drawback leading to faulty attributions.

Attributing another's behavior primarily to dispositional variables can influence people's judgments of each other as well as their future interactions (Cramton, 2001). To examine the attributions people make during CMC, Cramton (2001) used teams comprised of four members which included two collocated members and two dispersed members. Each team had to complete a fairly complex business task. Under these conditions, Cramton (2001) investigated the attributions people tended to make when working on a task where they were not able to have FTF interactions. These attributions were compared to those formed when FTF interactions were available. Examination of the CMC transcripts revealed team members did not communicate much information about the context of the situation within which they were working, which decreased the situational variables available to explain dispersed communication partners' behavior. Even when contextual variables (e.g., vacations, deadlines, different grading criteria) were communicated to other team members, that information was not often remembered (Cramton, 2001). Results of Cramton's (2001)

study indicated that when teams are primarily using CMC, individuals may fail to account for the situational variables which are influencing another person's behavior and rely instead on dispositional explanations. It is likely that similar attributions will be relied upon during one-on-one communication through e-mail.

The assumptions people make about others based on the information available to them have implications for their future communications and behavior (Cramton, 2002). If an e-mail recipient attributes a simple miscommunication in an e-mail to an e-mail sender's character flaw, future interactions with that person may be problematic. An e-mail recipient's first impression may influence future interactions in part because research has found that people tend to elicit from others the behaviors they expect, that is, information that further confirms their first impressions (Van Swol, 2007). Moreover, research has demonstrated people suffer from the negativity effect which occurs when individuals rely more heavily on negative information than positive information when they are evaluating others (Skowronski & Carlston, 1989; Vonk, 1993). When using CMC, if there are salient negative occurrences without contextual (i.e., situational) information to explain them, people may make extremely negative judgments of others. Thus, not only is there the risk that people will attribute information in an e-mail to a sender's disposition, but the e-mail recipient may tend to focus on negative information when making those attributions. "Interpretations [of communication failures] can change people's perceptions of each other, their willingness to cooperate, and the ways in which they communicate and cooperate" (Cramton, 2001, p. 350). A small miscommunication has the potential to escalate into serious issues.

Proposed Effects of Cultural Cues on Attributions

As discussed earlier, many of today's workplace interactions are cross-cultural in nature. A person's culture is a very important contextual (i.e., situational) variable which may influence his or her behavior. While culture, a shared system of beliefs and norms, can be considered at many different levels, for the purpose of this study the idea of national-level culture is what is referenced (Hofstede, 1991). A person's culture defines some of the norms and rules for behavior as well as his or her language of preference. Culture is often conveyed to other people through visual and auditory cues, such as distinct features or an accent when speaking. Such cues are not typically available in text-based CMC; therefore, it is possible that an e-mail recipient will not know that his or her communication partner identifies with a culture different from his or her own. An e-mail recipient may therefore rely on dispositional attributions about a sender's behavior even when situational variables related to the sender's culture would provide more appropriate explanations. It is suggested that an important part of successful communication between two people from different cultures is understanding the other's culture. Unfortunately, some of the same technologies that allow people across the world to communicate conveniently also hide the contextual cues that help people determine they are communicating with someone who identifies with another culture (Hugenberg et al., 1996).

Technical language violations (e.g., spelling and grammar errors) and phraseology that deviates from expected norms are two problems that can occur during text-based CMC exchanged by people from two different cultures. Although these problems may be attributed to a sender's disposition, they would actually be the result of the sender using English as a second language or using etiquette norms based on a culture different from the e-mail

recipient's culture. Writing style, such as people's choice of words and spelling errors, may influence the impressions others form of them (Lea & Spears, 1992). Research supports this assertion: spelling errors have been found to influence people's perceptions of the writer (Kreiner, Schnakenberg, Green, Costello, & McClin, 2002). In CMC, typographical errors (i.e., typos) may be attributed to a person being in a hurry or carelessness (Lea & Spears, 1992). When people read an e-mail with technical language violations, the attributions they make about the e-mail sender could potentially influence their overall opinion of the sender.

One attribution that may be influenced by technical language violations concerns the construct of conscientiousness. While there is some variability in the dimensions that people believe should be incorporated into the definition of conscientiousness, the ideas of carefulness and thoroughness are generally included (McCrae & Costa, 1987). If recipients read a written product from a sender that includes errors and mistakes, they may believe that the sender was not careful and thorough when writing. These beliefs would likely translate into negative evaluations of the communication partner's conscientiousness. The likelihood of people having negative perceptions of others based on their writing can be seen in many areas of the workplace. Most career advice publications and websites include the suggestion that job seekers should proofread résumés and cover letters, because these written products are seen as a personal reflection of job seekers; spelling and grammatical errors may therefore negatively influence others' perceptions of the writer (e.g., "Avoid résumé mistakes that eliminate you"; Vogt, 2007). Similar to résumés and cover letters, e-mail communication between two people that do not know each other well provides information that people can use to form impressions. If e-mail recipients do not have situational information indicating a

collaborator is indeed from a different culture, they will likely attribute spelling and grammar errors in an e-mail to dispositional traits such as conscientiousness; but, if recipients have information about a collaborator's non-native culture, they may be more likely to take that situational information into account and "excuse" the errors when making judgments about that collaborator. That is, they will make allowances for the person due to the situational constraints imposed by cross-cultural collaboration. As such, recipients should not be as inclined to attribute technical language errors exclusively to a sender's disposition when the sender is known to be "foreign" or "non-native."[1]

> *Hypothesis 1*: There will be an interaction between cultural cues and technical language violations such that information revealing an e-mail sender's non-native identity will reduce the negative effects of technical language violations on a recipient's perceptions of the sender's conscientiousness.

Conscientiousness may not be the only dispositional variable influenced by technical language violations. In an experiment conducted by Kreiner et al. (2002), a significant, negative relationship was found between spelling errors in an essay and a person's perception of the essay writer's intellectual ability. The relationship between spelling and grammar errors and intellectual ability is also reflected in the results of a study by Alexander (1985) which found older children perceived vocabulary and grammar skills as a part of intelligence. It is expected the relationship between errors in language use and perceived intelligence will extend to e-mail communication and be demonstrated in the current study.

> *Hypothesis 2*: There will be an interaction between cultural cues and technical language violations such that information revealing an e-mail sender's non-native identity will reduce the negative effects of technical language violations on a recipient's perceptions of the sender's intelligence.

Another outcome which may be influenced by people's judgments of an e-mail

sender is trust. The concept of trust incorporates the idea of having confidence in another's behavior. This confidence is important in the workplace where people are often dependent upon each other. The level of interpersonal trust which is formed influences interactions between people (Cook & Wall, 1980). When people are not interacting FTF, there are fewer social cues for them to use when making judgments about interpersonal trust (Wilson, Straus, & McEvily, 2006). Due to the lack of social information in text-based CMC, a person has to make a judgment of interpersonal trust exclusively based on what and how something is shared in writing.

Several facets are believed to lead to perceptions of trust. Many researchers have addressed the idea that the concept of trust can be parsed into different dimensions (Butler, 1991). One conceptualization empirically supported by McAllister (1995) is that there is an affective component and a cognitive component to trust. Whereas affective trust encompasses interpersonal care and concern, the cognitive component of trust captures a rational decision, based on experience, about factors such as another person's reliability, responsibility, competence. Butler and Cantrell (1984) also examined the importance of some of the theorized factors comprising the multidimensional construct of trust and found the dimension of competence to be critical. It is likely that technical language errors on the part of an e-mail sender can influence a recipient's judgment of the sender's competence. Considering the important linkage between competence and trust, these errors may in turn adversely affect how much the recipient trusts the sender. This effect is believed to be strongest in the absence of cues providing contextual explanations for technical language errors. As operating cross-culturally is a situational constraint that presumably "excuses"

technical language violations to a certain degree, the following interaction is expected.

> *Hypothesis 3*: There will be an interaction between cultural cues and technical language violations such that information revealing an e-mail sender's non-native cultural identification will reduce the negative effects of technical language violations on a recipient's cognitive perceptions of the sender's trustworthiness.

Technical language violations are not the only area of concern during cross-cultural exchanges. Etiquette may also be an issue. People from different cultures can vary in their etiquette rules and norms. For example, in Eastern cultures, employees do not often have public debates or discussions, and an individual from a Western society may interpret an Eastern person's lack of participation in this type of discussion as secretive, difficult, or untrustworthy (Choi, Nisbett, & Norenzayan, 1999). During communication, cultural information is an important consideration when interpreting what and how something is being said.

Extending this idea to CMC, e-mail etiquette can be culturally specific (Carmel, 1999). The business world has taken notice of these issues, providing training to help head off challenges stemming from cross-cultural e-mail etiquette violations. For example, courses are offered to Chinese small business owners on social etiquette for working with Western companies; one of the topics addressed in these classes is e-mail etiquette (Fong, 2004). According to Fong (2004), one of the problems these business owners have is sending e-mails lacking the niceties expected by many Westerners. Consequently, training is designed to increase awareness of this issue. Trainees have emerged from this program vowing to avoid sending, "business e-mails [that] consist only of a litany of prices and dates" and promising, "to spend more time chitchatting with clients" (Fong, 2004, p. B.1). Clearly, different cultural norms for e-mail etiquette can influence how a message is phrased.

An e-mail's ratio of task to nontask communication (i.e., the "niceties" referenced above) may also be affected by language proficiency. People writing in their second language may lack comfort or confidence in using a language they have not perfected. When communicating with new people they may therefore choose to keep e-mails as simple and short as possible to communicate what is necessary without making technical language errors. Keeping e-mails short and to the point to avoid the chance of making errors is sometimes specifically suggested to new English speakers (e.g., "How to avoid making mistakes in English"). Unfortunately, an e-mail conveying only necessary information while lacking a conversational tone may be interpreted as rude or curt. Indeed, Americans tend to view overly concise e-mail messages as rude (Carmel, 1999). Meanwhile, a survey conducted by Collett (2004) identified tactlessness as one of the top seven errors in e-mail etiquette that bother business managers. While there are an extensive number of variations of how e-mail etiquette could differ between cultures, for the purpose of this study, etiquette deviation will be operationalized as a difference in expected length and the conversational style of e-mails.

McCrae and Costa (1987) suggest people low in agreeableness may tend to behave rudely. Therefore, it is expected that someone reading an e-mail that is unusually short and lacking a conversational tone will rate the e-mail sender low on agreeableness unless the recipient realizes there are cross-cultural reasons for this etiquette deviation.

> *Hypothesis 4*: There will be an interaction between cultural cues and etiquette deviations such that information indicating an e-mail sender's non-native identity will reduce the negative effects of etiquette deviations on a recipient's perceptions of the sender's agreeableness.

The extraversion factor of personality refers to a person's sociability (McCrae & Costa, 1987). If a person receives an unusually short e-mail message which lacks a conversational tone, he or she may presume the sender to be low in the sociability component of extraversion. Again, this dispositional explanation for a message that violates conversational e-mail norms is particularly likely in the absence of information indicating the sender's status as an international collaborator.

> *Hypothesis 5*: There will be an interaction between cultural cues and etiquette deviations such that information indicating an e-mail sender's non-native identity will reduce the negative effects of etiquette deviations on a recipient's perceptions of the sender's level of extraversion.

Similar to the expectation that the senders of e-mail messages with technical language errors will be perceived as relatively low in competence, and therefore cognitively perceived as relatively low in trustworthiness, a person who sends an uncommonly terse e-mail may be perceived as lacking competent interpersonal skills necessary for work. Interpersonal skills are critical in most areas of work (Butler & Waldroop, 2004), so other employees may consider poor interpersonal skills a serious problem. As stated earlier, the cognitive component of trust captures a rational decision, based on experience, about factors such as another person's reliability, responsibility, and competence. If a person believes that another person is lacking a critical skill necessary for work (i.e., interpersonal skills), they will likely question that person's competence to successfully do a job.

Additionally, as stated earlier, there is also an affective component to trust. The affective component of trust is a more specific form of interpersonal trust and relies on demonstration of interpersonal care and concern (McAllister, 1995). Without demonstration

of this care and concern, perceptions of affective trust may not be high. Furthermore, people tend to trust others who they like more than those they do not enjoy (Parasuraman & Miller, 2004). According to Ayios (2003) interpersonal competence is a determinant of trust. Thus,

> *Hypotheses 6 & 7*: There will be an interaction between cultural cues and etiquette deviations such that information indicating an e-mail sender's non-native identity will reduce the negative effects of etiquette deviations on a recipient's cognitive (*Hypothesis 6*) and affective (*Hypothesis 7*) perceptions of the sender's trustworthiness.

Individual Differences in the Effects of Cultural Cues on Attributions

While evaluating the world around them, people tend to utilize various information-processing strategies and behaviors to alleviate any feelings of doubt when they are unsure of why something is happening or do not understand something (Weary & Edwards, 1994). Weary and Edwards (1994) have examined and developed a scale to measure what they call "causal uncertainty" - the differences individuals have in confidence about their ability to understand the cause and effect relationships in the general social world and during specific social interactions (Edwards, 1998; Weary & Edwards, 1994). Individuals with a great amount of causal uncertainty are less confident they understand the cause of events than are those who are lower in causal uncertainty (Edwards, 1998). Relative to those low in causal uncertainty, individuals high in causal uncertainty are less likely to take into account situational information when judging the behavior of others (Edwards, 1998). Within the framework of Trope's two-stage model (Trope, 1986; Trope & Liberman, 1993) once a person automatically observes and identifies a dispositional explanation for another person's behavior, those high in causal uncertainty are less likely to move to the second stage and evaluate the possible situational influences affecting the observed person (Edwards, 1998).

People high in causal uncertainty may fail to attend to situational information because they are not confident in their abilities to notice and assign causes; consequently, they base their perceptions exclusively on the individual (Edwards, 1998).

Edwards (1998) conducted a laboratory study in which participants read either a positive or negative scenario about a hypothetical college student's behavior and characteristics. Then, the participants read either a positive, negative, or ambiguous description of the student's behavior as viewed by a roommate (Edwards, 1998). Participants were then asked to make attributions about characteristics of the roommate, in particular, how harsh or lenient the roommate was in his/her assessment of the student. The participants also rated how confident they were about the attributions they made (Edwards, 1998). When rating the roommate, the information about the student was considered situational information (Edwards, 1998). Those participants that were high on causal uncertainty, were less likely to incorporate that situational information into the decision-making process when they were making attributions about the roommate (Edwards, 1998). Participants high in causal uncertainty were also less confident in the attributions they made compared to those low in causal uncertainty (Edwards, 1998). For the current study, it is expected that a participant's level of causal uncertainty will moderate the influence additional information about an e-mail sender's situation (i.e., cultural identification) will have on the attributions made about the e-mail sender.

> *Hypotheses 8-10*: E-mail recipients' causal uncertainty levels will influence the effects of information indicating that the sender of an e-mail containing technical language violations identifies with a foreign culture. Additional information about an e-mail sender's cultural identification will affect the conscientiousness (*Hypothesis 8*), intelligence (*Hypothesis 9*), and trustworthiness (*Hypothesis 10*) attributions formed by e-mail recipients with lower causal uncertainty more than they will affect

the attributions formed by recipients with higher causal uncertainty.

Hypotheses 11-14: E-mail recipients' causal uncertainty levels will influence the effects of information indicating that the sender of an e-mail containing etiquette deviations identifies with a foreign culture. Additional information about an e-mail sender's cultural identification will affect the agreeableness (*Hypothesis 11*), extraversion (*Hypothesis 12*), cognitive trustworthiness (*Hypothesis 13*), and affective trustworthiness (*Hypothesis 14*), attributions formed by e-mail recipients with lower causal uncertainty more than they will affect the attributions formed by recipients with higher causal uncertainty.

Method

Participants

The participants for this study were 435 student volunteers enrolled in an introductory psychology class at a large southeastern university. Students received partial course credit for their participation. The sample was 56% female and 44% male. The age of participants ranged from 17 to 29 years (M = 18.88, SD = 1.43). Eighty-two percent of participants were Caucasian, 7% were African-American, 4% were Asian, 2% were Hispanic, 1% were American Indian, and 4% identified themselves as belonging to another ethnic group. Of the participants, approximately 67% were freshmen, 21% were sophomores, 7% were juniors, and 4% were seniors. Only participants born in the United States whose first language was English were included in this study. Participants that identified themselves as born outside the United States or whose first language was not English were excluded from analyses, because the technical language and phraseology deviations in the experimental scenario may not be as salient for them.

Design

There were two independent variables for this experiment. The first independent variable, cultural cue, consisted of two levels: known (explicit indication that the e-mail

author is from a foreign culture) and unknown (the exclusion of the e-mail author's culture). The second independent variable, e-mail linguistic deviations, consisted of three levels including: control (e-mail was without technical language violations and used etiquette typical of a person from the U.S. culture), technical language violations (e-mail contained spelling and grammatical errors), and etiquette deviations (e-mail which was relatively terse and lacked a conversational tone). Due to the high percentage of immigrants from Asian nations in management and professional positions (Larsen, 2003), the technical language violations condition was operationalized by using errors said to be typical of people from an Asian culture (i.e., incorrect prepositions, homophones, lack of noun-verb agreement).

The two independent variables were fully crossed. Participants were randomly assigned to one of the six conditions of the 2 (Cultural Cue) X 3 (E-mail Linguistic Deviations) design. The dependent variables included ratings of the e-mail author's intelligence, conscientiousness, cognitive trustworthiness, agreeableness, extraversion, and affective trustworthiness. Causal uncertainty was a continuous variable examined as a moderator of the predicted relationships.

Procedure

After participants volunteered for this experiment, they used their university identification name and password to access a hyperlink to the experimental website. The link was available for participants to use at their convenience when they had access to a computer and time to complete the experiment. All materials were presented on the experimental website. Once participants completed an online consent form, they were presented a scenario describing the circumstances surrounding the e-mail correspondence reviewed in this study.

They then proceeded to the next website where they were presented a portion of the e-mail to read.

The study scenarios and content of the e-mail were created by the author of this thesis. The scenarios asked participants to imagine they were about to begin working on a project with an unknown other person from a different division of the organization. Half of the scenarios revealed nothing about the unknown person's language or cultural background. The remaining scenarios indicated that the unknown other person was a non-native English speaker from outside of the U.S. Appendix A provides copies of both scenarios. All scenarios instructed participants to click a link which sent them to the introductory e-mail sent by the unknown other person.

A standard e-mail was created with the previously described business scenario in mind. Then, while keeping the content consistent, aspects of the e-mail were modified for each e-mail linguistic deviation included in this study. The e-mails corresponding to each condition are available in Appendix B. For the technical language violation conditions of this study, eight spelling and grammar errors were incorporated into the e-mails. Spelling errors were mistakes (e.g., homophones and inappropriate use of contractions) that would not be detected by an English spell checker. For example, "back ground" was used instead of background; and, "you're" was used when "your" was appropriate. Grammatical errors included: use of a singular word when a plural word was more appropriate (e.g., "greeting" instead of "greetings"), a comma slice, use of the wrong word ending (e.g., "wanting" instead of "wanted"), use of a verb that does not agree with the tense of the noun (e.g., "have" instead of "has"), and inappropriate choice of a preposition (e.g., "on" instead of "in"). There

was one error in 80% of the sentences in the e-mail.

For the etiquette deviation condition for this study, short (i.e., terse) and long (i.e., conversational) versions of the same e-mail message were created. For the shortened version, care was taken to reduce the conversational tone, yet still communicate the same factual information included in the longer e-mail used in this study. For the longer version of the e-mail, care was taken to ensure any "filler" information was not substantive and/or addressed neutral topics such as the weather. The goal was to create a conversational tone without providing or implying any particular information about the e-mail sender's personality.

Pilot test volunteers evaluated the variations of the e-mail excerpts. The items used for this pilot study were created for this research (Appendix C) and used 5-point Likert-type response options. The pilot data confirmed that the differences in the e-mails (a) were noticeable and (b) did not influence the actual meaning of the excerpts.

The variation of the e-mail the participants saw depended upon the experimental condition to which they were assigned. One hundred and forty-eight participants received a transcript of e-mail correspondence containing no errors. An additional 149 participants were assigned to the technical language condition and saw e-mail correspondence containing technical spelling and grammatical errors. The remaining 138 participants were assigned to the etiquette deviation condition and saw e-mail correspondence that was significantly shorter and less conversational than the e-mail in the control condition. Within each of these conditions, approximately half of the participants received a study scenario informing them that the e-mail sender was a non-native English speaker from a different culture; the others received a study scenario that provided no information about the sender's cultural or

language status.

After reading the e-mail, participants took online versions of surveys measuring their perceptions of the target e-mail sender including the e-mail sender's: personality (i.e., conscientiousness, extraversion, and agreeableness), intelligence, cognitive trustworthiness, and affective trustworthiness. The participants then completed measures on themselves, which assessed their own causal uncertainty, as well as some other variables not examined in this study. So that an accurate description of the sample could be attained, once all other measures were completed, participants were also asked to report their gender, age, ethnicity, class standing, country of origin, and first language (see Appendix D). The length of time for participants to complete the study was recorded by the website. The participation time varied; but on average, the experiment took about 22 minutes (SD = 22.08). At the completion of the study, participants viewed a web page with an online debriefing form that provided an explanation of the study and contact information in the event of questions or concerns.

Measured Variables

Perceived personality of e-mail sender. Thirty items of the International Personality Item Pool (IPIP) (Goldberg, 1999) were modified to assess each participant's perception of the e-mail sender's conscientiousness (10 items, alpha = .87), extraversion (10 items, alpha = .83), and agreeableness (10 items, alpha = .83) (see Appendix E). The IPIP was chosen because previous research has demonstrated its validity when used in a web-based format (Buchanan, Johnson, & Goldberg, 2005). Participants were given a 5-point Likert-type scale to rate how well each statement described the author of the e-mail excerpt they read. Response options ranged from 1 (*Very Inaccurate*) to 5 (*Very Accurate*). Responses for each

scale were averaged, and high scores indicated high levels of perceptions of the sender on each of the measured facets of personality.

Perceptions of e-mail sender's intelligence. Five 5-point Likert-type items (alpha = .86) were created for this study to assess each participant's perception of the e-mail sender's level of intelligence (see Appendix F). Response options ranged from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Responses to scale items were averaged, and high scores indicated high levels of perceived intelligence.

Perceptions of e-mail sender's trustworthiness. Five items modified from McAllister's (1995) measure of cognition-based trust (alpha = .85) and three items (alpha = .76) modified from McAllister's (1995) measure of affective-based trust were used to assess each participant's perception of the e-mail sender's trustworthiness (see Appendix G). The original cognition-based trust scale included three items, but two of those original items reference more than one concept per item. For the purpose of this study, each of the double-barreled items was separated into two items. Also, to maintain consistency for this study, the original 7-point response scale was changed to a 5-point scale. Response options ranged from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) and the responses for each scale were averaged to obtain overall scores for each facet of trustworthiness. Higher scores indicated higher levels of perceived trustworthiness.

Causal uncertainty. Weary and Edwards' (1994) fourteen-item (alpha = .85) Causal Uncertainty Scale (CUS) was used to assess each participant's degree of causal uncertainty (see Appendix H). Participants were given a 5-point Likert-type scale to rate how much they agreed or disagreed with each item. Response options ranged from 1 (*Strongly Disagree*) to 5

(*Strongly Agree*). Responses to this scale were averaged and participants receiving higher scores were indicated to have higher levels of causal uncertainty than those receiving lower scores.

Manipulation checks. As shown in Appendix I, participants were asked several factual questions about the e-mail excerpt to ensure they read and understood the passage. True/False response options were provided. Three of these items (alpha = .78) were manipulation checks used to ensure there was a difference between the conditions which received information about the sender's cultural background and those that did not. These True/False scales were summed to obtain a scale score for use in analyses and a low score indicated the perception that someone was more likely to be from another country and using English as a second language. Also, several 5-point Likert-type items were included along with a 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) scale to ensure errors (2 items, alpha = .89) or differences in phraseology (3 items, alpha = .70) were noticeable to the participants in the experimental conditions (see Appendix I). An additional item (Item 1, Appendix I) was also intended to be a check for the technical condition, but was removed from analyses, because it severely lowered the reliability of the scale, indicating it was not capturing the same type of information as the other two items. For these manipulation checks, items for the respective Likert-type scales were averaged.

Results

Data Cleaning and Preliminary Analyses

This study was completed by 517 individuals; however, 82 cases were removed because they failed to meet the criteria for inclusion in this research, producing the final

sample size of 435 reported earlier. Specifically, 37 cases were eliminated because participants either indicated they were born in a country other than the United States or they chose not to indicate their country of origin. Removal of these cases helped ensure the sample represented the population targeted in this study. The remaining 45 cases were removed on account of negligence. The credit individuals received for this study was not contingent upon the effort they put into their participation. Unfortunately, this resulted in a number of participants whose response times indicated they did not put a reasonable amount of effort into reading the study materials or items before selecting response options. As noted earlier, participants' response times were tracked. Negligence was operationalized as a response time of less than 10.07 minutes. This cutoff was determined by a small pilot sample ($N = 7$) of college-educated individuals, who were instructed to (a) read through the study materials at their normal reading pace without thinking about the information or considering the response options and then (b) select the same response options for all items after they read each one. This method for operationalizing negligence was intentionally devised to produce a conservative criterion for eliminating cases – to avoid removing legitimate participants who simply read and thought quickly. The mean time for the pilot sample to thoughtlessly read through the study materials and click response options was 10.07 minutes. Therefore, all participants who took less than this amount of time were removed from the study. This process resulted in the removal of 45 cases, which were fairly evenly distributed across the study conditions. A chi-square goodness of fit test confirmed that these case removals did not disproportionately affect the sample size in any one condition, $\chi^2 (5, N = 45) = 1.80$, $p = .88$.

Preliminary analyses were conducted on the resulting sample of 435 cases to ensure each of the conditions was comparable with regard to participant demographics, as well as to ensure distributions were appropriate for further analysis. There was not a significant difference in the makeup of the conditions based on gender (χ^2 (5, N = 434) = 6.53, p=.26), age (F (5, 421) = .68, p = .64, η^2 = .01), and ethnicity (χ^2 (25, N = 435) = 34.29, p = .10). Further analyses indicated that the skewness and kurtosis values for the data collected in this study were within acceptable ranges.

Table 1 presents the descriptive statistics and intercorrelations for perception of the sender's conscientiousness, intelligence, cognitive trustworthiness, agreeableness, and affective trustworthiness, as well as, the participant's causal uncertainty. Table 2 shows the sample sizes and the average scale scores, per condition, for each of the measured variables assessed in this study.

Next, the data were examined to determine whether the experimental manipulations were noticed, as intended. Results confirmed the effectiveness of each of the manipulations. Specifically, those randomly assigned to receive information about the e-mail sender's non-native culture (M = 1.02, SD = 1.03) were less likely than those who did not receive this information (M = 2.22, SD = 1.09) to endorse True/False items indicating the e-mail sender is a native English speaker from the U.S. (t (425) = 11.65, p < .001, η^2 = .26). In addition, ANOVA results (F(2, 431) = 63.33, p < .001, η^2 = .30) and follow-up post hoc tests employing a Bonferroni correction indicated that individuals who read an e-mail with technical language errors (M = 2.22, SD = 1.05) were significantly more likely to report spelling and grammatical errors than their counterparts who either read e-mails with no

errors / deviations whatsoever (M = 3.42, SD = .68) or e-mails with etiquette errors only (M = 3.29, SD = .67). For the etiquette deviation manipulation ANOVA results ($F(2, 432) = 20.44$, $p < .001$, $\eta^2 = .14$) and follow-up post hoc tests employing a Bonferroni correction indicated that individuals who read an e-mail with deviations in etiquette (M = 3.07, SD = .92) were significantly more likely to report e-mails which were a different tone and not as friendly as typical introductory e-mails compared to participants who either read emails with no errors / deviations (M = 3.82, SD = .67) or e-mails with technical language errors only (M = 3.57, SD = .66).

Hypothesis Tests

Hypotheses 1-3 proposed that there would be an interaction between cultural cues and technical language violations such that information revealing an e-mail sender's non-native identity would reduce the negative effects of technical language violations on a recipient's perceptions of the sender's conscientiousness (Hypothesis 1), intelligence (Hypothesis 2), and cognitive trustworthiness (Hypothesis 3). To test these hypotheses, a 2 X 2 MANOVA with 297 participants was conducted. Both levels of the cultural cue independent variable (present and not present) were included along with two levels of the e-mail linguistic deviation independent variable (none, technical language violations). Dependent variables included the perceived conscientiousness, intelligence, and cognitive trustworthiness of the e-mail sender. The Box-M test for the homogeneity of variance-covariance matrices across design cells produced a significant result ($F(18, 303286.72) = 2.71$, $p < .001$); however, since sample sizes for each of the cells are relatively equal, this is not of concern (Tabachnick & Fidell, 2007).

The overall MANOVA indicated significant main effects for both the presence of technical language violations and the presence of cultural cues, as well as, a significant multivariate effect for the interaction between the presence of cultural cues and technical language violations on the dependent variables, as indicated by Wilks' criterion (see Table 3). These significant results were decomposed and three univariate analyses of variance (ANOVAs) for each dependent variable indicated that the main effects of both technical language violations and cultural cues were found for all three dependent variables. Statistics for these analyses can be found in Table 3. Furthermore, significant interactions were found for perceived conscientiousness and intelligence. In support of Hypotheses 1 and 2, providing information revealing an e-mail sender's non-native identity reduced the negative effects of technical language violations on a recipient's perceptions of the sender's conscientiousness (see Figure 1) and intelligence (see Figure 2). Hypothesis 3 was not supported.

Hypotheses 4-7 predicted there would be an interaction between cultural cues and etiquette deviations such that information indicating an e-mail sender's non-native identity would reduce the negative effects of etiquette deviations on a recipient's perceptions of the sender's agreeableness (Hypothesis 4), extraversion (Hypothesis 5), and cognitive trustworthiness (Hypothesis 6) and affective trustworthiness (Hypothesis 7). A 2 X 2 MANOVA and follow-up ANOVAS were conducted on 304 participants to test Hypotheses 4-7 (see Table 4). Both levels of the cultural cue independent variable (present and not present) were included along with two levels of the e-mail etiquette deviation independent variable (none, etiquette deviation). Dependent variables included perceptions of the agreeableness, extraversion, cognitive trustworthiness, and affective trustworthiness of the

e-mail sender. The Box-M test for the homogeneity of variance-covariance matrices across design cells was nonsignificant ($F(30, 244070.47) = 38.93$, $p = .15$). The proposed hypotheses were not supported as indicated by a nonsignificant interaction ($F(4, 297) = .16$, $p = .96$, $\eta^2 = .00$) between the presence of cultural cue and etiquette deviation on perceived agreeableness (Hypothesis 4), extraversion (Hypothesis 5), cognitive trustworthiness (Hypothesis 6), and affective trustworthiness (Hypothesis 7); however, as indicated in Table 4, there was a significant main effect of the presence of etiquette deviations on all four dependent variables.

Seven separate linear regression analyses were used to investigate the moderating influence of causal uncertainty proposed in Hypotheses 8-14. The first three regression analyses included the 149 participants who received the e-mail containing technical language violations (74 of whom were informed that the e-mail sender was from another culture) and tested the expectation that including cultural cues in an e-mail containing technical language errors would reduce the negative perceptions of those low in causal uncertainty more than it reduces the negative perceptions of those high in causal uncertainty. The predictor variables were the dummy-coded condition (cultural cue absent versus present), causal uncertainty, and an interaction term between the two variables. The criterion variables for the first three analyses were perceptions of the e-mail sender's conscientiousness (to test Hypothesis 8), intelligence (to test Hypothesis 9), and cognitive trustworthiness (to test Hypothesis 10). These hypotheses were not supported as indicated by a nonsignificant interaction term. Results from these analyses can be found in Table 5.

The second set of regression analyses included the 138 participants who received the

e-mail containing etiquette deviations (66 of whom were informed that the e-mail sender was from another culture). These analyses tested the expectation that including cultural cues with an e-mail containing etiquette deviations would reduce the negative perceptions of those low in causal uncertainty more than it reduces the negative perceptions of those high in causal uncertainty. The predictor variables were the dummy-coded condition (cultural cue absent versus present), causal uncertainty, and an interaction term between the two variables. The criterion variables for the four analyses included agreeableness (to test Hypothesis 11), extraversion (to test Hypothesis 12), cognitive trustworthiness (to test Hypothesis 14), and affective trustworthiness (to test Hypothesis 12). These hypotheses were not supported as indicated by a nonsignificant interaction term. Results from these analyses can be found in Table 6.

Discussion

Today's workplace is relying on cross-cultural collaboration more than ever before (Fujimoto, Bahfen, Fermelis, & Härtel, 2007). While there are a variety of options for cross-cultural communication (e.g., traveling, video conferencing, telephone, etc.), the benefits of e-mail (e.g., asynchronicity, convenience, low cost, etc.) suggest it will continue to be used for a long time to come; yet, there is a limited amount of research on cross-cultural CMC (Archee, 2003). This study examined how the fundamental attribution error can occur when using e-mail as a primary means of communication, and more specifically, how to potentially reduce the likelihood of the fundamental attribution error being made in cross-cultural CMC.

While some research has been conducted on attributions made during CMC (e.g., Cramton, 2001), this study was the first to examine attributions which are made during

cross-cultural e-mail communication with writing suffering from technical and etiquette errors. More specifically, it is the first study to investigate how the addition of contextual information (i.e., a cultural cue) can mitigate negative dispositional attributions which are made. This study found that e-mails with grammar and spelling errors influenced the perceptions an e-mail reader has about the sender. In particular, if there were grammar and spelling errors in an e-mail, an e-mail reader is likely to find the sender less intelligent, less conscientious, and less cognitively trustworthy than the sender of an e-mail without technical language violations. This suggests that the fundamental attribution error operates when people are confronted with poorly constructed e-mail messages. That is, technical language errors prompt negative perceptions about a communication partner's disposition. However, providing situational or contextual information in the form of cues indicating a communication partner is from a foreign country appear to reduce the tendency to attribute spelling and grammatical mistakes to an e-mail sender's disposition. This was indicated by results revealing that the negative effects of the mistakes in the email were reduced when people understood the e-mail was from an individual from a foreign culture. An examination of the means suggests this was largely due to the drop in perceived conscientiousness and intelligence that occurred in the technical error condition when cultural cues were absent.

Though technical language errors were forgivable when committee by foreign communication partners, etiquette violations were not similarly "excused." That is, different results were found for the perceptions formed about individuals who sent a short, terse e-mail (i.e., etiquette errors) than the results found in the technical language violations condition. There was a main effect such that etiquette errors negatively influenced an e-mail recipient's

perceptions of the e-mail sender's extraversion, agreeableness, and affective trustworthiness. The present study is the first to test and document this main effect. Surprisingly, this effect was not mitigated by providing the participant with information about the e-mail sender's cultural background. This raises questions about why participants excused technical errors but not cultural deviations committed by foreign communicators. While the reason for this phenomenon is beyond the scope of the current study, one could speculate that individuals have different expectations about the difficulty of learning the technical aspects of a language versus the difficulty of learning appropriate etiquette. It could also be that individuals are cognizant of how different technical aspects of various languages are, but do not know that there are differences in e-mail etiquette between cultures, so are unwilling to excuse deviations from norms.

Finally, findings revealed that a participant's level of causal uncertainty did not change the influence the presence of information regarding an e-mail sender's culture had on any of the outcome variables. This is in contrast with previous research (i.e., Edwards, 1998; Weary & Edwards, 1994) which suggested that people high on causal uncertainty would be less likely to take into account situational information when they were making attributions about others. While there may be other individual differences which influence the degree to which people take cultural cues into account, causal uncertainty does not appear to be a factor.

Limitations and Future Research

This study had several limitations of note. The sample was wholly composed of undergraduate students participating in the study to fulfill a course requirement. The degree

to which the results of this study generalize to other age groups or across cultures is unknown. Another limitation was the inability to ensure participants put effort into reading and thinking about the items in the study before they answered. To minimize this limitation, several nonparticipants were sampled to find an average time to read the content (without thinking about or responding to items) presented in the study, so those participants who did not thoughtfully respond to items could be identified.

Future research should examine the influence of contextual information in cross-cultural e-mail communication in an organizational setting to increase the external validity of the findings of this study. If future studies attempt to replicate this study in the workplace, three items on the Weary and Edward's (1994) Causal Uncertainty Scale will need to be adapted so they are applicable to non-student participants. Overall, although the current study suffers from certain limitations associated with laboratory research (in particular, external validity), it is an important first step in learning how to minimize problems that may occur with the use of a communication tool heavily relied upon by organizations.

One valuable finding was the negative effects of the presence of grammar and spelling errors in e-mails. Future research should identify groups, other than people using English as a second language, that might be at high risk for writing e-mails with a significant amount of grammar and spelling errors due to contextual constraints. For example, people with visual impairments often use adaptive technologies that allow them to dictate text into a computer. While many of these technologies are quite good, they are not errorless ("Speech Solutions," n.d.) and e-mails resulting from the use of these technologies may have spelling or word choice errors. Future research should test whether, similar to the results of the

present study, the provision of additional contextual information about a communication partner's disability reduces negative attributions stemming from these mistakes.

Future research should also test whether these findings extend to other types of lean CMC (e.g., chat, instant messaging, etc.). Research on these technologies could provide valuable information to organizations. For example, some companies use text-based CMC to provide help to customers, so customers may be forming some of their opinions of a company based on these text-based CMC media. Research should parse apart the phenomena operating within different types of text-based CMC. Findings from the current study may not apply to more synchronous forms of text-based CMC. For instance, the synchronous nature of chat may mean that people are more forgiving of spelling and grammar errors compared to more asynchronous communication media, which might produce an expectation that communication partners have ample time to invest in editing and choosing words. Future research should examine this possibility.

It was also determined that short, terse e-mails caused participants to perceive e-mail senders as less agreeable, less extraverted, less cognitively trustworthy, and less affectively trustworthy than others who send e-mail messages that are conversational in tone. Future research should identify ways to reduce these effects, so that inappropriate attributions made between people establishing new relationships are reduced in the workplace. For example, perhaps educating people, up front, about cultural differences in e-mail etiquette norms would prompt them to take cultural cues into account when forming attributions of e-mail senders. Additional research designed to test this possibility would be informative.

This study operationalized etiquette deviations as e-mails that were shorter and

relatively terse compared to the e-mail used as the control condition. However, there are other types of etiquette deviations which are possible. For example, a communication partner might choose words or figures of speech which are technically correct yet anti-normative in that they are inappropriately informal or overly friendly. There may also be etiquette norms that involve aspects of e-mail interactions beyond what is just contained in e-mails. For example, how long people take to reply to e-mails could be an important etiquette norm that could be violated. Future research should examine the effects of cultural cues on attributions stemming from other types of etiquette norm deviations which were not examined in this study. It would also be interesting to investigate whether an awareness of cross-cultural differences in the norm violated increases the influence of cultural cues.

There would be value in a longitudinal study evaluating how these relationships remain stable or fluctuate over time. The design of the current study only allows for the interpretation of the first impression participants formed after reading one e-mail; but, future research should examine if the negative attributions people form based on e-mail technical language violations and etiquette deviations remain stable over subsequent interactions with communication partners, if the negative attributions are exacerbated, or if they diminish.

Although causal uncertainty was not an individual difference that helped determine who would be most influenced by the addition of a cultural cues in an e-mail, future research should aim to identify other possible moderators of the effect of contextual information on attributions made during e-mail communication. When contextual information is operationalized as cultural cues, examining individual differences relating to the importance people place on their own culture (e.g., ethnocentrism) may provide valuable information

about these processes. Also, individuals from collectivist cultures tend to use situational explanations for behavior more than those from individualistic cultures (Krull, Loy, Lin, Wang, Chen, Zhao, 1999); therefore, individuals' levels of individualism and collectivism may influence how likely they are to make dispositional or situational attributions, and how they are affected by the provision of contextual information. By identifying those who are at risk for miscommunications, organizations can intervene in a timely and targeted fashion, perhaps through tailored training and education programs preparing employees for cross-cultural collaboration.

Practical Implications

On a practical note, the results of this study suggest the need to develop and evaluate programs which can help reduce the occurrence of inappropriate, negative dispositional attributions. Organizations rely more and more on e-mail messages, many of which only provide limited contextual information. Communication providing limited contextual information could potentially involve a variety of stakeholders (e.g., teammates, customers, etc.), and these stakeholders may be at risk for future communication problems stemming from attributions made during initial communications. By increasing our understanding of how the fundamental attribution error influences cross-cultural e-mail communication, this research, as well as future research, can inform the development of strategies for preventing miscommunications in the workplace. The development and testing of ways to reduce problems that can occur in the initial formation of relationships may lead to more productive and successful relationships within organizations.

This research has demonstrated that the information contained in an e-mail can

influence the first impression a person forms about an e-mail sender. A first step for organizations is to make people aware that they are susceptible to making inappropriate judgments about others when limited information is available. Organizations can use information from this study and future studies to assist employees that have to rely on e-mail communication for their initial contact with others—for example, by making them cognizant of what opinions they may tend to form based on a small amount of information and different ways to proactively prevent others from the same pitfalls. To this end, e-mail recipients may benefit from interventions that encourage them to actively seek information about an e-mail sender's context in an effort to increase the accuracy of attributions formed and prevent unnecessary conflict.

Within the workplace, e-mail senders can be reminded to take measures in order to help prevent others from misattributing errors to their own dispositions. Organizations may wish to coach employees to inform others about contextual constraints (e.g., language difficulties, disabilities, pressing timelines, etc.) that may not be apparent in e-mail communication. Conveying contextual information to an e-mail recipient may prevent the recipient from committing the fundamental attribution error, demonstrated by forming inappropriate, unjustified, negative perceptions about an e-mail sender.

This study has pinpointed the specific attributions that are formed on account of spelling/grammar errors and etiquette violations committed during initial e-mail communications. It also provides insights into a potential avenue to alleviate the negative effects identified, particularly when the correspondent is communicating in a non-native tongue. Overall, the findings imply that while filtering out visual and contextual information

signaling that a CMC partner is from a foreign culture could have some benefits (e.g., reduced discrimination), it may also have some drawbacks, as documented in this study. With today's pervasive reliance on e-mail, there is a need to better understand the nuances and hazards of this form of communication. By developing an awareness of the risks involved, organizations can proactively maximize the benefits while minimizing the shortcomings associated with CMC.

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Appendices

Appendix A

Background Scenarios

Background Scenario, No Information about the Sender's Culture

For the purpose of this study, imagine you are a mid-level employee working for a medium-sized organization. You have just been assigned to a new project and your supervisor has asked you to work on the project with a person you have never met, from a different division of the organization. Rather than meeting "face-to-face," you will be working with this person from a distance. At this point, you do not know anything about this individual except that they have worked for this company for 2 years.

Your supervisor recently informed you that work on the project needs to begin as soon as possible. Shortly thereafter, you receive an e-mail from the employee you'll be working with.

When you are ready, continue to the next web page where the first e-mail you receive from this employee will be available for you to read. Please note that we have omitted names appearing in the original e-mail and replaced them with brackets to protect the anonymity of all involved.

Background Scenario, Information about the Sender's Culture

For the purpose of this study, imagine you are a mid-level employee working for a medium-sized organization. You have just been assigned to a new project and your supervisor has asked you to work on the project with a person you have never met, from a different division of the organization. Rather than meeting "face-to-face," you will be working with this person from a distance. At this point, you do not know anything about this individual except that they are not from the United States, English is their second language, and they have worked for this company for 2 years. Your supervisor has informed you that work on the project needs to begin immediately.

Your supervisor recently informed you that work on the project needs to begin as soon as possible. Shortly thereafter, you receive an e-mail from the employee you'll be working with.

When you are ready, continue to the next web page where the first e-mail you receive from this employee will be available for you to read. Please note that we have omitted names appearing in the original e-mail and replaced them with brackets to protect the anonymity of all involved.

Appendix B

E-Mails for Language Deviation Conditions

1. *Control (no technical language errors; no etiquette deviations)*

Hi [*Name*],

I hope you are doing well. I send you my greetings from [*location*], where we are experiencing some unseasonably warm weather. This is a welcome change from last week's very cold temperatures!

I wanted to drop you a line to provide a little information about myself and touch base on a few other issues. As you probably know, I work in [*X*] Division and was recently assigned to the project we'll be working on together. My background experience is in electronics.

As we work together, we should create a plan for meeting to decide how we will conduct this project. In terms of your communication preferences, what's the best way to get in touch with you?

I also wanted to mention that my supervisor has asked me to send summary reports of our work to the corporate office on a regular basis. Just let me know how you would like these reports to be structured.

Thanks,
-[*Name of E-mail Sender*]

2. *Technical Language Errors*

Hi [*Name*],

I hope you are doing well. I send you my greeting from [*location*], where we are having some unseasonably warm weather, this is a welcome change from last week's very cold temperatures!

I wanting to drop you a line to provide a little information about myself and touch base on a few other issues. As you probably know, I work in [*X*] Division and was recently assigned to the project we'll be working on together. My back round experience is in electronics.

As we work together, we should create a plan for meeting to decide how we will conduct this project. In terms of you're communication preferences, what's the best way to get on touch with you?

I wanted to mention that my supervisor have asked me to send summary reports of our work to the corporate office on a regular bases. Just let me know how you would like these reports to be structured.

Thanks,
-[*Name of E-mail Sender*]

3. *Etiquette Deviation (short/nonconversational)*

[*Name*],

I work in [*X*] Division and was recently assigned to the project we will be working on together. My background experience is in electronics.

We should create a plan for meeting to decide how we will conduct this project. What is the best way to get in touch with you?

My supervisor has asked me to send summary reports of our work to the corporate office on a regular basis. Let me know how you would like these reports to be.

-[*Name of E-mail Sender*]

Appendix C

Items to Assess E-Mail Manipulations (Pilot)

Response Options:

1. Strongly Disagree
2. Disagree
3. Neither Agree nor Disagree
4. Agree
5. Strongly Agree

*(R) indicates item is reverse scored

Manipulation Check Items:

1. The e-mail was well-written for an e-mail written by someone who was introducing himself/herself for the first time.
2. There were spelling mistakes in the e-mail. (R)
3. There were grammar mistakes in the e-mail. (R)
4. The e-mail was not very friendly for an e-mail written by someone who was introducing himself/herself for the first time.
5. The e-mail used what I would consider typical e-mail etiquette for someone who was introducing himself/herself for the first time.
6. The tone of the e-mail was similar to the tone of e-mails I normally receive from people when they are introducing themselves for the first time.
7. The e-mail sender provided a lot of personal information about him/herself in this message.
8. The e-mail sender provided a lot of information about the project.

Appendix D

Demographic Items

Instructions: Please answer the following questions. Your responses will be kept in absolute confidence.

Demographic Items:

1. What is your gender? (Male, Female)
2. How old are you? (Open-ended)
3. What is your ethnicity? (African American, Asian American, Caucasian, Hispanic, Native American, Other)
4. What is your class standing (by credit hours)? (Freshman, Sophomore, Junior, Senior, Graduate, Other)
5. Were you born in the United States? (Yes, No)
   If no, what country were you born in? (Open-ended)
6. What is your first language? (English, Other-Specify)

Appendix E

Modified International Personality Item Pool (Goldberg, 1999)

Instructions: On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to indicate how accurately you think each statement describes the person who sent the e-mail you just read. That is, rate what you think the ***e-mail sender*** is probably like. Rate that person as you generally judge them immediately after reading the e-mail. Rate the e-mail sender in relation to other people you know. So you can describe the person in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully and select the appropriate response.

Response Options:

1. Very Inaccurate
2. Moderately Inaccurate
3. Neither Inaccurate nor Accurate
4. Moderately Accurate
5. Very Accurate

*(R) indicates item is reverse scored.

Extraversion Items:

The e-mail sender...

1. Feels comfortable around people.
2. Makes friends easily.
3. Is skilled in handling social situations.
4. Is the life of the party.
5. Knows how to captivate people.
6. Has little to say. (R)
7. Keeps in the background. (R)
8. Would describe his/her experiences as somewhat dull. (R)
9. Doesn’t like to draw attention to himself or herself. (R)
10. Doesn’t talk a lot. (R)

Agreeableness Items:

The e-mail sender...

1. Has a good word for everyone.
2. Believes that others have good intentions.
3. Respects others.
4. Accepts people as they are.
5. Makes people feel at ease.
6. Has a sharp tongue. (R)
7. Cuts others to pieces. (R)
8. He/she suspects hidden motives in others. (R)
9. Gets back at others. (R)
10. Insults people. (R)

Conscientiousness Items:

The e-mail sender...

1. Is always prepared.
2. Pays attention to details
3. Gets chores done right away.
4. Carries out his/her plans.
5. Makes plans and sticks to them.
6. Wastes time. (R)
7. Finds it difficult to get down to work. (R)
8. Does just enough work to get by. (R)
9. Doesn't see things through. (R)
10. Shirks his/her duties. (R)

Appendix F

Perceptions of Intelligence Scale

Instructions: Rate the following statements as well as you can based on the e-mail you read.

Response Options:

1. Strongly Disagree
2. Disagree
3. Neither Agree nor Disagree
4. Agree
5. Strongly Agree

*(R) indicates item is reverse scored.

Intelligence Items:

1. The word “intelligent” describes the e-mail sender.
2. The e-mail sender is smart.
3. The e-mail sender probably had high SAT scores.
4. The e-mail sender is probably a quick learner.
5. The e-mail sender probably had low grades in school. (R)

Appendix G

Interpersonal Trust Measure (McAllister, 1995)

Instructions: Rate the following statements as well as you can based on the e-mail you read.

Response Options:

1. Strongly Disagree
2. Disagree
3. Neither Agree nor Disagree
4. Agree
5. Strongly Agree

Cognition-Based Interpersonal Trust Items:

1. The e-mail sender approaches his/her job with professionalism.
2. The e-mail sender approaches his/her job with dedication.
3. Given the sender's e-mail, I see no reason to doubt his/her competence.
4. Given the sender's e-mail, I see no reason to doubt his/her and preparation for the job.
5. I could rely on the e-mail sender not to make my job more difficult by careless work.

Affective-Based Interpersonal Trust Items

1. If I shared my problems with this person, I think (s)he would respond constructively and caringly.
2. I could freely share my ideas, feelings, and hopes with this person.
3. I could freely talk to this individual and know that (s)he would want to listen.

Appendix H

Causal Uncertainty Scale (Weary & Edwards, 1994)

Instructions: Please use the rating scale below to describe how accurately each statement describes ***you***. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then select the appropriate response.

Response Options:

1. Strongly Disagree
2. Disagree
3. Neither Agree nor Disagree
4. Agree
5. Strongly Agree

Causal Uncertainty Scale Items:

1. I do not know what it takes to get along well with others.
2. When I receive good grades, I usually do not understand why I did so well.
3. I do not understand what causes most of the problems that I have with others.
4. When I see something good happen to others, I often do not know why it happened.
5. When I receive poor grades, I usually do not understand why I did so poorly.
6. When someone I know receives a poor grade, I often cannot determine if he or she could have done anything to prevent it.
7. I do not understand what causes most of the good things that happen to me.
8. When things go right, I generally do not know why.
9. When bad things happen, I generally do not know why.
10. When there is more than one possible reason for a person's action it is difficult to determine which one is the actual reason.
11. I often feel like I don't have enough information to come to a conclusion about why things happen to other people.
12. When I see something bad happen to others, I often do not know why it happened.
13. I often feel like I do not have enough information to come to a conclusion about why things happen to me.
14. When I think about why someone does something, there are usually so many possible reasons for it that I cannot determine which one was the cause.

Appendix I

Manipulation Checks

Instructions: Please use the rating scale below to describe how accurately each statement describes ***the e-mail you read***. Please read each statement carefully, and then select the appropriate response.

Response Options:

1. Strongly Disagree
2. Disagree
3. Neither Agree nor Disagree
4. Agree
5. Strongly Agree

*(R) indicates item is reverse scored

Manipulation Check Items:

1. The e-mail was well-written for someone who was introducing himself/herself for the first time. (Not used in analyses)
2. There were spelling mistakes in the e-mail. (R)
3. There were grammar mistakes in the e-mail. (R)
4. The e-mail was not very friendly for someone who was introducing himself/herself for the first time. (R)
5. The e-mail used what I would consider typical e-mail etiquette for someone who was introducing himself/herself for the first time.
6. The tone of the e-mail was similar to the tone of e-mails I normally receive from people who are introducing themselves for the first time.

Response Options:
1. True
2. False

Manipulation Check Items:
1. The e-mail sender was from the U.S.
2. The e-mail sender was a native English speaker.
3. The author of the e-mail I read was probably somewhat uncomfortable communicating in English.

Footnote

[1]One way of describing a person's identity is based on the context created by social interaction (Aronsson,1998). For certain social situations, based on who is interacting, people may be positioned as a "non-native speaker" or a "native speaker" (Park, 2007). In other words, a person's identity is partially based on who else is involved in an interaction (Park, 2007). This study uses the term "non-native identity" to provide a precise indication of an e-mail sender's national culture in relation to the cultural background of participants.

Table 1

Descriptive Statistics and Intercorrelations among Study Variables

Measured Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Perceived Conscientiousness	3.76	.61	(.87)						
2. Perceived Intelligence	3.40	.63	.53**	(.86)					
3. Perceived Cognitive Trust.	3.73	.71	.66**	.72**	(.85)				
4. Perceived Agreeableness	3.68	.55	.48**	.00**	.00**	(.83)			
5. Perceived Extraversion	3.23	.56	.35**	.23**	.29**	.51**	(.83)		
6. Perceived Affective Trust.	3.33	.73	.29**	.37**	.44**	.52**	.50**	(.76)	
7. Causal Uncertainty	2.38	.53	-.18**	-.11*	-.12*	-.13**	-.18**	-.10	(.85)

Notes. $N = 435$. Estimates of scale reliabilities are presented in parentheses on the diagonals.
*$p < .05$ (two-tailed); **$p < .01$ (two-tailed).

Table 2

Sample Sizes and Mean Scores Per Condition

	No Cultural Cues						Cultural Cues					
	No Errors / Deviations		Technical Errors		Etiquette Deviations		No Errors / Deviations		Technical Errors		Etiquette Deviations	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Perceived Technical Errors	3.31	.69	2.21	1.14	3.24	.66	3.50	.63	2.22	.97	3.35	.70
Perceived Etiquette Deviations	3.77	.74	3.39	.63	3.03	.91	3.89	.58	3.73	.64	3.11	.93
Perceptions of Sender's Non-	2.26	1.03	2.12	1.10	2.29	1.14	1.29	.98	.61	.93	1.18	1.07
Perceived Conscientiousness	3.86	.57	3.54	.60	3.73	.61	3.87	.67	3.83	.56	3.74	.59
Perceived Intelligence	3.49	.49	3.06	.83	3.39	.58	3.52	.49	3.49	.66	3.45	.52
Perceived Agreeableness	3.80	.59	3.69	.52	3.53	.41	3.74	.55	3.86	.50	3.45	.62
Perceived Extraversion	3.46	.50	3.31	.46	3.02	.55	3.38	.53	3.35	.47	3.84	.57
Perceived Cognitive Trust.	3.85	.66	3.36	.83	3.70	.66	3.94	.64	3.72	.73	3.81	.58
Perceived Affective Trust.	3.46	.71	3.45	.72	3.10	.74	3.51	.64	3.36	.69	3.06	.77

Note. For Perceived Technical Errors and Perceived Etiquette Deviations, lower values correspond to heightened perceptions of technical errors and etiquette deviations.

Table 3

MANOVA Examining the Interaction of Technical Language Violations and the Presence of Cultural Cues on Perceptions of an E-Mail Sender

Multivariate Results						Univariate Results			
Independent Variables	*F*	*df (b/w, w/in)*	*p*	η^2	Dependent Variables	*F*	*df (b/w, w/in)*	*p*	η^2
Technical Language Violations	6.14	3, 291	<.001	.06					
					Perceptions of Conscientiousness	6.40	1, 293	.01	.02
					Perceptions of Intelligence	10.00	1, 293	<.001	.03
					Perceptions of Cognitive Trustworthiness	18.41	1,293	<.001	.06
Presence of Cultural Cues	3.36	3, 291	.02	.03					
					Perceptions of Conscientiousness	4.83	1, 193	.03	.02

Table 3 (continued)

					Perceptions of Intelligence	9.55	1, 293	<.001	.03
					Perceptions of Cognitive Trustworthiness	7.13	1, 293	.01	.02
Technical Language Violations X Presence of Cultural Cues	2.99	3, 291	.03	.03					
					Perceptions of Conscientiousness	3.96	1, 293	.05	.01
					Perceptions of Intelligence	7.62	1, 293	.01	.03
					Perceptions of Cognitive Trustworthiness	2.56	1, 293	.11	.01

Notes. $n = 297$.

Table 4

MANOVA Examining the Interaction of Etiquette Deviations and the Presence of Cultural Cues on Perceptions of an E-Mail Sender

	Multivariate Results					Univariate Results			
Independent Variables	*F*	*df (b/w, w/in)*	*p*	η^2	Dependent Variables	*F*	*df (b/w, w/in)*	*p*	η^2
Etiquette Deviations	16.47	4, 297	<.001	.18					
					Perceptions of Agreeableness	29.08	1, 300	<.001	.09
					Perceptions of Extraversion	61.02	1, 300	<.001	.17
					Perceptions of Cognitive Trustworthiness	5.76	1, 300	.02	.02
					Perceptions of Affective Trustworthiness	20.77	1, 300	<.001	.07
Presence of Cultural Cues	1.44	4, 297	.22	.02					
					Perceptions of Agreeableness	.88	1, 300	.35	<.001
					Perceptions of Extraversion	2.74	1, 300	.10	.01
					Perceptions of Cognitive Trustworthiness	1.03	1, 300	.31	<.001

Table 4 (Continued)

					Perceptions of Affective Trustworthiness	.00	1, 300	.99	<.001
Etiquette Deviations X Presence of Cultural Cues	.16	4, 297	.96	<.001					
					Perceptions of Agreeableness	.02	1, 300	.90	<.001
					Perceptions of Extraversion	.21	1, 300	.65	<.001
					Perceptions of Cognitive Trustworthiness	.04	1, 300	.85	<.001
					Perceptions of Affective Trustworthiness	.35	1, 300	.56	<.001

Notes. $n = 304$.

Table 5

Test of Causal Uncertainty Moderating the Influence of Cultural Cues on Perceptions of E-Mail Senders Committing Technical Language Errors

	R^2	*B*	*β*	*t*	*p*
Perceived Conscientiousness	.10				<.001
Presence of Cultural Cue		.63	.53	1.39	.17
Causal Uncertainty		-.14	.12	-1.14	.26
Presence of Cultural Cue X Causal Uncertainty		-.14	.18	-.74	.46
Perceived Intelligence	.11				<.001
Presence of Cultural Cue		.22	.14	.39	.70
Causal Uncertainty		-.30	-.20	-1.90	.06
Presence of Cultural Cue X Causal uncertainty		.09	.15	.38	.70
Perceived Cognitive Trustworthiness	.09				<.001
Presence of Cultural Cue		.89	.56	1.47	.14
Causal Uncertainty		-.18	-.12	1.97	.29
Presence of Cultural Cue X Causal Uncertainty		-.22	-.34	-.89	.38

Notes. These analyses included the 149 participants who received the e-mail containing technical language violations.

Table 6

Test of Causal Uncertainty Moderating the Influence Cultural Cues on Perceptions of E-Mail Senders Committing Etiquette Deviations

	R^2	*B*	β	*t*	*p*
Perceived Agreeableness	.01				.83
Presence of Cultural Cue		-.12	-.11	-.25	.80
Causal Uncertainty		.01	.01	.05	.96
Presence of Cultural Cue X Causal Uncertainty		.01	.03	.07	.94
Perceived Extraversion	.06				.03
Presence of Cultural Cue		-.07	-.07	-.15	.88
Causal Uncertainty		-.22	-.19	-1.61	.11
Presence of Cultural Cue X Causal Uncertainty		-.04	-.08	0.18	.85
Perceived Cognitive Trustworthiness	.02				.43
Presence of Cultural Cue		.72	.58	1.33	.18
Causal Uncertainty		.05	.04	.32	.75
Presence of Cultural Cue X Causal Uncertainty		-.26	-.52	-1.15	.25
Perceived Affective Trustworthiness	.02				.48
Presence of Cultural Cue		.95	.63	1.45	.15
Causal Uncertainty		.18	.12	.97	.34
Presence of Cultural Cue X Causal Uncertainty		-.42	-.69	-1.54	.13

Notes. These analyses included the 138 participants who received the e-mail containing etiquette deviations.

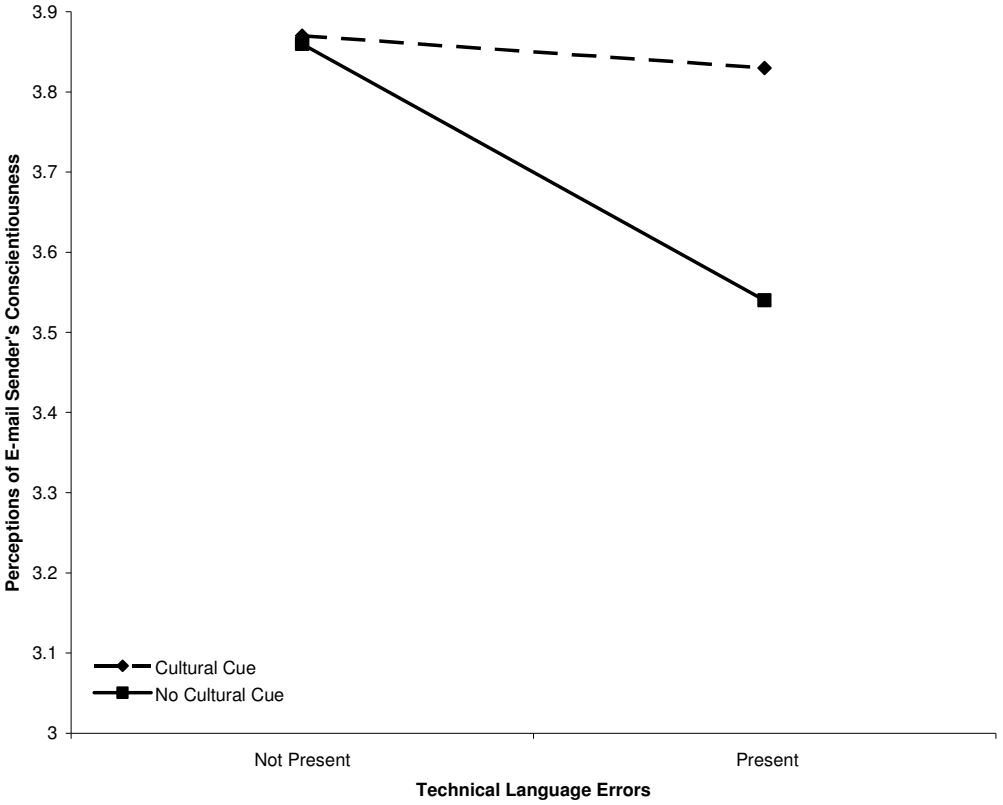

Figure 1: *Interaction of Technical Language Errors and Cultural Cues on Perceptions of the E-Mail Sender's Conscientiousness*

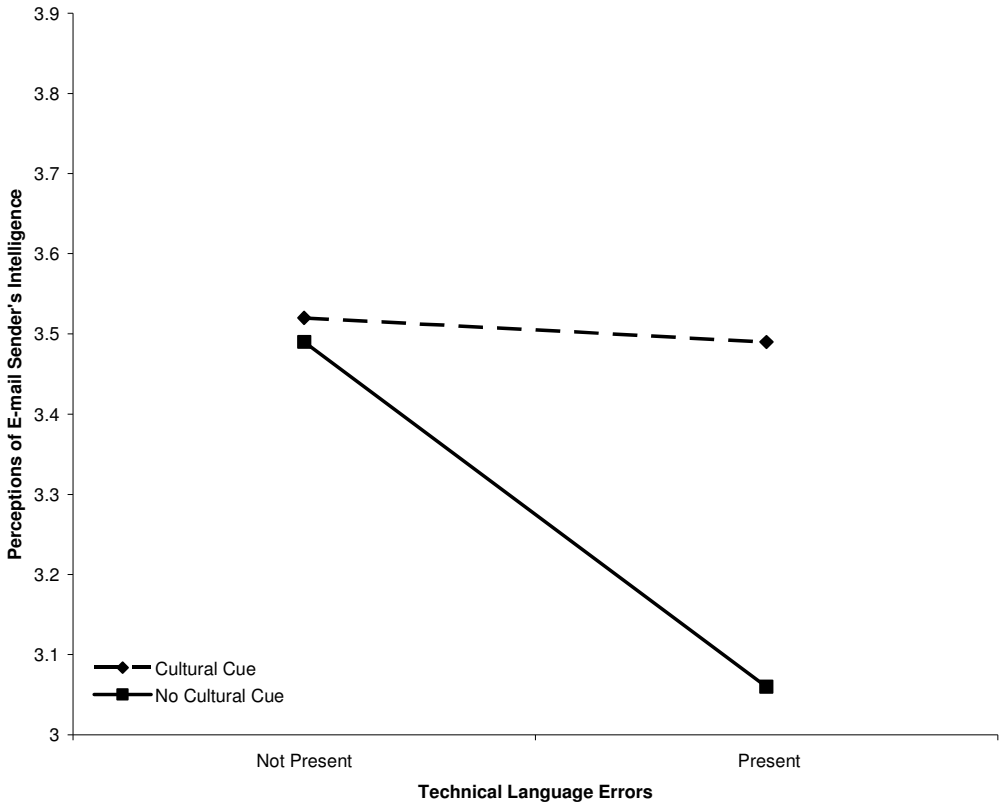

Figure 2: *Interaction of Technical Language Errors and Cultural Cues on Perceptions of the E-Mail Sender's Intelligence*