Don't Hang Up on the Telephone Yet!

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ABSTRACT

This paper discusses the effectiveness of different media from a social psychology perspective, and the implications on interactions in social groups and in organizations. In particular, we are interested in the social richness of the media—how effectively they convey the personalities and intentions of their users. We studied CMC (email and chat) and voice telephony, and compared them with face-to-face interaction. Study 1 was a controlled laboratory study in which people got acquainted with a partner. Study 2 was a field survey in which employees reported on naturally occurring interactions at work that took place with people of varying levels of power (supervisor, peer, subordinate). The surprising result is that the telephone generally came out on top in both studies, suggesting that the telephone may provide the optimum blend of richness and presence for natural and satisfying interactions.

Keywords: computer-mediated communication, telephone, impression management, power

INTRODUCTION

Recent technological developments have enabled people to communicate with each other in previously unimaginable ways. Each new technology has its advantages and disadvantages. For example, instant messaging is quick and efficient for brief interactions, but when discussions become complicated, people often find themselves abandoning the chat and picking up the phone. Thus, it is important to determine when a communication medium facilitates an interaction and when it hinders it.

To determine how communication media influence interpersonal interactions, it is necessary to probe into the social psychological attributes of human-to-human communication. Many researchers have compared various aspects of social interaction and communication across media [Finn, 1997 #84; Kiesler, 1992 #323; Lea, 1991 #331; Straus, 1997 #11]. The research has largely focused on multiparty interactions, such as small groups in organizations or larger public chat rooms. Studies have largely focused on interaction protocol, problem solving, efficiency, and understanding in different media, such as computer chat, email, and video and telephone conferencing. We are interested in one-on-one interactions in group and organizational contexts, and the social psychological components of perception and impression management in different media.

For example, when people are getting acquainted prior to working together or are already working together at different levels in organizations, it is important for their well-being to create the right impression on others and determine how sincerely others are behaving with them. A very common form of impression management is ingratiation, where a person behaves in a manner to be liked by another person [Jones, 1973 #634]. Ingratiation can take on many forms, such as verbally expressing flattery or agreement of opinion and nonverbally smiling or paying extra attention to someone. In the present study, we were interested in how people perceived their ability to behave naturally and intentionally in different communication media. In addition, we were interested in and how people perceived others as behaving naturally and intentionally in the different media.

This paper presents two quantitative studies of social psychological aspects of one-on-one interactions. The first study is a naturalistic laboratory experiment in which people got acquainted, prior to a group interaction, in one of three different media: face-to-face, telephone, and

computer chat. The second study is a field survey in which employees at a company reported on business interactions with supervisors, peers, and subordinates in three different media: face-to-face, telephone, and email. In this study, we were interested in whether the laboratory results of perceptions of behavioral intent would replicate, and whether supervisors and subordinates would react to the media differently.

How Do Communication Media Differ?

Media Richness

According to Daft and Lengel (1986), information richness is defined as:

> The ability of information to change understanding within a time interval. Communication transactions that can overcome different frames of reference or clarify ambiguous issues to change understanding in a timely manner are considered rich. Communications that require a long time to enable understanding or that cannot overcome different perspectives are lower in richness. In a sense, richness pertains to the learning capacity of a communication. (p. 560)

According to the theory, media richness is a function of: (1) the medium's capacity for immediate feedback; (2) the number of cues and channels available; (3) language variety; and (4) the degree to which attention is personally focused on the recipient, him/herself. In order of decreasing richness, the media classifications are: face-to-face (FTF), video, telephone, computer-mediated communication (CMC), addressed written communication, unaddressed written communication, and formal numeric text (see also Rice, 1992).

The current research focuses on the second component of media richness: the number of channels. The two studies described herein compare face-to-face (FTF), telephone, and computer-mediated communication (CMC)—implemented both as chat and email. In all cases, the interactions are consistent in language variety and personal focus in the sense that they are one-on-one interactions using natural language. They also consistently enable immediate feedback, except for the case of email. Thus, in this paper, richness refers principally to the context of how the number of communication channels affects social processes.

Social Presence

Social presence theory (Short et al., 1976) was developed in the context of telecommunications and describes a communication medium by the degree to which it conveys the physical presence of the communicating participants. Presence includes verbal cues, such as timing, pause, inflection, and nonverbal cues, such as facial expression, gaze, posture, and physical distance. Social presence is often measured by the "personalness" or "warmth" of the medium or by the appropriateness of its use for a particular task (Johansen, 1977; Reid, 1977; Rice, 1992). According to this theory, nonverbal cues play a significant role in social presence; therefore, people interacting in CMCs would be lower in presence than if they were interacting via telephone and people communicating via telephone would be lower in presence than if they were FTF. Thus, communication media vary in the extent to which they can transmit both a person's message and personal qualities.

How Might Impression Management Differ Across Communication Media?

Less rich media provide fewer communication channels and less social presence, potentially reducing both the pressure for people to ingratiate and the feedback they receive on ingratiation attempts. For example, a subordinate might not feel the power differences between him and his supervisor as strongly when talking to him on the telephone compared to in his office. At the same time, if he tries to flatter his supervisor on the phone, he may not be able to tell if the supervisor appreciated it or not. Communication media influence three psychological factors that contribute to impression management: self-awareness, inhibition, and responsiveness.

Self-awareness

People can be both publicly and privately self-aware (Buss, 1980; Carver & Scheier, 1981). When people are publicly self-aware, they are focused on how they appear to others and that often leads to a feeling of discomfort (Carver & Scheier, 1981). People become publicly self-aware when others are either looking at them or demonstratively ignoring them, or if they are somehow given feedback as to how they appear to others, for example by seeing themselves in a full-length mirror or by being recorded by a television camera (Davis & Franzoi, 1991).

When people are privately self-aware, they experience both an intensification of emotion (either positive or negative, depending on the context) and a deeper understanding of their internal thoughts and feelings (Buss, 1980). People become privately self-aware when their attention is directed inward, for instance through meditation, writing in a diary, or by seeing themselves in a small mirror—just enough of a glimpse to think of oneself without becoming publicly self-aware (Davis & Franzoi, 1991).

Chat and email programs have the feature that they scroll down a message as it is read or written, continuously keeping visible the most recent screen full of text. A consequence of continuous recording is that the computer screen acts, in effect, as a mirror, making oneself more salient during the interaction (Connell, Robins, & Mendelsohn, 1998). The "mirror effect" has direct implications on attentional focus in terms of self-awareness. The mirror effect, coupled with decreased

social presence of others in CMCs, may provide just enough of a glimpse of one's own behavior to become privately self-aware without becoming publicly self-aware. Some evidence exists to support this hypothesis. In an experiment involving group choice-dilemma discussions, CMC participants rated themselves as being more privately self-aware during the discussions than FTF participants (Matheson & Zanna, 1988).

Inhibition

Numerous studies show higher levels of uninhibited behavior in CMC, including increased intimacy and flaming (for reviews see Kiesler & Sproull, 1992; Matheson & Zanna, 1990; Walther & Burgoon, 1992; Kiesler, Siegel, & McGuire, 1984). Both self-awareness and media richness theory can be used in conjunction to predict that people self-regulate less, behave with less inhibition, and temper their opinions and beliefs less in CMCs. Studies of small group interactions in CMCs generate support for this proposition in the form of lack of conformity. Studies of small groups generally show a decrease in conformity in CMCs due to diminished normative pressure (see review by Bordia, 1997). For instance, Smilowitz and his colleagues (1988) found less conformity in their computerized replication of the Asch conformity study. Experimental studies also show that people tend to flame and self-disclose more in CMCs (Lea, O'Shea, Fung, & Spears, 1992; Walther & Burgoon, 1992). However, as Straus (1997) notes, the overall frequency of negative outbursts is not great in these studies, especially in simulated organizational contexts in which regulation would be expected to be higher than, say, in a teenage-dominated chat room.

Responsiveness

Influence and ingratiation depend on reading another's responses to see if one is having an impact on the other person and, if not, to vary one's approach (Jones & Wortman, 1973). Communicating feedback in response to a person's behavior is also referred to as "back-channeling." If the cues are missing or if the delay is too great, influencing and ingratiating attempts may have to turn from the subtle to the explicit or be abandoned altogether. For example, without any feedback on the success of ingratiation attempts, people may overshoot in less rich media, injecting more flowery praise into their verbal communications and failing to commit to a position for fear it may be the wrong one. On the other hand, if people are afraid of being misunderstood or found out, they may do away with ingratiation and verbalize their positions more directly. In any case, the lack of responsiveness from disembodied recipients makes behavior more difficult to regulate in the less rich media.

Summary

Two important aspects of communication media affect impression management: (1) with fewer incoming social cues, public self-awareness and the tendency to regulate one's own behavior are reduced, and (2) with fewer outgoing social cues, a person's ability to control how his/her behavior comes across to others is reduced. In other words, communication media affect people's behavioral intent. Less rich media allow people to express themselves with less inhibition, yet they impede people from expressing themselves as they intend to. As a result, it is difficult to predict whether people will behave more as they intend to because they are less inhibited, or whether they will report behaving less as they intend to because they are not able to express what they want to. In addition, whereas people are expected to act like themselves to a greater extent in less rich media, they might be less able to and therefore be less satisfied with their success at getting their message across to their interaction partners.

Studies and limitations paragraph?

STUDY 1: LABORATORY STUDY OF GETTING ACQUAINTED

Overview

The participants interacted in one of three conditions: face-to-face, telephone, or computer chat. Experimental sessions were conducted in groups of four. Each participant engaged in a dyadic "getting acquainted" conversation with each of the other three participants, as a predecessor to a group activity. After all three conversations had been completed, participants rated how they perceived both their own and their partners' behavioral intent (sincerity, intentionality, and satisfaction with behavior).

Participants

Two hundred and eighty undergraduate students participated to fulfill a course requirement; 120 participants (56% women) were in the face-to-face condition, 80 (59% women) were in the telephone condition, and 80 (61% women) were in the computer condition. Participants were recruited in groups of four. Sign-up sheets for the experiment specified that people volunteering for the same session should not be acquainted with one another.

Procedure

When participants arrived, they were instructed that they would get acquainted with each other, then participate in a group discussion, and that all discussions would be recorded. Once consent forms were collected, participants were randomly divided into pairs and each pair was taken to a separate room (for the face-to-face condition) or pair of rooms (for the telephone and computer conditions). In the face-to-face condition, the experimenter seated the participants in facing chairs and turned on a video camera to record the conversation. Participants were told that they

had five minutes to get acquainted and that they could talk about anything they wanted. Exactly five minutes later, the experimenter returned to the room and instructed them to stop. Participants repeated this procedure with a second and then a third partner. Then they completed ratings of intent, and so on, individually, for all three conversations. Finally, they participated in the group discussion.

In the computer-mediated condition, participants were seated in separate rooms, each with his or her own computer. Participants were instructed that anything they typed on the screen would appear on their partner's screen and vice versa; they were further instructed that, in each pair, one participant's computer had the "caps lock" key set to help them discern who was typing, as the text from both participants was sent to the same window.[1] The computer chat program was instantaneous and it allowed participants to interrupt each other and type simultaneously, similar to face-to-face and telephone conversations. In the computer condition, participants were given ten minutes to get acquainted rather than five. Consistent with previous studies on the two forms of communication (Bordia, 1997; Siegel et al., 1986) and our own pilot study, we found that it took approximately twice as long on the computer, compared to face-to-face, to communicate the same amount of material. Thus, to make the two conditions equivalent in terms of the acquaintance process, we allowed participants to interact twice as long in the computer condition. Participants were therefore told that they had ten minutes to get acquainted. In all other respects, they followed the same procedure as in the face-to-face condition.

Participants in the telephone condition were seated in separate rooms, each with his or her own telephone, and they communicated in pairs via telephone. The participants were instructed that as soon as they both picked up the telephone receivers, a connection would be made and they could begin conversing. Participants followed the same procedure as in the face-to-face condition.

Measures

Participants made three judgments about themselves—intentionality, sincerity, and satisfaction. The exact wording of the questions was: "To what extent did you act the way you intended to;" "To what extent did you act like yourself, the way you really are, with each of your conversation partners;" and "How satisfied are you with the way that you acted during each conversation?" Participants also made two judgments about their partners—intentionality and sincerity. The questions

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[1] During the discussion of the medium effects in the debriefing sessions, participants did not report any limitations from writing entirely in capital letters.

were: "To what extent did each of your partners appear to be acting the way he/she intended to;" and "To what extent did each of your partners appear to be acting sincerely, the way he/she really is?" All of the ratings were made on a 9-point scale, ranging from 1 "not at all" to 9 "very much."

Results

Figure 1 shows mean self and partner ratings of intentionality, sincerity, and satisfaction as a function of communication medium. To compare the ratings across the three media, we used the standard method for analysis of experimental designs in psychology—analyses of variance (ANOVA) [Keppel, 1989 #774]. We conducted ANOVA examining the effects of communication medium on the three dependent variables, separately for self and partner ratings (the dependent variables were averaged across the three conversations unless otherwise noted).

As Figure 1a shows, there was a fairly linear pattern of means across media for sincerity. People reported acting more like themselves via telephone, $F(1, 199) = 4.69$, $p < .01$, and computer chat, $F(1, 199) = 9.74$, $p < .01$ than face-to-face. However, people did not act significantly more like themselves in computer chats than in telephone conversations, $F(1, 159) < 1$. The same pattern held for partner ratings. People rated partners as acting more like themselves via telephone, $F(1, 199) = 4.67$, $p < .05$, and computer chat, $F(1, 199) = 6.68$ $p < .05$, than face-to-face. They did not rate partners as acting significantly more like themselves in computer chats than in telephone conversations, $F(1, 159) < 1$.

As Figure 1b shows, people reported behaving as they intended to most in telephone conversations. In particular, people behaved more as they intended to via telephone than face-to-face, $F(1, 199) = 6.52$, $p < .05$. Computer chats were not significantly different from either face-to-face or telephone. The pattern was the same for partners. People rated their partners as behaving more as they intended to via telephone than face-to-face, $F(1, 199) = 9.25$, $p < .01$, and computer chats were not significantly different from either face-to-face or telephone.

The pattern for satisfaction with behavior was similar to that found for intentionality. People were most satisfied with their behavior in telephone conversations. Specifically, people were more satisfied with their behavior in telephone conversations than in both face-to-face, $F(1, 199) = 9.82$, $p < .01$, and computer chat conversations, $F(1, 159) = 6.04$, $p < .05$.

Summary and Conclusions

People acted more like themselves in both telephone conversations and computer chats than face-to-face conversations. Theoretically, this occurred because less rich media allow people to express themselves with less inhibition. In contrast, participants acted more intentionally and were more satisfied with their behavior

in telephone conversations than both face-to-face and computer chat conversations. Theoretically, this can be explained as removing a certain amount of the nonverbal cues frees people from public pressures and allows them to act more as they intend to, but removing too many nonverbal cues actually impedes people's ability to act as they intend to. In other words, people are enabled to passively behave more like themselves in less rich media, but they are less able to actively behave as they intend to.

In sum, there is evidence that communication medium influenced people's attempts to manage their behavior. Counter to predictions derived from media richness and social presence theories, some of the patterns were not linear. Specifically, people reported being most intentional and satisfied with their behavior in telephone interactions. The most plausible explanation for this pattern is that telephone communications are rich enough to allow complex expression yet lean enough to reduce people's public self-awareness.

Of course, the generalizability of these results is limited by the situation and variables measured. More research needs to be conducted to fully test and explain these patterns of behavior. To begin with, do these patterns hold in real world situations? Much of HCI and CSCW research has focused on applying knowledge to workplace environments. Therefore, it is important to determine whether these results generalize to the workplace. To do this, we conducted a field study that addressed similar questions to the laboratory study. In addition, we added another variable that is relevant to the workplace—power levels of the employees.

STUDY 2: FIELD SURVEY

The field study was designed to examine the joint and interactive effects of communication medium and power among communicators in a real-world setting. The field survey was conducted in an organizational setting, where power relationships were salient, and tests two main questions: (1) do the findings from Study 1 replicate when on-going relationships exist and people communicate with each other about different things regularly in multiple media; and (2) does communication media have the same affect on the interpersonal behavior of high power individual as it does on lower power individuals?

Power was operationalized as a person's position in the organization relative to his or her interaction partner. In other words, people communicated with either a supervisor (partner is high power, self is low power), a peer (equal power), or a subordinate (partner is low power, self is high power). As the literature (Jones & Wortman, 1973; Rosenfeld et al., 1995) and everyday life suggest, low power people tend to ingratiate more than high and equal power people do. In addition, high and low power people are expected to react differently to different communication media. Specifically, because high power people are assumed already to have greater freedom to act like themselves, communication medium is predicted to influence low power people's behavior more.

Method

The field survey was conducted at a public utility company in the San Francisco Bay area and had a parallel design to the laboratory experiment. Similar to the laboratory experiment, participants interacted in one of three communication media: face-to-face, telephone, and computer. The computer condition was email, rather than chat, because employees in the organization regularly used email, but not chat, and we wanted to study naturally occurring conversations. A second variable, power, was added to the study by examining conversations with supervisors, peers, and subordinates. Because it was a survey and not an experiment, participants were asked to recall "the most recent significant interaction" with each of these people, i.e., a supervisor, a peer, and a subordinate. Participants rated the same facets of behavioral intent as in the laboratory study, plus two social behaviors—dominance and agreeableness.

Participants

Two hundred employees in the organization were asked to complete the survey, of which 142 responded. A total of 133 reported on interactions with supervisors, 142 reported on interactions with peers, and 93 reported on interactions with subordinates. Therefore, because of missing data, the total number of participants will vary in subsequent analyses, and will be lowest in tests involving ratings of subordinates. Sixty seven percent of the sample was male, 33% female. Sixty percent of the sample consisted of employees who were engineers, 23% senior engineers, 6% managers, 5% technical support, and 6% administrators.

Procedure

Participants were asked to anonymously report on their experiences during interactions with three different coworkers: a supervisor ("someone who assigns tasks to you, as a manager, project leader, mentor, etc."), a subordinate ("someone you assign tasks to, as a manager, project leader, mentor, etc. or someone who supports you") and a peer ("a colleague, whom you do not supervise and who does not supervise you"). Participants reported on either face-to-face, telephone, or email exchanges. They were asked to make sure that they initiated at least one of the conversations and that at least one of their conversation partners initiated one. The questions addressed their behaviors and intentions during the interactions, as well as their perceptions of the other's behaviors and intentions, without going into detail about the content of the conversations. Participants were told that their ratings would be confidential and would not be seen by any other employees. Participants had the

opportunity to enter themselves into a lottery to win a prize for filling out the survey.

Measures

Participants made exactly the same ratings of intentionality, sincerity, and satisfaction as in Study 1.

Results

Figure 2 shows mean self and partner ratings of intentionality, sincerity, and satisfaction as a function of communication medium. Means for all three variables were quite high, and were typically over 7.5 on a 9-point scale. These values are higher than for the getting-acquainted conversations, which used the same scale.

There were some differences in sincerity in different communication media. As shown in Figure 2a, on average, people and their partners reported that they behaved most like themselves in telephone conversations. Specifically, there was a trend for people to act like themselves more in telephone interactions than in email interactions, $F(1, 96) = 3.03$, $p < .10$. Face-to-face conversations were in between. Similar to self ratings, people described partners as acting significantly more like themselves via telephone than via email, $F(1, 9) = 4.75$, $p < .05$. They also tended to describe partners as acting more like themselves via telephone than face-to-face, $F(1, 99) = 3.53$, $p < .10$. In other words, the prediction that people act more like themselves as media richness decreases was only partially supported by the field study. Similar to the laboratory study, people on average behaved more like themselves in telephone conversations than face-to-face, but they acted least like themselves in computer-mediated conversations. There were no significant differences in how supervisors, peers, and subordinates rated the extent to which they and their partners acted like themselves.

Communication medium did not significantly impact whether people behaved as they intended to, although the pattern of means was similar to the laboratory experiment. Similarly, partner ratings of intentionality were also consistent with the findings from the laboratory study. In particular, people tended to rate partners, on average, as behaving more as they intended to in telephone interactions than face-to-face, $F(1, 99) = 3.57$, $p < .10$. Thus, the patterns for self and partner ratings of intentionality across communication media followed the same patterns as ratings of acting like self.

On average, people reported being marginally more satisfied with their behavior in telephone conversations than in email conversations, $F(1, 96) = 3.61$, $p < .10$, and face-to-face conversations were in between. In other words, the patterns of results were similar to the patterns in the laboratory study for telephone and computer-mediated conversations, but not for face-to-face conversations. Furthermore, consistent with expectations,

people were least satisfied in email interactions. There were no statistically significant differences between supervisors' and subordinates' satisfaction with behavior.

Summary and Conclusions

Similar to the laboratory study, employees generally acted most sincerely and intentionally and were most satisfied with their behavior in telephone conversations. The same pattern held for partners. Surprisingly, power did not make a difference. In other words, supervisors, peers, and subordinates showed the same patterns of behavioral intent across communication media. Again, the generalizability of these results is limited by the situation and variables measured. For example, it is well known that the type of task, such as information vs. emotional exchange, influences understanding and satisfaction in mediated communication [Straus, 1994 #190; Whittaker, 1997 #214]. The tasks in this study consisted primarily of information exchange between pairs of individuals in the workplace.

DISCUSSION

The current research addressed whether people actively manage impressions of themselves and perceive others differently in telephone and computer-mediated than in face-to-face communications. The research also examined whether laboratory findings on the effects of variation in communication media would generalize to a less controlled environment, where power differences are present.

The laboratory study (Study 1) showed that communication medium influenced people's attempts to manage their behavior. People reported being most intentional and satisfied with their behavior in telephone interactions. The patterns were similar for people in the field (Study 2), but the effects of media were only marginally significant. The fact that the patterns were similar at all is remarkable, considering that a number of other factors contributed to the behavior in the workplace. To name a few, employees were involved in on-going interactions, had varying levels of power, and had real life consequences to face as a result of the interactions. In addition, it is important to note that power differences did not influence the patterns across media. One explanation for the differences between the results in the lab and the filed is that two different forms of CMC were compared— email and chat. It is not clear how email and chat differ psychologically. Media Richness Theory differentiates the two media in terms of immediacy. How this influences the psychological aspects of an interaction would be an interesting area to pursue in future research.

The right blend of richness and presence

The telephone condition was included as an intermediary point along the richness and social presence continua between face-to-face and computer-mediated

communications. However, the results suggest that it ended up taking on a character of its own. Namely, ratings in telephone interactions were higher than ratings in face-to-face and computer-mediated interactions on intentionality and satisfaction. Although these data are not sufficient to suggest that that the telephone is necessarily better than face-to-face or CMC, they do encourage much more complex thinking about the qualities of different media than is commonly done.

For example, in the two situations presented here, the telephone's moderate richness and presence may have created a medium that inspired less inhibition than either of its fully rich or lean counterparts did. The results suggest that moderate presence of others allows one to relax just enough to feel comfortable, and uninhibited and moderate richness allows enough, but not too many, expressive cues to still manage impressions. In psychological terms, less public self-awareness coupled with expressive control and less leakage allows for somewhat uninhibited yet regulated behavior.

To examine how people perceived how naturally and intentionally they and their partners behaved, we asked participants to report on their perceptions of themselves and their partners during the interactions. It would also be important to collect more objective data, such as neutral third party observations and quantitative data on how frequently participants exhibited certain behaviors and discussed certain topics during the conversations. We are currently investigating these types of variables in a variety of situations.

Conclusion

The reported research has highlighted the benefits or the special qualities of the old-fashioned, familiar telephone. While much recent CSCW work has sought greater richness and presence through video, virtual worlds and telepresence, our work suggests that one must examine carefully the amount of richness that is appropriate to the context. The preference for the telephone in both laboratory and workplace experiments suggests that there is some generality to this result. But as for any behavioral study, we acknowledge that the results may be very different with changes to the context. For instance, intuitively face-to-face is preferred for "high-stakes" communication such as persuasion, negotiation and trust building. Most of the business interactions in our study were routine interactions between workers who already knew each other well, and the social interactions in the laboratory were between partners who did not have to interact with each other beyond the study. As Elena Rocco (1998) observed, trust needs to be built at first using a rich medium, but can then be sustained with poor media like email. Daft and Lengel also proposed that less rich media are appropriate for pedantic or un-nuanced communication. Even with these caveats, we believe our

results are surprising. Our criteria measured each medium's effectiveness to communicate personal traits from both sender's and receiver's perspective, which intuition would suggest would be much better served by face-to-face. And the results persisted in routine business interactions that are the norm rather than the exception, suggesting that the bulk of business communication may never require advanced media (beyond the telephone).

In current and future studies, we will explore the social context explicitly. The contexts include persuasion, negotiation, trust building, deception and creative work (group brainstorming). We are including media between the telephone and face-to-face, namely videoconferencing and telepresence. To provide true alternatives to face-to-face communications, we need to understand high-stakes contexts, and the effectiveness of various media in those situations.

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Figure 1.

Effects of Communication Medium on Intentionality, Sincerity, and Satisfaction (Study 1)
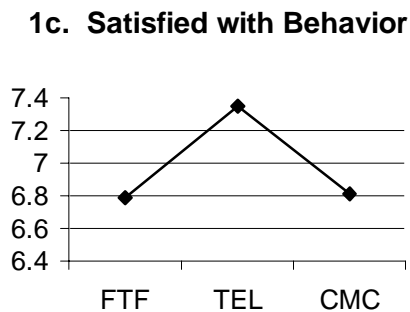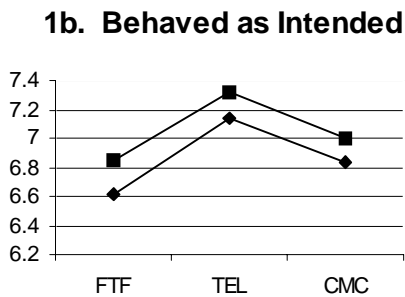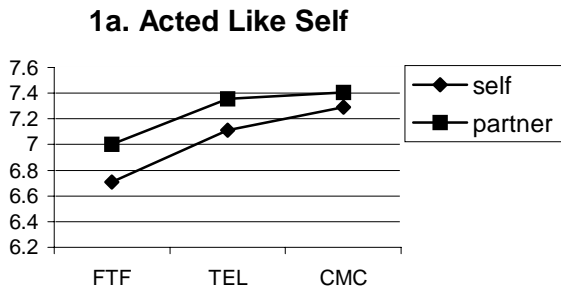
Figure 2.

Effects of Communication Medium on Intentionality, Sincerity, and Satisfaction (Study 2)

1a. Acted Like Self

2a. Acted Like Self

1b. Behaved as Intended

2b. Behaved as Intended

1c. Satisfied with Behavior

2c. Satisfied with Behavior