Equivocality and Uncertainty Reduction through E-mail Communication: An Inquiry into the Media Richness Theory

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ABSTRACT

EQUIVOCALITY AND UNCERTAINTY REDUCTION THROUGH E-MAIL COMMUNICATION: AN INQUIRY INTO THE MEDIA RICHNESS THEORY

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The increased use of computer-mediated communication (CMC) has sparked an interest in scholars within the field of communication. It has become apparent that with the increased use of CMC, come compelling questions and concerns regarding mediated interactions between communicators. This investigation examined the effects of prior interactions, such as face-to-face, telephone, e-mail, memo, or no contact at all, on later e-mail communication. In particular, this study focused on participants’ perceptions of equivocality within e-mail messages. Participant survey data were collected, and a series of oneway analysis of variance (ANOVA) were conducted. These analyses looked for differences amongst the experimental groups on the dependent variable of equivocality. The data show significance in prior face-to-face, telephone, and e-mail communication on later e-mail interaction, in which perceptions of equivocality were viewed differently than in instances of only prior memo contact, or no contact at all. Mean scores of participants who had imagined prior face-to-face, telephone, or e-mail communication were significantly higher in being able to distinguish relational themes within the context of the message, and they were overall significantly higher in knowing how to respond to the message, what to conclude from the message, whether or not they had enough information to fully understand the message, and if they liked the sender of the message or not. Implications for computer-mediated communication and future research are discussed.
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KEY WORDS AND DEFINITIONS

**Uncertainty**: The absence of information (Daft, Lengel & Trevino, 1987).

**Uncertainty reduction**: Using additional information to seek answers to questions (Daft et al., 1987).

**Equivocality**: Multiple and conflicting interpretations about a situation. Often manifests as disagreement and confusion (Weick, 1979).

**Equivocality reduction**: Clarifications, decisions, reached agreement (Daft et al., 1987).

**Information Richness**: The ability of information to change understanding within a time interval (Daft & Lengel, 1986).

**Low/lean information richness**: The inability of information to change understanding within a time interval (Daft & Lengel, 1986).

**Media Richness Theory**: A theory designed by Richard Daft and Robert Lengel which attempts to explain the transfer of information through the use of various mediums (Daft & Lengel, 1986).

**Technology**: Knowledge, tools and techniques, which transform inputs into outputs.

**Feedback**: Allows questions to be asked and corrections to be made (Daft et al., 1987).

**Multiple cues**: Cues that are part of a message. Can include voice inflection, nonverbal communication, physical presence, and symbols (Daft et al., 1987).

**Language variety**: Range of meaning that can be conveyed with the use of language symbols (Daft et al., 1987).

**Personal focus**: The use of feelings and emotions in communication, in which messages can be tailored to the needs, mind-set and present situation of the receiver (Daft et al., 1987).

**Symbol creation**: The process that groups go through to negotiate and shape their reality within an organization. Usually occurs when equivocality is high, and organizational members have not yet established a shared meaning of an event. (Trevino, Lengel & Daft, 1987).

**Symbol communication**: Symbols which are able to transmit messages; shared meanings of the symbols have been established within a group (Trevino et al., 1987).
Effective communication relies on the selection of media in order to engage both sender and receiver in shared understanding of the message (Lengel & Daft, 1988). When a message is equivocal, having two or more possible interpretations, "rich" media is needed in order to reduce the level of misunderstanding between communicators (Lengel & Daft, 1988, p. 225). Routine, objective situations require the use of a leaner media due to the low levels of equivocality within the message.

Media richness theory was formulated by Richard L. Daft and Robert H. Lengel, (1986), and is based on Weick's (1979) idea of uncertainty and equivocality. Daft & Weick (1984) agree that in order for an organization to become effective in what they do, equivocality must be reduced. They define equivocality as, "the extent to which data are unclear and suggest multiple interpretations about the environment, such that equivocality is reduced through shared observation and discussion until a common grammar and course of action can be agreed on" (p. 291). Daft & Lengel (1986) state that "equivocality means ambiguity, the existence of multiple interpretations about an organizational situation. Participants are not certain about what questions to ask, and if questions are posed, the situation is ill-defined to the point where a clear answer will not be forthcoming. Whereas uncertainty is a measure of the organization's ignorance of a value for a variable, equivocality is a measure of the organization's ignorance of whether a
variable exists” (pp. 556-557). Schumacher (1977) asserts that equivocality is a divergent problem, in that equivocal situations are not easily quantifiable or substantiated, as they do not seem to have a single explanation or answer. Further, the more equivocal situations are examined, the more their interpreted meanings tend to diverge, and become disputed between communicators (Schumacher, 1977). Unless equivocality is managed, interpretations of the meanings of events will diverge further across time.

Organizational members will both collectively and individually attempt to reduce, or remove, equivocality (Weick, 1979). Members negotiate meanings for the situations in which they are presented. Negotiation oftentimes takes place within interlocked behavior cycles, in which at least two people discuss the event at hand (Weick, 1979). Though it frequently appears that equivocality reduction is primarily a shared activity, it is also thought to be an individual process in which people strive for “private, singular and solitary activity” in making sense of a phenomenon (Weick, 1979, p. 142). Making sense of an equivocal situation is a solitary act, in that people each have unique experiences through which they construct limitless reasons for why things are the way that they are; oftentimes this is done in one’s own mind, before being shared in social encounters (Weick, 1979). Though the individual may disclose his or her thoughts regarding an equivocal situation in a social forum, the process begins as an individual act. The main point here is that equivocality reduction is both an individual and a social phenomenon.

Weick (1995) asserts that equivocal situations lead people to feel confused. To alleviate confusion, people need established values, priorities, and a sense of clarity about what matters most within the organization (Weick, 1995). The “sensemaker”, one who attempts to make meaning from an equivocal situation, has seven characteristics which
serve as guides in equivocality reduction (Weick, 1995, p. 16). These properties can be regarded as having both individual and social qualities. The seven properties are: identity construction, retrospective sensemaking, enactments of sensible environments, the social force of equivocality reduction, the nature of equivocality as ongoing, extracting cues from the environment, and plausibility versus accuracy (Weick, 1995). Identity construction discusses the ongoing needs of individuals to make sense of their environment, while simultaneously presenting themselves in such a way as to preserve their image in interactions with others (Weick, 1995). People reveal their identity by discovering how and what they think about a phenomenon. Sensemaking processes come from the need of individuals to have a sense of identity, which impacts interactions with all others with whom they come in contact (Weick, 1995). In other words, sensemaking begins as an individual act, and once it evolves to a social process, people will tend to protect their identity so as to maintain their image around others. Retrospective sensemaking is reflecting about an event after meaning has been attributed to the equivocal situation (Weick, 1995). People tend to make sense of equivocal situations only after meaning has been assigned. Since this is mainly a social event within the organizational structure, retrospective sensemaking can be viewed as an activity in which several possible meanings might need to be blended (Boland, 1984). Enactment of sensible environments focuses upon the notion that people help to create their own environments, constructing their reality through everyday acts in which they engage (Weick, 1995). Sensemakers engage in creating and reducing equivocality together within the organizational environment; this notion again illustrates that equivocality reduction eventually becomes a social process. The social aspect of equivocality
reduction emphasizes the idea that social functioning is a necessary part of equivocality reduction and organizational survival (Weick, 1995). As Weick (1995) explains, the organization is comprised of a number of varying interpretations about equivocal situations, in which members attempt to create shared meanings of such events. He states, “sensemaking is never solitary because what a person does internally is contingent on others” (Weick, 1995, p. 40). Sensemaking is ongoing within the organizational structure, because equivocal situations constantly present themselves, and people attend to them. Extracting cues from the environment is another characteristic of sensemakers (Weick, 1995). To reduce equivocality, people tend to look for cues that will aid in creating greater understanding of a phenomenon. Sensemakers do not merely notice cues within the environment, but seek to interpret the cues in order to determine what the cues actually mean (Weick, 1995). Finally, equivocality reduction is driven by plausibility rather than accuracy (Weick, 1995). Weick (1995) argues that accuracy is not as tangible as is developing plausible explanations for what things mean. Because equivocality is interpreted in different ways by different sensemakers, the act of reducing equivocality is not so much concerned with making accurate accounts of the situation, as much as it is dependent on the plausible interpretations of sensemakers (Weick, 1995).

Because equivocality reduction is a function of both individual and social processes, and technology-based communication is widespread within organizations, it becomes important for organizational members to discover the role computer-mediated-communication plays in reducing equivocality within the organization. The media richness model attempts to explain how media selection aids in reducing equivocality, or
maintains or increases the level of equivocality when a less appropriate choice of media is used to communicate a message (Russ, Daft & Lengel, 1990).

The purpose of this inquiry is to examine the richness of electronic mail compared to how it has previously been described in the media richness literature. This research will investigate the effects of prior contact, i.e., face-to-face, telephone, e-mail, and memo contact, on later e-mail interaction between communicators. This study expands beyond the previous media richness literature, in which e-mail has been determined to be a relatively lean medium, without the possibility of evolving into a richer medium (Daft & Lengel, 1986: Lengel & Daft, 1988; Russ et al., 1990). A recapitulation of the media richness theory will be offered, followed by a discussion of research which focuses on and helps to expand our understanding of e-mail as a richer medium than traditionally classified.

Media richness theory has not taken into consideration many of the information processing abilities of e-mail communication, nor has it accounted for many compelling social factors associated with e-mail use. The focus of the study proposed herein will be to examine the effects of previous face-to-face, telephone, e-mail, and memo communication on the perception of e-mail interaction between communicators. This examination includes a list of key words and their definitions, and a literature review of the media richness theory.

Media richness theory is based on a medium’s ability to convey information and create a shared meaning of a message within a time interval. Media differ in their ability to transmit information cues (Daft et al., 1987). The more learning that can be transmitted through a medium within a time interval, the richer the medium (Lengel & Daft, 1988).
Face-to-face is the richest medium because of its ability to provide rapid feedback, and it enables the “assimilation of broad cues and deep, emotional understanding” of the subject matter at hand (Lengel & Daft, 1988, p. 226). Telephone communication is considered moderately rich, because though it provides quick feedback to aid in creating shared understanding, it lacks the element of “being there” (Lengel & Daft, 1988, p. 226) Body language, head nods, direction of gaze, blush, eye contact, and other nonverbal behaviors are eliminated, therefore reducing the medium’s ability to convey multiple cues (Lengel & Daft, 1988). Electronic mail (e-mail), letters, and personalized notes are leaner forms of media because they are limited in transmitting multiple cues and are slow to produce feedback (Lengel & Daft, 1988). The leanest form of media is “impersonal static media,” such as fliers and bulletins because they do not provide personal cues and the lag time response is significantly slower compared to other media (Lengel & Daft, 1988, p. 226).

Organizational members often find themselves in situations which make it necessary to manage equivocality. The struggle for many seems to be in knowing precisely how to reduce uncertainty and especially lessen the equivocality within interactions. The use of media can aid people in their quest to manage levels of equivocality within the organization.

Managing Equivocality through Media

Much research has been generated in the area of equivocality and its relationship to information processing. Kreps (1980 cited in Daft et al., 1987) discovered that equivocal situations encouraged frequent cycles of feedback in communication during university governance meetings. Lengel & Daft (1988) found that face-to-face media
were chosen when messages contained equivocality, and written messages were used when unequivocal information needed to be processed. This research suggests that, when equivocality is high, organizations desire quick communication cycles between managers, and this usually presents itself in the form of face-to-face meetings (Weick, 1979; Daft & Lengel, 1986).

The capacity to convey information cues varies amongst the different forms of media (Daft et al., 1987), and media vary in their ability to convey verbal and nonverbal cues in the message. If there is a need to convey equivocal information, a richer medium is necessary (Russ et al., 1990). Rich media are perceived as personal and involve face-to-face contact between people, and media with leaner richness are oftentimes viewed as impersonal, relying on rules, procedures and forms (Daft & Lengel, 1986). The more equivocal the information, the more rich media are needed. The less equivocal the information to be processed, the leaner in richness the media need to be.

There are four classifications of media within the media richness theory. Inherent in each are characteristics which set it apart from other types of media. The following is a list of the different media, listed from richest to leanest:

**Media Classifications**

A) Face-to-face

B) Telephone

C) Addressed documents (e-mail, letters, notes)

D) Unaddressed documents (written memos, fliers, bulletins)
Characteristics of each Channel

Face-to-face communication has the ability to offer direct contact, multiple information cues, rapid feedback and personal focus. Broad cues are available, emotional understanding can be checked and misinterpretations more easily corrected. The spoken message is conveyed simultaneously with cues like body language and tone of voice (Russ et al., 1990). Nonverbal behaviors can regulate, alter and manage the communication exchange between people (Daft et al., 1987). Messages can be explained and adjusted immediately, such that misinterpretations are cleared up quickly, therefore reducing the level of equivocality within the message (Daft et al., 1987).

Telephone communication provides quick feedback but lacks the component of “being there” (Russ et al., 1990, p. 155). Though vocal features such as quality of voice, pitch, rate and tone are present, other nonverbal behaviors are eliminated, therefore misinterpretations are not likely to be resolved as quickly as in face-to-face communication (Russ et al., 1990). Communicators rely heavily on “language content and audio cues” to transmit messages (Daft et al., 1987, p. 359). Because the telephone allows for personal contact through verbal language, it is considered to be a moderately rich form of media (Daft et al., 1987).

Addressed documents are effective because e-mail messages, letters and notes can be designed to fit the individual receiver of the message. However, they convey limited cues and are slower to give feedback (Russ et al., 1990). Voice and visual cues are limited within the written word, although the use of stationary and language variety can aid in the understanding of a sender’s message (Daft et al., 1987). Researchers have, however, studied the use of emoticons to transmit emotions and feelings via electronic
mail (Thompson & Foulger, 1996). E-mail interactants may search for ways to communicate sadness, happiness, frustration and a variety of other emotions by discovering ways to illustrate when they pause, use gestures, or emphasize a main point (Davis, 1998). Another way in which communicators attempt to compensate for the weaknesses of e-mail is through the use of shouting, in which all caps are used to alert the receiver of the message that the message is important, and many times is used to signal frustration toward the receiver (Davis, 1998). E-mail communication is thought to be richer than standard, unaddressed documents, however, is considered less rich than face-to-face and telephone communication in the media richness literature (Daft et al., 1987).

Unaddressed documents such as memos, fliers and bulletins do not provide for nonverbal cues, response time is slow and there is a lack of personalization within the message. Oftentimes bulletins use numbers to communicate quantitative incidents, so there is a lack of natural language within the message (Daft et al., 1987). Unaddressed documents are the leanest form of media, although they can transmit standard, unequivocal messages to larger audiences (Russ et al., 1990).

As each media has unique characteristics and abilities, each also has a particular capacity to provide richness within an interaction. The level of richness that each media contains is able to be determined by an established set of criteria.

Criteria to Determine Richness

There are four criteria needed to establish richness in a message: 1) Feedback used to correct misinterpretations and misunderstandings, 2) fitting the message to personal circumstance, 3) the capability to convey multiple cues concurrently, and
4) language variety including nonverbal and verbal communication as opposed to the use of numbers (Russ et al., 1990). A blend of the four criteria is looked for, so that a medium higher in richness will include all four characteristics (Russ et al., 1990). A medium’s capabilities to offer rapid feedback, aid in reducing misinterpretations, tailor the message to the individual’s present circumstance, and convey several cues simultaneously through the use of verbal and nonverbal communication make it a rich form of media (Daft et al., 1987).

A blend of the four characteristics is not present in media with lower levels of richness. A memo can not offer the opportunity for prompt feedback as in face-to-face communication. Memos, fliers, and bulletins are not equipped to fit the message to an individual’s present circumstance, nor are they able to convey multiple cues concurrently as in face-to-face communication (Daft et al., 1987).

It is important to note that utilizing a leaner media is more efficient than choosing a richer media if the message is unequivocal (Daft & Macintosh, 1981). Otherwise, there is the possibility of making the unequivocal information equivocal by mixing in multiple cues (Russ et al., 1990). If an unaddressed document can reach several people and convey a message without equivocality, there is no need to use face-to-face communication. “A mismatch may explain failures to achieve mutual understanding,” either when the message requires a richer level of media and a lean medium is selected, or when the communication situation requires a leaner form of media and a richer level is chosen (Russ et al., 1990, p. 156). The main point is that media choice should depend on the level of equivocality in the message.
The use of technology, such as e-mail communication, to manage equivocality oftentimes depends on what the person hopes to accomplish in a situation, and their opinions toward the technology (Fang, 1998). Additionally, Dennis & Valacich (1999) assert that media with a “rehearsability function” may aid in creating perceptions of the medium (p. 2). They define rehearsability as “the extent to which the media (sic) enables the sender to rehearse or fine tune the message before sending” (Dennis & Valacich, 1999, p. 2). E-mail enables the sender of a message to cautiously edit the message so that he or she can be sure that the intended meaning is not filled with extraneous information that may confuse the receiver (Dennis & Valacich, 1999). Though media richness theory asserts that face-to-face communication is the best method for handling highly equivocal information, it seems that such interaction could also increase levels of equivocality by adding extraneous information which may confuse interactants in some cases. The rehearsability function of e-mail communication may aid in reducing the equivocality within a message (Dennis & Valacich, 1999).

Media with a “reprocessability function” may aid in one’s ability to review the message to gain further understanding of it’s intended meaning (Dennis & Valacich, 1999, p. 2). The reprocessability function is defined as “the extent to which a message can be reexamined or processed again within the context of the communication event” (Dennis & Valacich, 1999, p. 2). It is thought that e-mail has high reprocessability functionality due to its ability to record and store interactions in memory. If an e-mail message is incomprehensible the first time, perhaps a second, or third reading of it will enable the receiver to gain further understanding of it. This contrasts with face-to-face interaction, in that it is much more difficult to recreate an encounter in face-to-face
communication. And unless the sender or receiver of a message seeks to clarify any equivocality within the message, face-to-face interaction does very little to aid in increasing understanding between interactants. Because of e-mail’s reprocessability function, records of communicative acts are able to be stored for later analysis and diagnosis (Dennis & Valacich, 1999).

The following discussion points to varying perspectives which help to explain why some people prefer technological communication in interactions with others.

**Technology as Choice in Communication**

There are three perspectives which offer varying reasons as to why a computer-mediated technology may or may not be chosen and utilized by organizational members. The self-efficacy, technological characteristics, and social influence perspectives are plausible determinants of computer-mediated use in organizations (Posner, Danielson & Schmidt-Posner, 1992). The concept of self-efficacy looks at an individual’s acceptance or reluctance to use technology based on the ease-of-use and perceived utility of the task at hand (Bandura, 1982). These two determinants are related to an individual’s intention and attitude toward the technology (Fang, 1998). Davis (1989) suggests that an individual’s performance is based on behaviors which rely on one’s intention with regards to a given task. Behavior intention is directly linked to the individual’s attitude toward the task, as organizational members will behave favorably toward tasks in which they feel confident, and unfavorably to tasks they do not (Davis, 1989).

The technological characteristics perspective focuses on organizational members’ interpretations of the characteristics of a medium and the communication possibilities of
the media to determine the appropriateness of its use (Fang, 1998). The medium should not provide any more or any less communication than is required by the communication situation (El-Shinnaway, 1993). For instance, research suggests that groups prefer e-mail communication over voice mail (El-Shinnaway & Markus, 1997). El-Shinnaway & Markus (1997) report participants choose e-mail over voice mail because of “e-mail’s ability to handle ongoing and prolonged communication as opposed to one-way drops of information, its absence of verbal cues and its documentation and multiple addressability functionality” (p. 457). In their study, participants perceived verbal cues as presenting levels of distortion in the communication situation, and opted for the technological characteristics of e-mail over voice mail qualities (El-Shinnaway & Markus, 1997).

The social influence perspective explains that an individual’s media choice depends on their supervisor’s or co-worker’s previous choices (Fang, 1998). Pressure to socialize exists when supervisors make influential comments regarding an organizational member’s choice and usage of certain media to complete a task (Salancik & Pfeffer, 1978). Vicarious learning of technology is made possible by observing more experienced members’ usage of technology, and if positive experiences with a medium are observed (Bandura, 1979).

Members of modern organizations use face-to-face, telephone, e-mail and unaddressed documents such as flyers, bulletins and memos to communicate messages to one another (Lengel & Daft, 1988). Furthermore, the proposed study will focus on communication within an organization, so it is important to understand basic assumptions about organizations.
Assumptions About Organizations

A basic assumption about organizations is that they process information to reduce uncertainty about situations and topics of discussion (Daft & Lengel, 1986). Uncertainty is “the difference between the amount of information required to perform the task and the amount of information already possessed by the organization” (Daft et al., 1987, p. 357). Numerous studies show a relationship between information processing and task uncertainty (Bavelas, 1950; Becker & Nicholas, 1969 cited in Daft & Lengel, 1986; Gaston, 1972; Leavitt, 1951; Meissner, 1969; ). When tasks are high in uncertainty, organizational members rely on asking many questions to acquire the necessary information in order to obtain the data needed to complete the job (Daft & Lengel, 1986). Also, organizational members are looked upon to define questions and seek answers, as well as discover objective data and share opinions of the communication situation (Daft & Lengel, 1986). It appears that as people increase their understanding of a task, the uncertainty they feel about the task decreases.

Another assumption is that organizations process information to reduce equivocality. Weick (1979) suggests that the reduction of equivocality is the main reason for organizing. Equivocality is different than uncertainty, in that it presents a distorted and disorderly arena. Several interpretations are likely when an equivocal situation arises, and new information may only complicate matters (Daft & Lengel, 1986). When situations are highly equivocal, there is a need for managers to define the questions to be asked, develop a universal meaning and language regarding the situation, and gather the opinions of others to determine the next step (Daft & Lengel, 1986). Uncertainty is mirrored in the absence of answers to ambiguous questions, whereas equivocality
originates from confusion, and manifests in conflicting interpretations of the situation. The possibility of a yes-no question resolving the misunderstandings of an equivocal situation is not possible (Daft & Lengel, 1986). The main difference between uncertainty and equivocality is in the manner in which the information is processed (Daft et al., 1987). Uncertainty leads to the gathering of data, and equivocality leads to the transfer of subjective viewpoints among communicators to discover the problem and resolve misinterpretations and misunderstandings (Daft et al., 1987).

The way in which an organization functions is another point to consider when deciding how to reduce levels of uncertainty and equivocality. At the organizational level, longer tenure with the company allows people to learn the system of meanings exclusive to their organization, so that there is greater capacity to choose communication media to match message equivocality (Russ et al., 1990). It may be that more experienced organizational members will have an easier time deciding what media to choose in their particular organization.

**Media Selection in the Organization**

Becoming educated as to how a particular organizational system operates gives an individual greater learning experiences and skills to choose the most appropriate medium for the situation. “Newer employees may not understand the significance of a seemingly casual social invitation issued face-to-face by a supervisor, whereas methods of delivery may have specific implications clearly discernible to long-term employees” (Russ et al., 1990, p. 157). Longer membership within the organization means increased understanding of shared expectations in regard to media selection, and there is an agreed
upon expectation regarding how to manage simple and complex communication incidents (Russ et al., 1990).

Research also suggests that higher-level managers will have a greater understanding as to the type of media to choose in a particular situation (Trevino et al., 1987). Though higher-level managers typically experience prolonged exposure to the way in which their organization operates, and are then accustomed to following standard operating procedures, they must also make decisions based on matching the media with the message in order to eliminate levels of equivocality (Trevino et al., 1987).

**Managing within the Organizational Structure**

"Richness imperatives" are the determining forces in media selection, and demand that the richness of a medium be matched to the level of equivocality within a message (Trevino et al., 1990, p. 181). In less equivocal situations, managers are better able to choose media to fit their personal preference and personality style (Trevino et al., 1987). Individual differences may appear more here than in the situation which calls for a richer medium to be used. However, in situations which call for rich media in order to reduce equivocality, it is crucial that managers choose the richer media, regardless of their personal preferences (Trevino et al., 1987).

Managers use media to interpret work situations and negotiate with, influence or give directives to subordinates (Lengel & Daft, 1988). Research has indicated that higher-performing managers tend to be more "media sensitive" than lower-performing managers (Lengel & Daft, 1988, p. 229). Because media choice can enhance or distort a message, managers need to be aware that selecting the most appropriate medium for a situation is
crucial to communicating effectively. Situations should take precedence over personal communication preference because the situation dictates the appropriateness of the media to be selected (Trevino et al., 1987).

According to Lengel & Daft (1988), it can be assumed that high-performing executives prefer face-to-face communication in most situations. However, research provides evidence that high-performing managers use lean media when the topic is routine and easily understood (Lengel & Daft, 1988). Sixty-eight per cent will use written, 30% will use phone and/or face-to-face when the topic is less equivocal, and when the message is nonroutine, 88% of managers will choose face-to-face interaction (Lengel & Daft, 1988).

Another assumption is that managers who are effective communicators can use any form of media to get their point across (Lengel & Daft, 1988). Research indicates that higher performing managers understand that media choice varies from situation to situation, and they make choices appropriate to the communication incident (Lengel & Daft, 1988; Mintzberg, 1973 cited in Russ et al., 1990). This is strongest for managers with higher-level positions and better performance evaluations (Lengel & Daft, 1988). Selection of media choice is not instinctive and stable across the organization, but higher-performing managers tend to demonstrate the ability to match the most appropriate media to the communication occurrence (Russ et al., 1990), and low performers are often viewed as poor communicators partly because of ineffective media choices (Lengel & Daft, 1988).

In order to perform the diverse tasks set before them, communication skills are of utmost importance to managers. Managers spend most of their time communicating with
others, and are expected to resolve disagreements, make administrative decisions and decide upon rules and instructions when needed (Mintzberg, 1973 cited Russ et al., 1990). It seems logical that managers who are superior at communicating are likely to be perceived as more effective managers than those who do not communicate as well (Trevino et al., 1987). Media selection patterns may be a factor in managerial performance because higher-performing managers are adept at communicating effectively (Trevino et al., 1987).

Research has suggested that the relationship between managerial media sensitivity and performance evaluations is significant (Lengel & Daft, 1988). In one study, it was discovered that the majority of managers who were perceived as media sensitive were also rated as high performers (Lengel & Daft, 1988). In this particular study, the researchers were able to predict with significant precision which managers were media sensitive and which were not, based on performance evaluations alone (Lengel & Daft, 1988). The media must have the ability to engage the sender and receiver in a shared understanding of the information being transmitted, and media sensitive managers will choose media appropriate to the situation (Lengel & Daft, 1988).

As members within organizations make decisions as to what medium to use in order to communicate a message, they also work within a symbol system unique to their environment. The next sections will discuss the use of symbols, how they are created and communicated in amongst people, the symbolic interactionism theory and how symbolic cues are used to make decision in organizations.
The Use of Symbols

Symbolic interactionism is a broad theoretical view that investigates the process of creating shared understandings. Across time, symbols evolve and meanings are created within organizations (Russ et al., 1990). People use symbols to define their environment, interpret situations and to aid in decision-making. There is some negotiation as members of the organization attempt to create symbols which convey applicable meaning (Russ et al., 1990). Strauss (1978 cited in Russ et al., 1990) says, “The social order is a negotiated order that is created through communication and interaction among organizational members” (p. 153).

Daft and Wiginton (1979) suggest that language, used in the broadest sense to include various ways to communicate ideas and emotions, can be arrayed along a continuum of language variety. The continuum captures the intuitive idea that language differs in its ability to convey meaning. High-variety language, such as art and music, is less restricted in its symbol use, can communicate a broader range of ideas and emotions, and allows for subjective interpretation of the message (Daft & Wiginton, 1979). Low-variety language, such as statistics, conveys greater precision of meaning, but uses symbols that are more restricted in their use and that express a more narrow range of ideas. Russ et al. (1990) suggest that “high-variety language is appropriate for communicating about equivocal, complex social phenomena, whereas well-understood, exact topics are best expressed in low-variety language” (p. 153).

The symbolic interactionist perspective asserts that people must learn the system of shared meanings, and that greater experience in social exchanges may play a key role in media selection. This type of learning takes place at a wide societal level and at the
more distinct organizational level (Russ et al., 1990). The organization is dynamic and is a system that encompasses many meanings for different phenomena. The main reason for members to communicate within the organization is to develop a system of shared meanings about issues (Trevino et al., 1987). Members rely on each other to define phenomena, and negotiation and feedback are main sources of interaction within the process of developing shared meanings. Meanings are subjective, and communicative behavior focuses on the perceptions of each member, language used, the use of symbols and the negotiation of creating shared meaning (Trevino et al., 1987).

An equivocal message can be interpreted several different ways. When there are no set scripts or symbols available to guide communicative behavior, meanings will be negotiated and created by organizational members (Trevino et al., 1987). People tend to look for cues and rely on feedback from others to aid in reducing the level of equivocality within a message.

Levels of equivocality are expected to influence the selection of media in that the greater the equivocality, the more likely the media choice will be richer. This research relies on the idea that organizational members have established a set of shared meanings, and in situations which produce higher levels of equivocality, richer mediums have the ability to convey symbolic features that written media are not able to do (Trevino et al., 1987). For instance, e-mail may offer rapid feedback but can not offer such cues as voice inflection, tone of voice, and pitch, all of which could aid in resolving misunderstandings within a communication incident (Trevino et al., 1987).

Trevino et al., (1987) undertook an exploratory field study that was to determine reasons for participants choosing particular mediums for various forms of
communication, and relating the reasons to media choice. They proposed that for situations in which equivocality is high, participants would choose richer forms of media such as face-to-face or telephone communication, and when the situation was less equivocal, a leaner media such as e-mail or written memo would be selected (Trevino et al., 1987). A content analysis determined emerging themes between media choice and reason categories; they include content reasons, symbolic reasons and situational reasons (Trevino et al., 1987). The reason(s) for communicating is dependent on the content at hand, symbolic reasons, such as to show care for another, trust and formality/informality, and situational determinants, such as how quickly a message needs to be distributed (Trevino et al., 1987).

The significance of symbol variety is dependent upon the information that needs to be transferred from one person to the next (Dennis & Valacich, 1999). A medium's ability to offer a great deal of symbol variety is not as important as whether or not the medium can successfully transmit a message or not (Dennis & Valacich, 1999). If the medium can provide a needed symbol set, it is not likely to interfere with the work at hand, and organizational members are not likely to become dissatisfied with the medium. The task at hand, and what medium can most efficiently aid in completing the task is of greater importance than matching the level of equivocality to the media, as Daft & Lengel have suggested (1986). If an e-mail message can provide a simple symbol set in which members can come to an understanding about a more equivocal situation, then face-to-face interaction may not be necessary. Especially when members have had previous exposure to one another through face-to-face interaction, e-mail may serve as the best option for later discussion about equivocal matters. The point is, choosing a medium to
transmit equivocal information may have less to do with matching the medium to the level of equivocality, and more to do with matching media capabilities to the “fundamental communication processes” at hand (Dennis & Valacich, 1999, p. 1). Because communication processes and the capabilities of each medium vary between new and existing relationships, and will likely change across time, it seems that e-mail communicators may have the ability to handle more equivocal information than once believed. This may be especially true when prior interaction has occurred between communicators.

Symbol Creation and Symbol Communication

The creation of new symbols occurs in situations where shared meanings do not yet exist (Trevino et al., 1987). Symbol creation results from difficult communication, in which “organizational members do not yet share a perception of events” (Russ et al., 1990, p. 154). A part of symbol creation is defining which one of the several equivocal meanings is the most appropriate in a particular situation. The organization must define symbols in order to establish common understanding, so as to be able to interpret the situation (Daft & Weick, 1984).

Symbol communication is made possible when a shared meaning of an event has already been established, equivocality is low and there is not a need for negotiating interpretations (Russ et al., 1990). When the sender and receiver of a message have similar experiences or backgrounds, and the message in unequivocal, pre-established symbols can be transmitted with greater ease (Daft & Macintosh, 1981).
Symbolic Interactionism and Media Richness

Symbolic interactionism can be applied to media richness theory in that the media richness model discusses equivocality as "the key to understanding the amount and kind of organizational communication that will occur" (Trevino et al., 1987, p. 557). When a situation is equivocal, a richer medium such as face-to-face communication will be needed in order to establish a shared symbolic meaning. For less equivocal situations, leaner media, such as e-mail memos and letters can be used because shared meaning has probably already been established in such equivocal situations. This is based on the premise that media vary in their capabilities for resolving equivocality when processing data (Bodensteiner, 1970; Daft & Lengel, 1984 cited in Trevino et al., 1987).

Research has shown that a positive relationship between media richness and message equivocality exists, as suggested by the symbolic interactionist perspective (Russ et al., 1990). Face-to-face and telephone communication help to facilitate the process of negotiating shared understanding between organizational members, and written letters and memos successfully transmit objective data. Equivocality reduction tends to measure more strongly in media selection than does sender/receiver position or personality traits (Russ et al., 1990).

Fulk's (1993) interpretation of symbolic interactionism suggests that sensemaking and shared understanding are on-going processes. "Yet symbolic features need not be fixed attributes of a medium. The symbolic meanings may well arise, be sustained, and evolve through on-going processes of joint sensemaking within social systems" (Fulk, 1993, p. 922). Even agreed upon meanings will change across time, and this will affect
media use as well. Interpretations about symbolic features used in media will change, therefore changing understanding of messages.

**Symbolic Cues**

Media vary in their ability to communicate symbolic cues (Trevino et al., 1987). If a manager wants to legitimize a decision, he or she may ask for more data than is necessary, and develop professional reports to symbolize his or her legitimacy and rationalization in making a decision that did not gain support from members of the organization (Trevino et al., 1987).

New technology has enabled managers to communicate in more diverse ways than before. Some managers find that ritualistic forms of communication may take more time and energy, and consequently use leaner media to convey messages to their subordinates. However, a manager who praises a subordinate via e-mail may communicate a lack of caring and concern for their employee (Trevino et al., 1987). Though the use of face-to-face communication would not be essential in this situation because the message does not contain high levels of equivocality, organizational members may feel slighted in receiving a congratulatory e-mail message. Subordinates may still need face-to-face communication with their managers in low equivocal situations, and receiving praise and congratulations may be included in this list (Trevino et al., 1987). This could be because, in face-to-face communication, the status and power of a manager is recognized, unlike when communicating via e-mail. Employees may desire face-to-face praise rather than praise over e-mail because face-to-face communication is personalized by the individual who has power and status. When praise is sent via an e-mail message, status symbols and
power are not as easily recognized and the influence of the message may be lost (Kiesler, Siegel & McGuire, 1984). Managers may feel tempted to use such computer-mediated technology like e-mail to praise an employee. This could be due to time constraints on the manager’s part, systems access and geographic location (Trevino et al., 1987). Managers who experience various job pressures, such as lack of time to complete projects, or are out of town during the time when the subordinate requires praise, may be more likely to send written text instead of making time or making themselves available to do so face-to-face (Trevino et al., 1987).

Symbolic cues may not yield as much power when used in technological settings as opposed to face-to-face interaction (Kiesler et al., 1984). However, organizational member’s needs may be met through technological communication if basic, human requirements needs are first fulfilled (Rice-Lively, 1996). The next section discusses Rice-Lively’s (1996) assertions regarding people’s sensory communication needs, and their effects on technological interaction with others.

**Hierarchy of Needs and Social Sensemaking in Technology**

According to Maslow’s (1970) hierarchy of needs, psychological or survival needs (what Rice-Lively calls sensory communication needs) are the foundation from which all other needs can be met (Rice-Lively, 1996). Rice-Lively (1996) developed a hierarchical structure, which serves as a refinement of Maslow’s pyramid in which social sensemaking is explained. Her research discovered that, in order for members of teleconferencing groups to be satisfied, a set of social needs has to be fulfilled (Rice-Lively, 1996). To build trust amongst members, sensory information such as sounds and
images need to be available, as do multiple cues from group members (Rice-Lively, 1996).

Because mediating technology distances organizational members, other variables are needed to alleviate tension which arises in distance communicating, as well as to compensate for social needs of members (Rice-Lively, 1996). Research reveals that face-to-face interaction helps members to form an “image” of each other which lessens the effects created by distance (Rice-Lively, 1996, p. 2). Organizational members develop impressions of one another during face-to-face communication, and the impressions carry over into future interaction with the same people. Face-to-face interaction builds trust, as multiple cues are available to aid in learning about others and social needs are more easily met (Rice-Lively, 1996). Because of the occurrence of face-to-face communication previous to teleconferencing activities, groups in Rice-Lively’s (1996) research were more likely to have built rapport and establish a trust level with other members. This evidently aids in producing effective communication amongst members. This suggests that organizational group members’ experiences with, and knowledge of, the sender of a message may alter the way in which the medium’s richness may be perceived (Dennis & Valacich, 1999). Media which are considered lean to one person or group may be perceived as rich to another, often depending on perceptions formulated based on previous interactions with others with whom they work. E-mail communication, then, is partly a socially defined method of interacting with others. It is not the fixed medium described in the media richness literature (Daft & Lengel, 1986; Lengel & Daft, 1988; Russ et al., 1990).
Safety and security needs are at the next level of Maslow's (1970) hierarchy, and are what Rice-Lively (1996) terms "comfort with and sense of surroundings" (p. 1). When members' social needs are met, they are enabled to comfortably interact with others (Rice-Lively, 1996). In order to achieve social sensemaking capabilities, members need to establish their role within the organizational environment, so that they can evolve into social participants, confident in their ability to contribute to group work (Rice-Lively, 1996). Solid relationships are built with each other when groups establish trust with and form positive impressions of other group members (Rice-Lively, 1996).

Social sensemaking is made possible when individuals build, as a social entity, a sense of self (Rice-Lively, 1996). Once a sense of self is attained, group members feel confident to provide significant contribution to group activities (Rice-Lively, 1996). This level of social interaction within the teleconferencing environment included trial and error and experimentation. The process involved "moving back and forth, gathering cues from their information environment to meet their social sensemaking needs" (Rice-Lively, 1996, p. 1). Rice-Lively's (1996) research strongly suggests that groups who are exposed in face-to-face interaction before entering into the teleconferencing environment are much more capable of effectively communicating via teleconferencing at a later time.

This research mirrors other studies which suggest that groups experience a series of developmental stages in which cohesion between members is made possible (McGraith, 1991; Tuckman, 1965). During different stages, groups exhibit varying communication needs, such as high levels of socialization at the early stages of development (McGraith, 1991; Tuckman, 1965). When group norms are secure and
interaction stabilized, organizational members can communicate effectively through leaner mediums (McGrath, Arrow, Grunfeld, Hollingshead & O’Connor, 1993).

Wiesenfeld, Raghuram & Garud (1998) suggest the way in which one identifies with their organization may be the crucial element that links virtual workers with their environment. Because the emergent uses of e-mail are obvious in many organizations and appear to be growing, (Wiesenfeld et al., 1998) such technology has enabled a “decentralization of work” (Lucas & Baroudi, 1994, p. 2). Technological inventions have enabled workers to communicate with each other while being “spatially and temporally decoupled” from each other (Wiesenfeld et al., 1998, p. 2). The following section will investigate the role that e-mail communication plays in the development of one’s organizational identity.

**Organizational Identity and E-mail Communication**

A person’s organizational identity (which refers to one’s cognitive attachment to the organization in which they belong) can significantly impact their communication within the organization (Wiesenfeld et al., 1998). Creating and sharing subjective views of an organization’s features, such as its norms and values, depends on the negotiation and resolution of how terms will be defined among members (Wiesenfeld et al., 1998). Communication aids in establishing shared meanings, which lead to organizational identity and member identification as well (Wiesenfeld et al., 1998).

Research on organizational identity suggests that, the stronger a person’s cognitive devotion to the organization, the more likely important beliefs and behaviors will be formed (Dutton, Dukerich & Harquail, 1994). These beliefs include feelings about
interpersonal trust with other group members, about how goals are set within the organization, the operation of norms, and the desire to stay with the organization (Dutton et al., 1994; Kramer, 1993). Identification of norms helps individuals align their behaviors with organizational expectations and creates opportunities to experience and learn the overall organizational or corporate identity, including an understanding of norms and established meanings shared among members (Lucas & Baroudi, 1994).

Though face-to-face communication appears most appropriate to handling unstructured tasks, some organizational groups have found that the development of norms through leaner media such as e-mail is possible (Wiesenfeld et al., 1998). In some situations e-mail is able to convey established norms, transmit shared meanings and impact group members within the organization (Wiesenfeld et al., 1998). In this way, e-mail may be an effective mode of creating and sustaining a sense of organizational identification (Wiesenfeld et al., 1998).

Different media present varying capabilities in regard to the social cues extended within a message, the ability of the medium to create shared interpretation of events, the level of accessibility of the medium and the level of informality provided (Daft & Lengel, 1988). Each of the four components include implications for the “impact of particular communication modes on the strength of member’s organizational identification” (Wiesenfeld et al., 1998, p. 6). What one medium does not offer in one dimension, such as lack of social cues, another medium will make up for in another dimension, including higher levels of informality and accessibility to the media, as observed in electronic mail (Wiesenfeld et al., 1998). Certain characteristics of leaner media like e-mail include an available and unconventional setting in which to communicate and generate meaning.
(Wiesenfeld et al., 1998). E-mail tends to be a fast, accommodating technology which allows for exchange of ideas and provides broad availability to other group members (Huff, Sproull & Kiesler, 1989). Though not as able to provide multiple cues as face-to-face communication, e-mail interactions may help relieve members of hierarchical structures and generate a feeling of equality which may encourage workers to feel central to the organizational process (Huff et al., 1989). When media are less formal, members are more likely to feel active in the process of creating shared meanings and relating to the overall organizational identity (Wiesenfeld et al., 1998). Members may report feeling powerful ties to the organizational identity created through social processes in which communication occurs through e-mail (Wiesenfeld et al., 1998).

Computer-mediated communication has become a popular choice in which to interact for many organizational members. E-mail use appears highest in terms of information processed via technological means (Carlson, 1995). Groups who communicate through the use of technology oftentimes struggle with the limits of technology, yet attempt to draw out the richness of such technology through various techniques (Carlson, 1995). The next section will discuss the social impact of the use of technology in e-mail communication.

**The Social Context of Technology**

Though Daft and Lengel (1986) set forth criteria to suggest the level of a medium's richness, the richness of a medium may also depend on the social context of the technology available (Yoo & Alavi, 2001). Lee (1994) reports discovering groups of e-mail communicators who perceive the medium to be rich in its ability to change
understanding within a time interval. Lee’s (1994) research argues that e-mail is not fixed as a rich or lean form of media, rather the interaction of e-mail within its organizational and social context decides its level of richness. Carlson (1995) discovered “U” shaped trends in perception of media richness over a period of time while studying groups of dyads. This research provided insight into e-mail’s ability to be perceived as a richer medium when certain criteria are present. Expansion of technological knowledge and experience with communicating with organizational members via e-mail are thought to be reasons for considering it a richer media than once perceived (Carlson, 1995). Evidently, the more knowledge and experience one has with e-mail, along with the length of time spent communicating with others by way of e-mail, affects the perceived richness of the medium (Carlson, 1995).

An interesting point, however, is that the lack of dynamic personal information within an e-mail message creates an environment in which communicators tend to focus on the message and not the person sending it (Kiesler, 1986). The following section will discuss the implications of computer-mediated communication.

**CMC**

Because computer-mediated communicators are not able to accurately assess the sender’s tone or evaluate how messages are being received, communicators feel less individuality and more independence than in face-to-face communication (Kiesler, 1986). The lack of nonverbal cues affects the CMC’s ability to decipher the tone of the message (Fulk & Collins-Jarvis, 2001). Because the lack of audio cues make it difficult to encode
and decode emotional signals, interpreting the mood or tone of a message might best be accomplished through face-to-face communication.

CMC’s have attempted to create a richer form of communication through such media as e-mail. People are now able to utilize computer screens with audio, text and “electronic pen” in which communication is experienced in “real time” (Steinfield, 1992, p. 358). Some CMC’s use a variety of emoticons to aid in transmitting emotions and feelings via electronic mail (Thompsen & Foulger, 1996). Pictographs (typographic symbols used to express a certain emotion) and responding to the sender using full or partial quotes included in the sender’s message have been used by CMC’s to aid in reducing the levels of equivocality within an e-mail setting (Thompsen & Foulger, 1996). CMC’s attempt to compensate for the weaknesses of e-mail communication through the use of screams, hugs and kisses (Pollack, 1982).

Though CMC’s have attempted to create a richer form of communication through e-mail, the use of “flaming” has helped to lessen the likelihood that e-mail will evolve into a richer source of media (Kiesler, 1986, p. 7). Flaming is observed in the use of insulting language and name calling in e-mail communication. This phenomena takes place in part due to the frustration level CMC’s feel when they are misunderstood and when misinterpretation in communication is high. Unlike face-to-face communication, where rapid correcting of misunderstanding and misinterpretation is available, e-mail communication is slower in resolving misinterpretations (Kiesler, 1986). The use of flaming stunts the evolution of e-mail communication into a richer media. Flaming encourages continuous misinterpretations and lack of resolution to the communication
occurrence when equivocality reduction is attempted through computer-mediated communication (Fulk & Collins-Jarvis, 2001).

Conversely, some CMC’s will not attempt to produce a richer form of communication through e-mail (Schmitz & Fulk, 1991). The number of typos and fragmented sentences discovered in some e-mail messages have led some researchers to believe that not all CMC’s are interested in communicating in e-mail as they might face-to-face (Schmitz & Fulk, 1991). This too may prevent the evolution of electronic mail messages becoming as rich as face-to-face or telephone communication.

Though the media richness theory purports the use of face-to-face communication in highly equivocal situations, (Daft & Lengel, 1988), others suggest that computer-mediated communication might actually be the most efficient and beneficial choice for organizational members in some situations (Culnan & Marcus, 1987; Fulk & Collins-Jarvis, 2001). The next section will review the selection of CMC as a means of communicating.

**CMC as Choice in Communication**

Critics of the media richness theory argue that because face-to-face communication is considered the most appropriate choice in equivocal situations, mediated communication must involve losses (Culnan & Marcus, 1987; Rice, 1984). Due to the evolution of technology and its ever-changing capabilities, the possibility of computer-mediated meetings to evolve into as rich a media as face-to-face interaction is considered plausible (Culnan & Marcus, 1987).
Satisfaction within a communication incident tends to increase in face-to-face interaction, because members tend to feel personally involved in the process and less likely to feel depersonalized as with e-mail communication (Sproull & Kiesler, 1986; Trevino et al., 1987). However, research suggests that empowered groups who utilize teleconferencing as a main mode of communication experience less satisfaction with the process, but tend to manage tasks and acquire the technological prowess required of them without experiencing debilitating effects on performance (Fulk & Collins-Jarvis, 2001). Organizational members may halt their personal preferences in communicating so as to maintain performance under moderate constraints (Fulk & Collins-Jarvis, 2001). This same line of thinking may be applicable to e-mail communication between group members. Though the preferred mode of communicating may be through face-to-face interaction, e-mail communication may allow for organizational members to maintain the level of performance they are accustomed to, even in highly equivocal situations (Wiesenfeld et al., 1998). This could be due to the confidence groups have in utilizing e-mail as a form of communication. Though e-mail might not be the first choice for group members, the comfort level associated with making decisions via e-mail aid in group acceptance of it as a useful mode of communication (Wiesenfeld et al., 1998).

People tend to adapt to the technology available to them as well as to the situation at hand. An example of this, not foreseen by previous research, is the ability to utilize "must" buttons during conference calls in order to speak privately about an issue so that the members at another node can not hear (Culnan & Marcus, 1987). Other research provides evidence regarding organizational members who passed notes under the table during face-to-face communication meetings, suggesting to researchers that personal
meetings were not adequate for some members (Fulk & Dutton, 1984). Research suggests that some groups prefer communicating by way of e-mail (Kock, 1998). It was discovered that group members thought using e-mail was “less disruptive of their routine activities, and it allowed them to interact with the group at the most convenient time for them” (Kock, 1998 p. 4). Conversely, Kock’s (1998) research discovered that when one-to-one communication was required, most people relied heavily on face-to-face interaction. When group communication was required, most members expressed preference for e-mail communication over face-to-face interaction (Kock, 1998).

Group members in Kock’s (1998) study conformed to using e-mail, and this manifested in their tendency to spend more time preparing individual contributions to the group process. This suggests members took time to reflect upon messages before sending them. Group members also offered longer contributions through e-mail communication than in face-to-face interaction (Kock, 1998) Some groups felt strongly that e-mail not only saved time, but allowed for meaningful interaction to occur between group members (Kock, 1998).

Though e-mail communication may indeed be an effective way to communicate with others, the use of flaming is a real threat to its use. The following section discusses ways in which flaming in e-mail communication can be reduced.

**Reducing Flaming in E-mail Communication**

Though flaming has been observed as a possible detriment on the likelihood that e-mail will evolve into a richer media, research shows that the use of pictographs may help to reduce perceptions of flaming (Thompsen & Foulger, 1996). Pictographs are
typographic symbols used in computer-mediated communication to express nonverbal and emotion-based communication (Thompsen & Foulger, 1996). Pictographs have been referred to as ‘emoticons’, (Blackman & Clevenger, 1990; Zancanella, 1994) or ‘relational icons’ (Asteroff, 1987) and have been given praise for their ability to serve as nonverbal “surrogates” in CMC (Thompsen & Foulger, 1996, p. 229). Users of e-mail employ pictographs as an attempt to create a richer form of media (Thompsen & Foulger, 1987). The symbol strings used to create pictographs serve as “audible, visible and tactile elements of interpersonal communication,” which otherwise would be lacking from e-mail (Thompsen & Foulger, 1996, p. 229). Pictographs help to overcome the limitation inherent in e-mail as well as serve as a buffer against flaming (Thompsen & Foulger, 1996).

If the use of pictographs does not entirely overcome the threat of flaming, research shows that it at least slows the process of a simple difference of opinion resulting in dissension between communicators (Thompsen & Foulger, 1996). Thompsen & Foulger (1996) present evidence that when pictographs are used within messages where tension between communicators is present, the pictographs reduce the occurrence of flaming. However, when antagonism is present between communicators, the effect of pictographs as a modifier is significantly reduced (Thompsen & Foulger, 1996). This may be because pictographs alert communicators that a message should be interpreted less seriously and as less of a threat so as to prevent the occurrence of flaming (Thompsen & Foulger, 1996). In messages which reveal a level of disagreement and tension, the use of pictographs may help discourage the escalation of tension, which reduces the likelihood of flaming (Thompsen & Foulger, 1996).
Quoting styles refer to how one reacts to a message, either by using partial or full quotes in response to a message received (Thompsen & Foulger, 1996). Research suggests that quoting styles may be useful in reducing equivocality within e-mail communication (Thompsen & Foulger, 1996). Depending on its use, quoting can help to alleviate equivocality in messages that express disagreement, or serve as a means for “clarifying one’s position” (Thompsen & Foulger, 1996, p. 238). In messages which convey antagonistic feelings, quoting may help to reveal the communicator’s bitterness, which tends to increase the likeliness of flaming to occur (Thompsen & Foulger, 1996).

The reduction of flaming, combined with the research that provides evidence that e-mail communication is the choice for many organizational members, (Kock, 1998; Wiesenfeld et al., 1998) provides an arena for pondering the possibility of e-mail as a richer medium than described by Daft & Lengel (1988). The next section will discuss communication through e-mail interaction, and its potential of evolving into a richer medium.

**E-mail Communication as a Rich Medium**

It would be interesting to speculate about the effects of face-to-face communication on organizational group members’ abilities to effectively communicate via e-mail. Media richness theory suggests many contextual components beyond technology which could have an impact on communication processes and outcomes (Fulk & Collins-Jarvis, 2001). The idea that interpersonal attraction may interact with technology to affect a communication situation could explain how a medium may be related to the appraisal of people met by means of the medium (Short, Williams, &
Media factors may inhibit the expression of cues needed to establish warmth, and when people attempt to express personal cues, the medium restrains such communication (Fulk & Collins-Jarvis, 2001). One could argue that the use of e-mail is able to compensate for processes within communication that traditionally seem to fail in face-to-face communication. As Wiesenfeld et al., (1998) suggests, group members have reported that e-mail communication is a technology which accommodates the exchange of ideas more easily than does face-to-face communication. In face-to-face communication, typically it is clear who has the power in the relationship, making it difficult for equal reciprocity among organizational members (Huff et al., 1989). E-mail interaction tends to be less formal than face-to-face communication, which aids in member's abilities to help create organizational meanings (Wiesenfeld et al., 1998). What one media lacks in an area, such as social cues in e-mail, it may make up for in other areas, such as the availability and informality of e-mail (Wiesenfeld et al., 1998). Though e-mail has been historically characterized as an impersonal medium with the likeliness of producing hostile communication between organizational members, it is now being recognized as an inviting way of interacting, offering the same levels of richness that have been traditionally assigned to face-to-face interaction (Walther, 1996).

Markus (1994) points out that, though face-to-face interaction may aid significantly in unstructured and equivocal tasks, it is possible for work groups to create norms of using leaner media, such as e-mail, for these tasks. Emergent norms can aid in conveying more meaning and making a greater impact through e-mail use than it might in different contexts (Markus, 1994). If norms are established via e-mail, those norms might be
heeded by those who witnessed their emergence within the context of e-mail communication, but not in face-to-face or telephone interaction.

It would be interesting to speculate that previous face-to-face interaction, prior to e-mail communication, might aid in the perception of e-mail as a richer media. As Rice-Lively (1996) discusses, face-to-face interaction allows people to experience sensory information from others which aids in forming an idea or concept of the individual. Impressions are greatest during verbal and nonverbal exchanges in face-to-face interaction, but images of others can be carried over in our minds and memories when the effects of distance are present (Rice-Lively, 1996). One could argue then, that if prior face-to-face communication were experienced to later e-mail interaction, impressions of the other could remain in our memories and aid in making the interaction richer than had it been if the face-to-face encounter had not occurred.

E-mail is generally perceived as less effective for getting to know others, due to its lack of personal effectiveness and its inability to communicate affective content (Craig & Jull, 1974 cited in Johnson et al., 1979; Thomas & Williams, 1975; Williams, 1973). However, many studies provide evidence that audio communication is no less effective than face-to-face communication in developing opinions about another (Johansen, Vallee & Spangler, 1979). This could be because forming impressions may not be as interactive as forming a relationship with another. Personal relationships might require the other person to be an involved communicator, so that forming impressions can be done cognitively (Fiske & Taylor, 1991). Because cognitive processes contrast with emotional processes, it may be that once face-to-face interaction has occurred and emotional needs have been met, the use of a leaner media such as e-mail may succeed in becoming a
richer media in some circumstances. In incidents which include higher levels of equivocality, a richer media such as face-to-face is suggested (Daft & Lengel, 1988), yet in some situations e-mail may succeed in demonstrating itself as a richer form of media. This may especially be the case in scenarios where e-mail correspondents have had the opportunity to meet and form impressions of one another or establish a relationship prior to utilizing e-mail as a means of handling equivocality.

As impressions are formed of others, members are able to build relationships with each other within the organization. Negotiation, consensus-building, and conflict management strategies emerge over time, and members become aware and accustomed to the way in which others typically handle situations. We learn how others think and feel through interaction with them and we establish a base understanding of the person over time (Rice-Lively, 1996). We carry these perceptions about individuals into every interaction we experience with them, whether it be face-to-face, telephone, e-mail or memo communication. Today, e-mail has more abilities to change meaning within a time interval and convey a multiplicity of cues (Dennis & Valacich, 1999). Combined with its rehearsability and reprocessability functions, it may be that once previous interactions have occurred, e-mail communication could be perceived and used as a richer medium than once thought.

And as organizational members form impressions of each other, certain relational themes emerge between communicators, as well (Burgoon & Hale, 1987). The next section will discuss relational themes which are apparent in face-to-face encounters, and which may become prominent in e-mail communication, too.
Themes of Relational Communication In E-mail Interaction

Burgoon & Hale's (1987) research on defining interpersonal relationships discovered that there are eight relational message themes apparent in interactions with others, and they have developed a measuring instrument to use in studies of interpersonal communication. The relational themes include: immediacy/affection, similarity/depth, receptivity/trust, composure, formality, dominance, equality, and task orientation.

Immediacy/affection deals with the intensity shared in conversation, as well as level of interest shown between communicators. Similarity/depth looks at the deepening of the relational involvement and whether each communicator desire additional conversation with each other. Receptivity/trust discusses the level of sincerity between communicators, honesty, and willingness to listen to each other. Composure deals with whether one is calm or poised while communicating, as determined by the level of nervousness or anxiety perceived in the interaction. Formality discusses the desire for formal or casual conversation. Dominance looks at persuasion tactics, attempts to influence and the use of power in conversation. Equality discusses the level of cooperation within interaction as well as whether or not each participant is perceived as being treated as an equal by the other. Task orientation deals with each communicator's desires to stay with the main purpose of the meeting, or instead show interest in social conversation (Burgoon & Hale, 1987).

Typically we think of relational themes emerging in face-to-face interaction, though they likely emerge in e-mail communication, too. Equivocality reduction can be measured through the perceived presence of relational themes. When one is able to determine the presence or not of such themes, they are also able to determine levels of
equivocality within a message. For example, if a participant is able to determine whether or not the sender of an e-mail message was “intensely interested in initiating conversation with me,” (Burgoon & Hale, 1987, p. 36) they are essentially making a judgment as to the level of equivocality within that interaction.

In addition to various studies of the instrument, supplemental data from many experiments which utilized the scale, strongly suggest that “interpersonal exchanges may express a wide array of relational message themes” (Burgoon & Hale, 1987, p. 39). Participants have been able to distinguish between the relational dimensions, along which “interactional partners are seen to impart messages” (Burgoon & Hale, 1987, p. 39). Participants could use the relational themes to determine and make sense of interactions between “employer and employee, husband and wife, parent and child, or union and management representative” (Burgoon & Hale, 1987, p. 40).

This can be directly tied into a discussion about equivocality, in that some of the reasons we communicate depend on what needs to be discussed, (content), and symbolic reasons such as to demonstrate concern for another, show formality/informality and build trust. Situational determinants, including how quickly a message should be distributed, and the level of equivocality within the message are also a consideration when deciding what needs to be communicated, and the manner in which we approach topics (Trevino et al., 1987). When there are no set scripts or symbols available to guide communicative behavior, meanings will be negotiated and created by organizational members, (Trevino et al., 1987) and people tend to look for cues and rely on feedback from others to aid in reducing the level of equivocality within a message.
Equivocality is apparent in different settings including, within relational aspects of human communication, technological interactions between people, the content of communicative acts, and the context or environment in which people interact. Furthermore, organizational ideology and the culture of the organization may influence organizational members' perceptions of equivocality. Socially, we rely on each other to define situations, and through negotiation and feedback are able to develop shared meanings, thus reducing the level of equivocality within a message (Trevino et al., 1987). Because meanings are subjective, and communicative behavior focuses on the perceptions of others, language used, the use of symbols and the negotiation of creating shared meaning, (Trevino et al., 1987) it appears that the way in which we interpret relational themes when interacting with others can help either increase or reduce levels of equivocality within the social context. Therefore, Burgoon & Hale's (1987) relational themes scale could be used to aid in assessing the level of equivocality perceived by participants in the proposed study. Though Burgoon & Hale's (1987) work focuses on face-to-face interaction between people, it would be interesting to speculate that the same relational themes emerge over time through the use of e-mail communication, particularly when prior face-to-face interaction has previously occurred.

As argued before, the richness of a medium may be determined more broadly than noted in the current accepted view of media richness theory (Daft & Lengel, 1986; Lengel & Daft, 1988; Russ et al., 1990). For an interaction to be truly successful, both the receiver and sender of a message must understand the message intended by the sender (Dennis & Valacich, 1999). Matching the medium to the level of equivocality in a message becomes less important than being able to work within a medium, like e-mail, to
successfully communicate with another. Because previous encounters leave us with impressions of others that we tend to remember when communicating with them at a later time, (Rice-Lively, 1996) it may be that later e-mail contact with others could be a richer medium than once thought.

The nature of past media richness research focuses on face-to-face communication as being the most effective way to reduce equivocality between communicators (Daft & Lengel, 1986). The media richness model predicts varying levels of equivocality for each type of interaction, with face-to-face being lowest, and memos being highest in terms of equivocality.

Based on the research discussed, the following hypothesis has been proposed:

**Hypothesis**

H = The rankings of various e-mail communication contexts from richest to leanest in terms of equivocality will be:

1) E-mail with prior face-to-face interaction
2) E-mail with prior telephone interaction
3) E-mail with prior e-mail interaction
4) E-mail with prior memo interaction
5) E-mail with no prior communication
CHAPTER II
METHOD

Introduction

The objective of this inquiry was to research the effects of prior face-to-face interaction on e-mail interaction, in order to determine if e-mail communication that is preceded by prior interaction would be perceived as a richer medium than discussed by the media richness model. Particular focus was spent on e-mail’s ability to reduce equivocality within communication situations.

Subjects

Participants were employees of two publicly owned staffing firms located in the same midsize Midwestern town. All employees who use the organization’s internal e-mail system to send and receive messages, and who use face-to-face, telephone, and e-mail interaction, and are exposed to written forms of communication (such as memo) were asked to participate. Demographics such as age, gender and education were not factors in sample selection. Employees who were given the measuring instrument are required to meet with job candidates regularly in face-to-face encounters and via the telephone, and all employees have an e-mail account, have been trained in e-mail communication, and receive regular messages from corporate entities and others within the organizations, to which they are expected to respond regularly. In addition, memos
are distributed to all participants throughout the organizations. In these memos, vacation policy and insurance changes are announced, special holiday hours are posted, openings and closings of offices are listed, and feedback from corporate officials is given.

**Instrumentation**

Section I of the questionnaire gathered some preliminary information about the respondents. Section II presented participants with an e-mail scenario, in which they were asked to review and respond to a questionnaire that followed. Burgoon & Hale’s (1987) relational theme scale was used to help assess the level of equivocality perceived in the message. Questions 1-9 focused on the perceived level of equivocality with regards to emergent relational themes.

Eight dimensions of relational message themes were included in the questionnaire, to help ascertain dimensions of interpersonal interaction (Burgoon & Hale, 1987). They included measures of immediacy/affection, similarity/depth, receptivity/trust, composure, formality, dominance, equality and task orientation. Each item consisted of a statement about interpersonal interaction, with choices ranging from very confident to not at all confident. Sample items included, “I could tell whether or not he/she was communicating warmth or coldness,” “I could tell whether or not he/she desired further conversation with me,” “I could tell whether or not he/she was more interested in socializing than working,” and “I could tell whether or not he/she considered me an equal” (Burgoon & Hale, 1987, p. 36).

Items were selected which seemed to most closely approximate the kinds of equivocality that would likely be present in the scenarios described. Thus, all themes
from the scale were not included and the overall reliabilities described below are only indirectly mentioned. They are listed, however, to give the reader some idea of the reliability of the measuring instrument. The items that were included come from the following dimensions: immediacy/affection, similarity/depth, receptivity/trust, formality, equality, and task orientation. The dimensions of composure and dominance were not represented because they were not perceived to be relevant. Validity and reliability of the measuring instrument have been demonstrated by Burgoon & Hale (1987). Alpha coefficients for the relational dimension factors were: .81 for immediacy/affection, .77 for similarity/depth, .76 for receptivity/trust, .80 for composure, .61 for formality, .66 for dominance, and .52 for equality (Burgoon & Hale, 1987). The reliabilities of the overall dimensions are only indirectly relevant, however, because only selected items from each dimension were included. The following information relates to the validity of the measuring instrument.

Determining the relational themes and creating categories for each of the eight dimensions was done through a series of experiments in which dyadic communication was observed and recorded (Burgoon & Hale, 1987). Participants communicated with a friend and then with a stranger, and their ultimate goal was to arrive at a consensus to a problem given to them by the researchers (Burgoon & Hale, 1987). Each participant was instructed to discuss the problem of either a social or moral issue with a friend and a stranger. In each pair, one participant was considered a “confederate”, and 1/3 of the time this person was asked to increase their level of nonverbal immediacy by leaning forward while talking to the other, moving closer to them, maintaining eye contact throughout the conversation, and keeping an open posture (Burgoon & Hale, 1987). Another 1/3 were
instructed to reduce nonverbal immediacy by moving away from the other, leaning back in their chair, reducing their level of eye contact and using closed posture when communicating (Burgoon & Hale, 1987). The remaining 1/3 were asked to communicate as they naturally would (Burgoon & Hale, 1987). Upon completion of the experiment, participants responded to questions on the relational message scale. The experiment itself provides evidence of the predictive usefulness of the measurement instrument. Differences in gender of participants, eye contact and reward levels were studied, and varying perceptions emerged amongst participants regarding the relational communication of immediacy/affection, p < .05, reward, p < .05, gaze, p < .05, trust/receptivity, p = .08, similarity/depth, p = .08, gaze by gender, p < .05, dominance, p < .05 (Burgoon & Hale, 1987). Males and females were also perceived to send contrasting messages through the relational themes of immediacy and dominance (Burgoon & Hale, 1987).

Items 10-15 of the scale used in the present study focused on gathering further data to help assess the level of equivocality within the message, as well as believability of the message. Choices ranged from strongly agree to strongly disagree. Items 10-12 asked directly about the level of equivocality within the message; “I think I would know how to respond to this e-mail,” “I was sure what to conclude from this e-mail message,” and “I received enough information to fully understand the message.” Item 13 focused on the participant’s perception of the sender; “I think I like the person who sent the message to me.” Items 14-15 focused on the believability of the message; “This e-mail message looks like one I might receive on a typical business day,” and “This e-mail message is fitting to the type of work I do.”
Items 16-17 were open-ended, and focused on the participant’s overall reaction to the message; “How would you respond to this e-mail message,” and “What reactions do you have to the e-mail message and what the sender is trying to communicate to you?” Item 16 was coded using a five point scale which measured the participant’s perceived level of equivocality within the message: very equivocal-very unequivocal. Item 17 was coded using a five point scale which measured the participant’s substantively positive or negative reaction to the message: very positive-very negative. Two intercoders, using the same operational measurements, reviewed participant responses to the questionnaires. Themes of perceived equivocality within the content of the message were measured, as were relational dimensions of the message. The relational aspects were measured in order to ascertain response patterns amongst participants regarding their personal reactions to the message. It was thought that prior richer interactions might lead to more positive reactions, while leaner interactions might lead to more negative reactions from participants. A subsample of twenty surveys was reviewed, coded by both raters, and intercoders agreed on the coding of at least 16 of the 20 in all cases. Intercoder reliability for the items was greater than 80%. The full questionnaire can be found in Appendix A.

Procedures

All employees who fit the sample selection criterion were asked to participate. Participants were presented with one of five different scenarios in which an example of an e-mail message was reviewed and participants answered questions regarding the message they read. Each participant received only one scenario to review. The sample
size for each scenario was at least 15, with an overall sample size of 77 participants. A thought-experimental approach was used, in which participants were to imagine that they have had only prior face-to-face, telephone, e-mail, memo, or no interaction at all with the sender of the message. These scenarios were randomly assigned to participants. The e-mail messages were pretested for believability with other employees at different locations of the staffing firms. Scenario instructions were pretested: participants rated each scenario for level of equivocality. Each participant rated only one scenario to ensure that differences between messages were apparent. Participants were then asked to answer a series of questions, designed to determine whether the e-mail message was perceived as more or less equivocal. Measuring instruments were taken to offices personally and distributed and collected by the branch manager who placed them in an envelope. The researcher collected the envelopes from the branch managers. Participants had the opportunity to ask questions about the questionnaire, if they so chose. Anonymity and confidentiality was assured, though there was a space for participants to include their name if desired. Data were analyzed by reviewing responses to gauge participant’s reactions to the level of equivocality within the messages, as well as whether or not the e-mail message seemed typical of one they might receive. A full copy of the pretest questionnaire can be found in Appendix A.

Data Analysis

Data were analyzed using the SPSS (Statistical Package for Social Sciences). A series of oneway analysis of variance (ANOVA) tests were conducted. These analyses looked for differences amongst the experimental groups on the dependent variable of
equivocality. Factorial ANOVA's were used for some supplemental analyses, combining the demographic information with the main independent variable to look for statistical interactions.
CHAPTER III
RESULTS

This study proposed one hypothesis to examine the effects of prior face-to-face interaction on e-mail interaction. The study focused on e-mail's ability to reduce equivocality within various communicative interactions. The results of the analysis of the data are presented below.

Hypothesis: The rankings of various e-mail communication contexts from richest to leanest in terms of equivocality will be:
1) E-mail with prior face-to-face interaction
2) E-mail with prior telephone interaction
3) E-mail with prior e-mail interaction
4) E-mail with prior memo interaction
5) E-mail with no prior communication

This hypothesis was tested through a series of oneway ANOVA's. The results indicated partial support for the hypothesis. Complete details of the ANOVA's are presented in Table 1. As the data in the table demonstrate, the results indicate significant effects found on the following dependent variables: participants could tell whether or not the sender of the message was communicating warmth or coldness, (p=.004); whether or
not the sender was enthusiastic about communicating, \((p=.007)\); whether or not the sender desired further conversation, \((p=.018)\); whether or not the sender was sincere, \((p=.018)\); whether or not the sender considered them equal, \((p=.002)\); if the receiver knew how to respond to the message, \((p=.002)\); if the receiver was able to draw conclusions about the message, \((p=.001)\), if the receiver thought they had enough information to fully understand the message, \((p=.006)\); and if the receiver liked the sender of the message, \((p=.000)\).

**TABLE 1**

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This series of oneway ANOVA’s demonstrates that previous face-to-face, telephone, or e-mail interaction with the sender of the message aided in reducing equivocality in subsequent e-mail messages. Means for the individual groups are presented in Table 2. Results are as follows:

- The means were significantly higher for previous telephone and face-to-face contact than for only prior memo interaction in participants’ abilities to determine whether or not the sender conveyed warmth or coldness.
- The mean for prior face-to-face contact was significantly higher than were the means for prior memo contact and no contact, in being able to decide whether or not the sender conveyed enthusiasm.

- Face-to-face and telephone means were significantly higher than for no prior contact in judging whether or not the sender desired further conversation.

- The mean for prior face-to-face communication was significantly higher than for only previous memo communication in determining whether or not the sender was sincere.

- Face-to-face and telephone means were significantly higher than for no prior contact and only previous memo contact, in deciding whether or not the sender considered the receiver of the message an equal.

- Means for e-mail, telephone, and face-to-face contact were significantly higher than for having no prior contact in knowing how to respond to, and what to conclude from the e-mail message.

- The mean for previous face-to-face interaction was significantly higher than for having no prior contact and having only prior memo contact in determining if there was enough information within the message to fully understand the message.

- The mean for face-to-face contact was significantly higher than for having prior e-mail and memo contact, and no prior contact, in determining if the receiver liked the sender.

- The mean for prior telephone interaction was significantly higher than for prior memo contact and not having any prior contact in deciding if the receiver liked the sender.
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Participants’ overall reactions to the relational aspects of the message were measured in summed indices. The following dependent variables were included to provide an overall indication of participants’ abilities to make judgments about the relational dimensions within the message: Participant ability to determine whether or not the sender conveyed warmth or coldness, if the sender was enthusiastic or not, if the sender desired more conversation, was sincere, was interested in the receiver’s ideas, wanted to socialize or work, created distance or closeness, was formal or informal in their
approach, and whether or not the sender considered the receiver an equal. Overall, these analysis indicated that participants were able to more confidently assess the relational dimensions in face-to-face and telephone interaction than in e-mail interaction, not having any contact at all, and having only prior memo contact (F=6.17; df=4,72; p=.000). Means are as follows: prior face-to-face contact=16.12; prior telephone contact=17.00; prior e-mail contact=20.00; no prior contact=21.50; prior memo contact=22.53.

Participant assessment of perceived equivocality within the content of the message was also measured. The following dependent variables were included to provide an overall indication of participants’ abilities to make judgments about equivocality within the content of the message: participants’ confidence in knowing how to respond to the message, what to conclude from the message, whether or not they were given enough information to determine the overall meaning of the message, and if the participant liked the sender. Consistent with the results reported above, respondents perceived less equivocality in face-to-face, telephone, and e-mail interaction than having only prior memo contact or no contact at all (F=5.62; df=4,70; p=.001). Means are as follows: prior face-to-face contact=4.76; prior telephone contact=5.07; prior e-mail contact=5.20, prior memo contact=6.87; no prior contact=7.23.

Participants’ perception of the equivocality within the content of the message was measured in relation to how they responded to the open-ended question, “How would you respond to this e-mail message?” In contrast to the results reported above, respondents perceived more equivocality when having had prior face-to-face, telephone, and e-mail communication than when no prior contact or only prior memo contact had been made (F=1.31; df=4,65; p=.275). Means are as follows: no prior contact, 1.92; prior memo
contact, 2.21; prior e-mail contact, 2.23, prior telephone contact, 2.43; prior face-to-face contact, 2.50.

In addition, participants' positive and negative reactions to the message were measured in relation to how they responded to the open-ended question, "What reactions do you have to the e-mail message and what the sender is trying to communicate to you?" Respondents reported less negative reactions in having had those conditions of prior telephone and face-to-face contact, than did those who were told that they had only prior e-mail contact, memo contact or no contact at all ($F=1.05; \text{df}=4,65; p=.211$). Means are as follows: Prior telephone contact, 2.43; prior face-to-face contact, 2.63; prior e-mail contact, 3.00; prior memo contact, 3.00; no prior contact, 3.23.

Descriptive statistics were assessed to determine the perceived legitimacy of the e-mail message example used in the survey instrument. Each participant was asked whether or not they felt the e-mail message was typical of one they might receive within their organization, and if it was fitting to the type of work they do.

Twenty out of 77 participants strongly agreed that the e-mail message was typical of one they might receive within their organization, 37 agreed, 13 disagreed, and 7 strongly disagreed that the e-mail message was typical of one they might receive. Nineteen out of 77 participants strongly agreed that the message was fitting to the type of work they do, 41 agreed, 14 disagreed, and 3 strongly disagreed with this statement. Complete details of the descriptives are presented in Table 3. A discussion of these results and their implications follows this section.
### TABLE 3

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The purpose of this study was to discover if prior interactions, in particular, face-to-face, telephone, e-mail, memo, or no contact at all, would affect later e-mail communication between people, in terms of perceived equivocality within e-mail messages. The findings of this study are discussed within the framework of media richness theory, which was reviewed in Chapter I.

Consistent with the pretest study, participants who had previous face-to-face, telephone, and e-mail interaction before communicating via e-mail were more likely overall to perceive less equivocality within later e-mail interactions. Those respondents who had only prior memo contact, or no contact at all previous to communicating via e-mail, were likely to perceive more equivocality within the e-mail message they reviewed.

The results of the analysis present interesting information about the nature of interactions as variables in perceived equivocality. Respondents who had imagined prior face-to-face contact with the sender were, overall, more likely to perceive less equivocality within the message than those who had prior telephone or e-mail interaction. Those respondents who imagined prior telephone contact perceived less equivocality within messages than those respondents who imagined prior e-mail interaction. Respondents who imagined only prior memo contact, or no contact at all perceived the most equivocality within the message they reviewed.
Some interesting findings were discovered through responses from participants who imagined having had only e-mail contact prior to the e-mail message reviewed. The mean score was higher for those who imagined having had prior e-mail contact in knowing how to respond to the message and what to conclude from the message. Perhaps these findings can be attributed to the possibility that e-mail communicators are familiar with how to respond to e-mail messages, regardless of whether equivocality within the message is perceived to be high or low. By nature, e-mail messages tend to be somewhat equivocal. It could be that e-mail communicators are proficient at communicating their confusion to the sender, in such a way that eventually equivocality is lessened. Because this group was instructed to imagine having had only previous e-mail communication with the sender, it is likely that they were able to picture previous interactions in which equivocality was reduced through e-mail only. Knowing how to respond to the e-mail may have included asking for more information to reduce the perceived equivocality within the message. And drawing conclusions about the message may be especially typical of what e-mail communicators are familiar with; perhaps they oftentimes conclude that they need more information from the sender in order to fully understand the intended message.

It may be that this group had imagined previous e-mail interactions with the sender in which they became familiar with the sender’s style of communicating, therefore had an easier time deciphering what the message meant, and what to conclude from it. If a person has only had prior e-mail interaction with another, he or she may more easily adapt to the other’s way of expressing thoughts and ideas through e-mail communication. This suggestion may be helpful in our understanding of the various ways in which we
interact with others. If we have had only prior face-to-face interaction with another, we tend to develop an understanding of how they express their thoughts and ideas through face-to-face communication. Those who have had only prior telephone contact with another are probably used to assessing equivocality through the cues they pick up from conversations via the telephone. Perhaps those who communicate exclusively via e-mail are better able to respond to the message and draw conclusions about the message for the reasons discussed above.

Conversely, the mean scores for those having had only prior e-mail communication before receiving the message were lower in determining if the receiver liked the sender of the message. It would be interesting to speculate that e-mail communicators have a tendency to spend much of their time deciphering messages, as opposed to focusing on developing affections toward the sender. Because e-mail messages are not able to convey nonverbal cues or voice qualities in the same way that face-to-face and telephone interaction provide, perhaps e-mail communicators are not as able to develop a liking for the other person as easily as is done through richer interactions. And ultimately it may have less to do with liking or disliking the sender, as it does with the perceived equivocality of getting to know another person on-line. In other words, people who communicate with each other by means of e-mail alone, may not have been exposed to enough cues to have developed a true liking or dislike for the other person, and may instead choose to concentrate on managing the content of the message by finding ways to reduce equivocality, more so than managing the relational aspects of the message.
As the data in the present study show, however, those participants who imagined face-to-face and telephone contact prior to e-mail communication reported an overall liking of the sender of the message. To suggest that prior face-to-face or telephone contact impacts one’s liking toward another, one could argue that those who imagined having had face-to-face and telephone interactions pictured their experiences with the sender to be one of a positive nature, in which verbal and nonverbal cues were perceived as helpful in reducing equivocality. It would be interesting to speculate the opposite might be discovered if the participant imagined the encounter to be negative. In any case, for this present study, the data provide enough evidence to support that prior, richer interactions make a significant difference in how we view others in later e-mail communication.

Media richness literature discusses e-mail communication as being limited in the number of nonverbal cues it provides, and in many cases is slower to give feedback (Russ et al., 1990). This study provides evidence that when richer forms of communication precede e-mail communication, e-mail interaction can be perceived as a richer medium than described in the literature. Participants who imagined having had face-to-face, telephone, and e-mail interaction prior to receiving the e-mail message reported they were better able to assess emergent relational themes within the message than those who had only prior memo contact, or no contact at all. The analysis of variance reported that there were significant differences between these groups. In particular, those participants who imagined prior face-to-face, telephone, or e-mail interactions were able to determine if the sender conveyed warmth, enthusiasm, wanted further conversation, was sincere, if the sender treated the receiver of the message as an equal, what to conclude from the
message, thought they had enough information to fully understand the message, and if they liked the sender than did those who only had prior memo or no contact at all. The findings of this study contrast Daft & Lengel’s (1984) assertion that e-mail communication is a fixed, lean medium and should be used only in cases where equivocality is perceived to be low. One reason for these results may be that prior, richer interactions, such as face-to-face and telephone contact help to establish rapport needed to build and maintain relationships, so that equivocality can be better managed through leaner mediums such as e-mail. As discussed above, e-mail communicators may have a tendency toward expecting a certain amount of equivocality within messages. Perhaps equivocality between e-mail users is perceived differently than equivocality between face-to-face and telephone communicators. Participants who had imagined only having had prior e-mail interactions may have the perception that the message is one of an equivocal nature, but this is what they have come to expect from e-mail messages. This study provides ample evidence that prior face-to-face, telephone, and e-mail communication lay the groundwork for future e-mail interaction, in aiding in equivocality reduction.

One interesting finding, inconsistent with other outcomes of this study, reveals that those who imagined prior face-to-face, telephone, and e-mail communication expressed more equivocality in their written responses to the sender of the e-mail message they reviewed. It is important to note that these same participants reported less perceived equivocality after reviewing the message, but when they responded to the message, they were found to have perceived more equivocality than those who had prior memo contact, or no contact at all. It could be that, until participants began writing out
their responses, they were not fully aware that they needed more information than was given in the e-mail. They may not have recognized the message as being very equivocal until they attempted to discuss it further with the sender. Considering the e-mail message was designed to be one of an equivocal nature, the next logical step for the recipient to take would be to reduce the level of perceived equivocality within it, so the results are not entirely surprising.

Another interesting discovery deals with participants’ substantively positive or negative reactions to the e-mail message. As reported in the results section, those respondents who imagined face-to-face, telephone, and e-mail communication prior to reading the e-mail message reported having more positive reactions toward the sender than did those who had imagined only prior memo contact or no contact at all. This finding points to the possibility that prior interactions, especially those of a richer variety, may aid in encouraging positive reactions in e-mail users. This study supports the assertion that prior richer interactions may lead to more positive reactions, while leaner interactions tend to lead to more negative reactions from participants.

**Implications**

These findings are of practical and theoretical importance to the field of media communication. Many of the outcomes of this study contradict Daft & Lengel’s (1984) assertion that e-mail is a fixed medium in which equivocality reduction is much more difficult than in those richer forms of communication. This study helps to expand the media richness theory, in that it explains e-mail communication as a form of interaction that varies in its ability to produce rich communication so as to aid in equivocality
reduction, depending on interactions prior to e-mail communication. In some cases, face-to-face communication may be the most appropriate choice for reducing equivocality, yet in many cases, as discussed within this study, prior richer interactions may be the springboard from which later e-mail interaction may be perceived as effective, especially in reducing equivocality between communicators.

As suggested in this study, face-to-face contact appears to provide people with important cues that aid in equivocality reduction. What we remember about our conversations with others, those images of others with whom we have talked previously may impact later interactions with them. Face-to-face communication appears to be the richest form of communication, and it may not to be limited in its ability to affect perceptions within e-mail communication, particularly in reducing equivocality.

Telephone interaction, though not as rich as face-to-face, has been shown to have the same capabilities as face-to-face interaction, this, too in its ability to carry over images of others into leaner mediums such as e-mail. As Daft & Lengel (1984) discuss, people rely on the voice qualities of others to provide important cues about each other. This study demonstrated that those who had imagined prior telephone contact with the sender of the message were more likely to perceive less equivocality within the message than those who had imagined prior e-mail or memo contact, or no contact at all. This suggests that, like face-to-face interactions, telephone communication may have a significant effect on our perceptions of equivocality, in particular, when engaged in later computer-mediated communication.

Those participants who imagined having had only prior e-mail interaction with the sender also considered the message to be less equivocal than those who had imagined
prior memo contact, or no contact at all. This is important for all of the reasons discussed above, but also because these respondents did not have the advantage of imagining nonverbal and verbal cues, such as those who imagined prior face-to-face and telephone contact. Despite this lack of prior, richer exposure, respondents reported that perceptions of equivocality were lower than those who had imagined leaner types of interactions. The study suggests that e-mail interaction in itself may have some of the same capabilities that face-to-face and telephone interaction have, in terms of reducing equivocality. It did not seem of great importance for many of the participants not to have had richer interactions in order to perceive low equivocality within the messages they were presented. This is important to the study of media richness, and other computer-mediated communication research, in that it expands our understanding of mediums from being fixed, to flexible, in their abilities to adapt to and respond to the variables presented in this paper.

As a contribution to computer-mediated-communication research, this study demonstrates how equivocality can be observed as a dependent variable. Other research has investigated equivocality as an independent variable, and has studied its impact on dependent variables (Lengel & Daft, 1988; Russ et al., 1990; Trevino et al., 1987). However, this study focused on the effects of prior interaction on the dependent variable, equivocality. This study helps expand understanding of the development of perceptions about equivocality when moderated by certain variables, particularly prior interactions.

Researchers may continue to use media richness theory as a basis for understanding rich versus lean media. However, the present study expands this theory by providing evidence that the various ways in which we communicate work in tandem with
each other so as to produce richer forms of communication within leaner media. This knowledge will allow researchers to go beyond media richness theory to explain other computer-mediated phenomena. A full discussion of this can be found in the future research section of this thesis.

Limitations

Limitations of this study primarily exist within the thought-experimental procedure used to gather data from participants. Essentially, this method incorporates self-report, in which case the real behavior of participants was not empirically observed. Participants were instructed to imagine that they had only prior face-to-face, telephone, e-mail, or memo contact, or no contact at all with the sender of the e-mail message they were asked to review. One immediate concern with this method is that the participant might recall a previous encounter with another person, and recall issues of perceived equivocality that arose from the conversation. These perceptions may have carried over into the present study, which may have skewed the participant’s responses. Therefore, they may have based their responses on a previous communicative situation, in which equivocality had already been deemed high or low.

Other participants may not have had the capacity to fully imagine a prior interaction, or lack of, and may have decided to answer questions at random. These participants in particular may have attempted to answer how they believed the researcher would have wanted them to, which may have affected the internal validity of the study. However, survey question numbers 16 and 17 were used as manipulation checks to counter the effects of the thought-experimental approach. Question 16 asked participants
if they thought the e-mail was typical of one they might receive, and question 17 asked if was fitting to the type of work they do. The majority of respondents answered “yes” to both questions, which indicates that they may not have had to imagine too far out of the realm within which they are used to working. This may be an indication that participants were able to approach the thought-experimental process authentically, as perhaps they do with typical e-mail messages they are used to receiving within the organization.

Another limitation is found within the sample used. Though the results are representative of people and organizations within the same type of staffing firms which were used in this study, results can not be generalized throughout the business community and general population as a whole. However, it is suggested that these results can be helpful to other organizations that use e-mail communication as a means of interacting. Considering that e-mail communication is fairly similar within all types of organizations, it is likely that the outcomes of this study can be used to benefit people within other types of organizations; the findings are most likely not unique to the staffing industry alone.

A possible limitation, which may have affected the generalizability of the research findings, is the number of participants in the study. Though 77 respondents participated in the study, it may have helped the external validity of the study if there had been more; ideally at least 100 participants. Also, the number of male and female respondents was highly uneven, which may have presented the study with another possible limitation. Approximately 95% of participants were female. This may have altered the outcomes, as research provides evidence that men and women tend to view some communication situations differently from one another. Females may have a tendency to judge others
more favorably, especially in face-to-face and telephone communication, in which nonverbal and relational cues are plentiful (Pearson, 1991). As past research indicates, females tend more often to the relational side of communication, while men tend to respond more so to content (Pearson, 1991). Perhaps the female participants imagined prior face-to-face and telephone conversations more favorably than how male respondents might have. If the female participants pictured prior interaction in which nonverbal and relational cues were perceived as positive, this may have affected their choices on the survey instrument, which would have greatly impacted the outcomes of this study.

Another possible limitation involves the fact that a portion of participants disagreed or strongly disagreed that the e-mail they reviewed was one that they might receive on a typical business day. Thirteen respondents disagreed with the statement, and 7 strongly disagreed. Though this group represents a smaller percent of the participants, this may have limited the current study somewhat. This group of participants may have viewed the e-mail as equivocal, not just because of the content of the e-mail, but also because it was perceived as very much unlike a message that they might receive on a typical business day. Because of this, these participants may have perceived the entire e-mail as being equivocal. This could have affected how they answered questions throughout the survey, and that may have altered results to some degree.

Finally, because the researcher was present while the participants responded to the survey questionnaire, this may have added to participants’ feelings of evaluation apprehension. On a few occasions participants asked the researcher what the goal of the study was, and if they were answering “correctly”. Though the researcher responded with
a noncommittal answer in all cases, her very presence may have affected the internal validity of the study.

**Future Research**

It is suggested that future research focus within the framework of media richness theory or other current computer-mediated theories when conducting investigations. An attempt should be made to randomly sample people within varying organizations in which the use of authentic e-mails can be reported on. This could increase generalizability, and add to the external validity of the study. As discussed previously, artificiality was used in the present study. Replications of this study should attempt to incorporate more empirical data to prevent the occurrence of such validity concerns. Also, experiments in which participants encounter face-to-face, telephone, e-mail, memo, or not contact at all with another could be used to establish cause and effect between prior interaction and the effects on perceived equivocality within later e-mail communication. Participants would experience communicating with someone with whom they meet only in a face-to-face encounter, or via telephone, e-mail, or memo. Another group of participants would not have had any contact at all prior to the e-mail message they received. After interaction had occurred, participants would be asked to read an e-mail message from the person with whom they communicated previously, and then fill out a survey questionnaire which asks questions about their perceptions of equivocality within the e-mail message.

Future research is needed in the area of studying the differences in perceptions of equivocality between women and men who use computer-mediated communication. As
Fiske & Taylor (1991) discuss, forming impressions of another is an activity in which cognitive and emotional processes are at work, and in which people must be involved with each other across a period of time. Cognitive and emotional processes differ from each other, in that cognitive processes tap into the thinking side of people, whereas emotional processes focus on the relational aspects of the interaction. This assertion is congruent with studies that provide evidence that men have a tendency to focus on the content of the conversation, whereas women tend to focus on the relationship. It would be interesting to speculate that differences between men and women might emerge in studies that focus on researching perceptions of equivocality between the two. If men are more likely to focus on the content of the conversation, (Pearson, 1991), do they also then have a tendency to measure perceptions of equivocality in terms of the content, primarily? If women have a tendency to focus on the relational aspects of interaction, (Pearson, 1991), will they have an increased tendency to measure perceptions of equivocality based on what relational qualities are perceived in communicating with others? Do women and men differ in their perceptions of equivocality? If so, in what ways do they differ?

A suggested method of researching this phenomenon would incorporate a factorial design, in which two groups of men and two groups of women are included. Each person from one group of women and each person from one group of men would be exposed to another person, either face-to-face or via telephone, in which that person focuses primarily on either content or relational aspects within communication. The other two groups of men and women would serve as control groups, in which no manipulation takes place. The groups would then interact via e-mail communication with the person to
whom they originally spoke, and then respond to a series of questions that would measure participants’ perceptions of equivocality.

Other suggested research involves computer-mediated communication in which the development of individual identity within groups is the focus. Computer-mediated research has suggested that members of organizations who work together as groups may find that e-mail communication is an effective choice in saving time, but more importantly in allowing less powerful members to discuss their thoughts more openly than they might in-face-to-face interactions (Kock, 1998). Are those people who are more likely not to share opinions and ideas in face-to-face and telephone meetings more likely to do so in e-mail interactions? How likely are these same people to become better oriented toward their organization’s identity when primarily engaged in e-mail interactions? One’s identity within the organization, the cognitive attachment a person has toward their organization, greatly impacts the way in which they communicate within the organization (Wiesenfeld et al., 1998). It is suggested that people need to share their subjective views such as opinions about the operating norms and the establishment of values within the organization. Developing shared meanings with others is dependent upon effective communication, which also leads to members feeling a sense of organizational identity (Wiesenfeld et al., 1998).

The moderating effects of relational variables such as power, status, and expertise on perceptions of equivocality should also be researched. Perceived differentials between sender and receiver should be investigated in order to uncover if and how these variables affect communication between interactants. How does one of less power, status and expertise perceive those with more power, status, and expertise, in particular within face-
to-face, telephone, e-mail, and memo communication? Do prior interactions, such as face-to-face or telephone communication alleviate perceptions of equivocality in later computer-mediated communication with those of differing power, status, and expertise? Are people with lower levels of power, status, and expertise more or less likely to perceive interactions with one of higher levels of power, status, and expertise as more or less equivocal if prior face-to-face communication has taken place? Do power, status, and expertise become less of an issue in regard to perceptions of equivocality if interaction begins first with e-mail communication, then evolves to using richer forms of media, such as face-to-face or telephone communication? In what ways does the hierarchical structure affect perceptions of equivocality among organizational members?

Furthermore, research suggests that it is more difficult to determine who has power and status in e-mail communication than in face-to-face and telephone communication because so many verbal and nonverbal cues are missing from e-mail interaction. It would be interesting to speculate that newer, less assertive members of organizations may use e-mail communication as a means of conveying their thoughts and feelings regarding organizational procedures, as well as to aid in defining their role within the organization. Future researchers may want to focus on the establishment of individual and group identity within organizations that use e-mail as a primary means of communicating, and compare those outcomes to organizations whose primary means of communicating are traditional face-to-face and telephone interactions.

Participants may first be measured on a scale that gauges their tendency toward aggression, assertiveness, passive aggressiveness, and passiveness. These groups of participants would be observed, across time, interacting on various levels; face-to-face,
telephone, e-mail and memo communication. Researchers will look for patterns to emerge amongst each group of participants. Do passive people have a tendency to become more aggressive when engaged in e-mail communication? Are people who engage in passive aggressive behavior more likely to use flaming as a source of communication?

Future research is also suggested in the area of discovering how other factors within interaction affect perceived equivocality between people. Particularly, how is equivocality within e-mail messages perceived by those who have had previous conflict situations in richer interactions? In particular, how do unresolved conflicts affect later e-mail communication? As this study demonstrates, prior, richer interactions may affect later perceptions of equivocality within e-mail communication. So, in situations where prior conflict has occurred, do perceptions of equivocality tend to increase, decrease or remain consistent, despite the conflict situation?

Another suggestion for future research deals with how perceptions of status and power affect the perceived equivocality within e-mail communication. Those richer interactions with people who are perceived to have more status and more power may affect the way in which we communicate with others, and how equivocality is perceived between e-mail communicators. In particular, do communicators tend to perceive more or less equivocality with others whom they believe are of a higher status, and who have more power than they do?

As reported in the results section, those respondents who imagined face-to-face, telephone, and e-mail communication prior to reading the e-mail message reported more positive reactions toward the sender than did those who had imagined only prior memo
contact or no contact at all. Future inquiries should attempt to address this phenomena more fully than what could be done in this study. What reasons can be attributed to why we tend to respond more positively to those with whom we have had prior, richer interactions? Do we need such cues as nonverbal behavior and voice qualities to distinguish between those toward whom we feel positively and those we do not? If so, how does this account for those participants who only imagined previous e-mail interactions, and whose responses were very similar to those who had imagined prior face-to-face and telephone interaction?

The work of linguist, Basil Bernstein (1964) discusses the difference between two codes in which people tend to use; elaborated and restricted. An elaborated code is one in which the speaker selects from a vast range of syntactic choices. In the case of an elaborated code, effort is required of the listener so as to make a precise assessment of the organizing scheme used by the speaker (Bernstein, 1964). When the speaker uses an elaborated code, it allows him or her to discuss his or her purpose, objective, and experiences through the use of words (Bernstein, 1964). It is through the use of expressed verbal form that the speaker communicates to another. Speech is thought out and well planned by the sender of the message in which elaborated codes are used.

Conversely, a speaker who is oriented toward using a restricted code will not use as many syntactic alternatives as one using elaborated codes, and prediction within restricted codes use is typically quite high (Bernstein, 1964). Vocabulary is taken from a limited range, as the use of restricted codes focuses on nonverbal communication as a main source of information transfer (Berstein, 1964). Restricted codes do not aid the speaker in verbally making known his or her distinct intent. The main function of a
restricted code rests in the highly predictable nature of the code. Prediction, according to Bernstein (1964) refers to "an ability of an observer who knows the code; both observers and speakers share the ability to make the same level of prediction" (p. 431). The more accustomed the speaker and receiver are toward a restricted code system, the better able they are to make accurate predictions about interactions between themselves.

It would be interesting to speculate that e-mail communicators are likely to orient toward restricted code use, primarily because of the fast-paced nature of e-mail. E-mail communication is an activity in which planning is limited, unlike the kind of planning used by people oriented toward elaborated codes. Future research may investigate the use of restricted and elaborated codes within e-mail communication. Are those oriented toward elaborated codes more likely to switch to restricted codes when interacting via e-mail? What differences emerge between those who use restricted codes and those oriented toward elaborated codes when engaged in computer-mediated communication?

Future research may also focus on cultural differences that may be apparent within e-mail communication. Hall's (1959) work differentiates high-context and low-context cultures' communication styles. High-context cultures use language to maintain harmony within the social realm, and communicators tend to look for meaning within the context in which the message was conveyed. This includes the nonverbal communication used, history of the relationship between sender and receiver, and social rules that operate between interactants (Hall, 1959). Low-context cultures use language mainly to express feelings, ideas, and thoughts as concisely and logically as possible (Hall, 1959). People from low-context cultures look for meaning in the spoken word (Hall, 1959). North
American cultures such as America and Canada can typically be viewed as low-context cultures, whereas Asian and Middle Eastern cultures tend to be viewed as high-context cultures. With this in mind, future investigators may want to focus on perceptions of equivocality between high and low context cultures when engaged in e-mail communication. Are perceptions of equivocality higher in low or high context cultures? What reasons can be attributed to the differences?

Research should extend beyond perceptions of equivocality within relational aspects of human communication, upon both of which this study focused. There are different substantive forms of equivocality which need consideration if researchers are to develop a deeper understanding of the role of equivocality within the organization. Multidimensional forces create equivocal situations, which may appear within different settings within the organization. An area in which perceptions of equivocality may surface occurs in board meetings, in which researchers may investigate perceptions of equivocality within the content of communication instead of emergent relational themes. According to Weick, (1995) "meetings are sensemakers" and are an ideal place to address perceptions of equivocality (p. 187).

If the present study is to be replicated, researchers should incorporate the use of field experiments to increase the external validity of their investigation. This might include gathering empirical evidence, such as recently sent e-mails, and monitoring e-mail messages received and replied to by the participant. Researchers will need to develop a coding scheme that measures perceived equivocality within messages, including face-to-face, telephone, e-mail, and memo interactions.
Conclusion

As Daft & Lengel (1984) reported, face-to-face and telephone communication are richer mediums that provide communicators with a variety of verbal and nonverbal cues that can greatly aid in perceptions of equivocality. E-mail and memo interaction are viewed as leaner forms of media in which communicators tend to have different perceptions of equivocality than those exposed only to leaner media. What occurs when communicators are exposed first to a richer form of interaction, then communicate within a leaner type of medium appears to alter the leaner medium’s ability to affect perceptions of equivocality. Perhaps media should not be termed as fixed, but flexible, in their abilities to modify perceptions of equivocality. To discover why this occurs in e-mail communication and not memo communication may bring us one step closer to understanding how perceptions change when prior, richer contact is made.

People tend to have varying perceptions of equivocality, and some may view it as something that comes with the territory. Therefore, some people adjust more easily to equivocality than others. Those communicators who interact mainly via e-mail may have more of a tolerance for equivocality than those who interact primarily face-to-face or by telephone. Those people who are accustomed to expecting equivocality within their choice of media may have developed ways to manage and compensate for it.

Furthermore, those who speak via e-mail without ever having had prior, richer interactions may still consider the medium as able to aid in equivocality reduction, even as effectively as face-to-face or telephone encounters tend to do. The present study gives support to the notion that those who have had only prior e-mail contact may perceive equivocality, similarly to those who had imagined prior, richer interactions.
The results of this study present important variables for communicators to consider when interacting with others. Our prior communication with others may aid in our understanding that perceptions of equivocality may be based more on interactions with others than once thought. It is important for communicators to know that equivocality reduction is possible within leaner media, such as e-mail communication.

Because of the expanding field of mediated communication, the outcomes within the present study should not go unrecognized. Computer-mediated communication is receiving a great deal of attention today, and is supported by a number of scholars. In particular, the role that each media plays within previous encounters, and how that affects later interactions should continue to be studied. If scholars want to increase understanding about how computer-mediated communication affects interpersonal and business communication, then investigating communicative acts between people is of great importance to understanding this phenomena.
APPENDIX A

Media Richness Measuring Instrument

Section I

Instructions: This section asks for basic information about you and your use of media. All information is confidential, and is used for statistical purposes only.

1. What is your job position?

Branch manager    Regional manager    Account manager    Recruiter
Executive VP of Operations    Other (please specify)______________________

2. How long have you worked with this staffing firm?

less than 1 year    1-3 years    4-6 years    7-10 years    more than 10 years

3. On average, how many business-related e-mails do you RECEIVE daily?

none    1-20    21-40    41-60    61-80    81-100    more than 100

4. On average, how many business-related e-mails do you SEND daily?

none    1-20    21-40    41-60    61-80    81-100    more than 100

Section II

Instructions: Below you will find an e-mail which you are asked to read. Think about yourself in the following scenario: Imagine that this e-mail is from someone with whom you have had only prior face-to-face contact. You have not communicated with this person through e-mail, telephone, or memo previously. Your previous face-to-face interaction with them led you to feel confident that they understood you and that you were able to understand their messages, too. This person just sent you the e-mail you will find below. After reading this e-mail you will be asked to respond to a few questions about your reactions.

E-mail message:

Hi there,

CBS is forming a new task force which is designed to come up with ways to increase work site employee retention. We would like to include one person from each region. Your name came up as someone who could bring expertise to this group--Please e-mail me to let me know if this is something you would be interested in doing.

Thanks for your help,

Chris/Account Manager
**Section III - Instructions:** Please read each statement and circle the appropriate response.
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85
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Thanks for your help,
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Media Richness Pretest Measuring Instrument

Section I

Instructions: This section asks for basic information about you and your use of media. All information is confidential, and is used for statistical purposes only.

1. What is your job position?
Branch manager  Regional manager  Account manager  Recruiter
Executive VP of Operations  Other (please specify)________________________

2. How long have you worked with this staffing firm?
less than 1 year  1-3 years  4-6 years  7-10 years  more than 10 years

3. On average, how many business-related e-mails do you RECEIVE daily?
none  1-20  21-40  41-60  61-80  81-100  more than 100

4. On average, how many business-related e-mails do you SEND daily?
none  1-20  21-40  41-60  61-80  81-100  more than 100

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