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Perceived Authority and Communication Channel

Experiments with Instant Messaging

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The effects of diminished social context cues in computer-mediated communication between students and instructors are examined using instant-messaging (IM) technology. Two experiments verified such effects, students perceived informal surroundings in IM and, in one experiment, decreased presence of the instructor, but results of hypothesized effects on the perceived authority of the instructor were mixed. Students did show more self-centered behavior in IM but experienced increased feelings of regulation.

Keywords: instant messaging; computer-mediated communication; CMC; social presence; authority; education

Introduction

Instant messaging (IM) is an increasingly popular feature of the Internet, particularly with younger people. IM is a synchronous text chat technology, with predominant messaging on a one-to-one basis. According to the Pew Internet & American Life Project Tracking Survey (2005), nearly two-thirds (62%) of young adult (18–27 year olds) Internet users have sent instant messages, and 20% do it on a typical day. Some organizations are beginning to use IM to add to or even substitute for e-mail for communication among employees on their jobs.

The use of IM in educational settings has not yet become integral in the relationship between instructor and student. Like e-mail before, it may take time before instructors feel comfortable interacting with students using IM. One reason for reluctance on the part of instructors may be an expectation of loss of authority in communication via IM. Therefore, this study compares IM to face-to-face (FTF) communication on students’ perceived authority of an instructor. Prior research has demonstrated the ability of computer-mediated communication (CMC) to improve teacher-to-class communication in certain contexts (Brown & Liedholm, 2004; Persell, 2004) but investigations have not yet focused on individual student-to-instructor relationships. We present here the results of two experiments with IM, the second a replication with adjustments based on the first study, with similar findings.
Literature Review

Instant Messaging

IM distinguishes itself from other text-based communication by users’ predominant messaging with known others in real time (Grinter & Palen, 2002). Like the phone, IM is based on a dyadic “call” model, so a sender must know the intended recipient’s IM account but still the call may or may not be “answered” (Nardi, Whittaker, & Bradner, 2000).

Most IM studies fall into two categories: relation-oriented research in the field of interpersonal communication and task-centered studies in organizational communication. For the former, research questions concern whether IM enhances or hinders friendship development (Grinter & Palen, 2002; Hancock & Dunham, 2001; Hu, Smith, Westbrook, & Wood, 2004; Parks & Floyd, 1996). Hu et al. found that IM promoted rather than hindered intimacy among college students. Grinter and Palen found that IM made social congregation easier than telephones among teens. For organizational communication, research topics focus on whether IM facilitates or retards workplace collaboration (Cameron & Webster, 2005; Grinter & Palen, 2002; Nardi et al., 2000). Nardi et al. found that IM supports flexible and expressive communication in the workplace. Cameron and Webster suggested that IM symbolized informality but was perceived to be less rich than FTF communication among employees.

Theories of Relationship Development

According to the theory of symbolic interactionism, “the symbolic cues conveyed by the medium itself are above and beyond the literal message” (Trevino, Daft, & Lengel, 1990). Although no medium is superior to another, certain media are more appropriate for demonstrating formality, while others support casual, nonauthoritative conversation (Cameron & Webster, 2005). Both social presence theory (Short, Williams, & Christie, 1976) and media richness theory (Daft & Lengel, 1984) propose that a reduction in nonverbal and physical cues in CMC should cause communication to be more impersonal and nonconforming than FTF communication. Schneider and colleagues (2002) found that participants in CMC focus groups produced fewer comments than those in FTF groups but that distribution of comments was more egalitarian than in FTF. Underhill and Olmsted (2003), however, found that the quality and quantity of communication was essentially the same in CMC and FTF groups. Further, varying the levels of social presence did not produce a significant change in information quality.

Two conflicting positions on relationship development have dominated popular and scholarly debate on CMC (Walther, Loh, & Granka, 2005). One is that the absence of nonverbal cues results in less sociable, relational, understandable, and effective communication (a cues-filtered-out perspective); the other is that people adapt to the medium by interpreting from contextual and stylistic cues, so normal or enhanced relational communication is allowed to grow (a social information-processing perspective). Scholars who believe in the social presence theory or media richness theory tend to conclude that CMC is a weak
medium through which to develop interpersonal relationships (Lindlof & Shatzer, 1998; Short et al., 1976; Trevino et al., 1990). Conversely, researchers who adopt the social information-processing perspective or the relationship-liberation model believe CMC can support real interpersonal relationships like FTF communication (Hu et al., 2004; Parks & Floyd, 1996; Walther & Burgoon, 1992).

CMC can alter the affective and relational patterns of communication due to the reduction and types of cues available to participants (Sproull & Kiesler, 1986, 1991; Tanis & Postmes, 2003; Walther & Burgoon, 1992). Sproull and Kiesler (1986) explained that communicators perceive the social context of a communication through both static and dynamic cues. Static cues originate from people’s presence and environmental surroundings, whereas dynamic cues sent by nonverbal behavior changes interaction by interaction. Once people perceive social context cues, these cues can create cognitive interpretations and even elicit behavioral changes. They found that when social context cues are strong, behavior tends to be more other-focused, differentiated, and controlled, whereas when cues are weak, people’s feelings of anonymity tend to stimulate more self-centered and unregulated behavior. That is, decreasing social context cues has substantial deregulating effects on communication.

**Theoretical Model and Hypotheses**

Most IM research involves peer or colleague relations but little is known about asymmetrical relations, such as the student–instructor relationship. Here we take a step to fill this gap: whether IM use between instructors and students will heighten or lower instructor’s authority. The present study references the theoretical framework developed by Sproull and Kiesler (1986) to examine how features of electronic messaging (in their case e-mail) are likely to diminish social context cues and to predict how reduced social context cues are likely to affect perceived authority which further elicits communication behavioral changes. Thus, an instructor’s perceived authority results from a two-step process: communication channels influence perceptions of social context, which in turn affects individuals’ perceived authority (Figure 1 summarizes the process).

**Social Context Cues**

**Instructor’s Presence**

Although an instructor’s hierarchical position is fixed, students’ perceived authority of him or her may vary under different situations. Social presence varies along a continuum, representing a communicator’s degree of awareness of the presence of an interaction partner. This is important for the process by which one person comes to know and think about other persons, their characteristics, qualities, and inner states (Short et al., 1976). For example, a student can easily observe his or her instructor nodding approval or frowning with displeasure in an FTF situation but not in IM. Thus, an instructor’s vivid presence in FTF
should reinforce students’ perceived authority. Conversely, an instructor’s weak presence in IM should seduce unregulated behavior.

**Surroundings**

The most immediate guide to perception is reading cues in the situation itself. When we enter an instructor’s office, his or her appearance and the surroundings evoke an image of the “office hours.” These cues are minimized in IM.

**Perceived Authority**

An individual’s authority is conveyed, in part, by nonverbal cues such as attire and surroundings. Research in many fields has explored this effect (Brase & Richmond, 2004). Sproull and Kiesler (1986) posited perceived authority as impacted by social context and a determinant of communication behavior.

**Communication Behavior**

In the present study, we theorized that perceived authority can change communication behavior in three ways: (1) focus of attention; (2) social orientation; (3) social conformity.
Focus of attention

When social cues are strong, communication behaviors tend to be other-focused; when social cues are weak, people’s feelings of invisibility tend to stimulate relatively self-centered behavior. Similarly, Suler (2004) noted that the absence of nonverbal cues in communication via text can alter self-boundaries. In an IM environment, students should focus more strongly on themselves and on what they want to say and less strongly on their instructor. Students in FTF group should care more about what their instructor thinks and says.

Social Orientation

Sproull and Kiesler (1986) hypothesize a status equalization effect under electronic messaging. If perceived authority is reduced, they predict that people are more likely to argue back, ask questions, or disclose themselves.

Social Conformity

Because reminders of the presence of other people are lacking in IM, social norms are weaker and communication behavior should thus be more unregulated or uncontrolled.

Our review of CMC literature, with particular attention to the model proposed by Sproull and Kiesler (1986), suggests the following hypotheses:

H1a: The perceived presence of the instructor in IM is weaker.
H1b: The perceived surroundings in IM are less formal.
H2: Student’s perceived authority of the instructor is lower in IM.
H3a: Students in IM focus more on themselves than on others.
H3b: Students in IM are more likely to argue back or disclose themselves.
H3c: Students in IM feel more unregulated/uncontrolled.

Method

We conducted two experiments to test the hypotheses. In both studies, an instructor had discussions with students assigned to one of two treatments, IM or FTF. The instructor is the same, whereas the students in the two studies are different. The participants are undergraduate students enrolled in speech courses at a small, private, university. Because the available pool of students was relatively small (<50), we sought to increase reliability by performing the experiment twice.1 Experiment 1 was conducted near the end of a semester, when students were quite familiar with the instructor. Experiment 2 was conducted at the beginning of another semester, when the students are still unfamiliar with him. With this approach the researchers could test whether or not familiarity with the instructor is an important factor in perceived authority.

Study Participants

The first study had 34 participants and the second had 44. Students in both had similar backgrounds in terms of age (mean of 20), gender (almost an even split), ethnicity (76%
White), and education level. Although a limitation for the generalizability of the study, the youthful participant pool is well suited to an investigation of IM because they are familiar with the technology. Novelty effects and disorientation are minimized in this way. Every student signed an IRB-approved consent form before participation, but they were not informed of the study’s purpose until they finished the experiment.2

Protocol

Study participants’ names were listed in alphabetic order and numbered. Names with odd numbers went to the FTF group and the names with the even numbers went to the IM group. The instructor had a 15-minute one-to-one discussion about the speech course and the students’ experience in it. Subjects in the FTF group had the discussion with the instructor in his office. Subjects in the IM group had the discussion via instant messaging, from whatever Internet outlet they chose to use, mostly at home.

Questionnaire

After each discussion, subjects took a survey designed to measure their perception of the instructor’s authority.3 We used multiple questions to measure each concept to increase the reliability of measurement since our operationalizations are based on self-reports. Each question was a statement. Participants were asked to express agreement or disagreement with each statement on a five-point Likert scale. Demographic questions appeared at the end of the questionnaire. The questionnaires are slightly different in the two experiments because we have adjusted the second questionnaire to better measure the concepts based on some unexpected findings (described below). However, the basic design and structure of the two questionnaires are the same. Confidentiality was guaranteed. By controlling extraneous factors (same instructor, homogeneous subjects, and random assignment to condition), the experimental design enables us to test the effects of media on students’ perceived authority of the instructor.

Each of the concepts, social presence, surroundings, perceived authority, focus of attention, social orientation, and social conformity had measures based on Likert agreement scales. For social presence, participants were asked to rate how close or distant the instructor seemed and his socioeconomic status. For surroundings, participants were asked if the setting was official, if they felt pressure to dress properly, and if the environment felt familiar. One item was used to measure perceived authority, “my instructor was authoritative.”4 To measure the focus of attention, participants were asked if the discussion was “helpful to me” and if they did well in it. In the second experiment they were also asked if the instructor responded to them quickly and if their own performance was “reflective,” “attentive,” and “responsive.” For social orientation, participants were asked a series of questions to tap how open they felt they could be with the instructor to ask questions (including “stupid” ones) and express themselves. For social conformity participants were asked if the instructor “controlled” the conversation or if they were “in control.” They were also asked if they felt the need to “behave properly” and if they felt interaction with the instructor was positive.
Results

Comparisons of Means

Because the sample sizes are relatively small (34 for experiment 1 and 44 for experiment 2), statistical power for $t$-tests is low and we have set a liberal alpha level (0.10). Table 1 presents the major findings of our mean comparisons. Dashes are used to indicate variables that were not included in the particular experiment. The variables are grouped by concept.

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<th>Table 1</th>
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<td>Mean Comparison between FTF and IM</td>
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*Independent sample $t$-test, $p < .10$; **independent sample $t$-test, $p < .05$. 
Social Context Cues

Social Presence

Experiment 1 yielded no significant differences on this concept but in experiment 2, the IM group perceived the instructor more “distant” than the FTF group and felt less “close” to him. The instructor’s perceived socioeconomic position was not significantly different. We find only partial support for H1a. Also, familiarity with the instructor may be an intervening variable, which we’ll address in the discussion.

Surroundings

In both experiments, the IM group found the surroundings significantly less official and more familiar. Students in the IM group did not feel they had to dress properly for the discussion. Students in the IM group felt significantly more relaxed than students in the FTF group. H1b was supported.

Perceived Authority

A direct measure for perceived authority is available for experiment 2 only (see note 4). Students in that experiment found the instructor significantly more authoritative in the IM condition. H2 was not supported. The significant effect ran opposite to our expectations and possible reasons for this are discussed below.

Communication Behavior

Focus of Attention

Hypothesis H3a predicted that IM participants focused more on themselves than on others. Some of the results shown in Table 1 support this premise. Students in the IM group tended to think the discussion was less helpful (significant only in experiment 1). Moreover, experiment 2 showed that the students in the IM group rated themselves significantly more “reflective,” “reactive,” and “attentive.” Furthermore, the students in the IM group were significantly less likely to agree that the instructor responded to them quickly (variable “respond”), which indicated a clue of self-centered tendency in this group. Hypothesis 3a found partial support.

Social Orientation

The questions designed to test hypothesis H3b did not yield significant differences in experiment 1 but did yield one significant finding in experiment 2, which rejects this hypothesis. Students in the FTF group were more likely to ask questions and openly express themselves, which suggested that the social orientation of their behavior was more towards equal status. This finding will be elaborated on below.

Social Conformity

In both experiments the variables “controlled” and “in control” produced significant differences but in the opposite direction of what was expected in H3c. The results indicate
that students feel more controlled in IM. In other words, the students tend to conform better to the instructor’s authority in the IM group.

**Future Communication Opportunities**

An interesting finding is that students in both groups prefer their own way of communication (see Table 2). We asked students what method they would prefer in future interactions with their professor. The majority of the FTF group chose “face to face,” while the majority of the IM group chose “instant messaging.” Similarly, when asked which format would make them feel more open most students in the FTF group chose FTF, while most students of the IM group chose IM. Chi-square tests showed that the two groups are significantly different in choosing future communication opportunities.

**Discussion**

According to our theoretical framework, IM would alter social context cues, diminish the instructor’s authority in the eyes of students, and lead to undesirable changes in their communication behavior. Only the first premise was clearly supported by the results: students did perceive less formality in the surroundings under IM and an increased distance between themselves and the instructor. This part paralleled previous scholars’ research on CMC (Sproull & Kiesler, 1986, 1991; Tanis & Postmes, 2003; Walther & Burgoon, 1992). Differences between FTF and IM for social context measures were more apparent in the second experiment than the first. Because the first experiment took place at the end of a semester students in that study may have formed impressions of the instructor that were more stable than those in the second experiment.

Although social context cues did change as we expected the result was not diminished perceived authority but, in fact, increased authority for the instructor (measured directly in experiment 2 only). Why would this be? The answer may be found by looking at the

| Table 2 |
|------------------|------------------|
|                  | Experiment 1     | Experiment 2     |
|                  | FTF   | IM   | FTF   | IM   |
| **Future Preference** |       |      |       |      |
| FTF               | 88.2  | 0    | 100.0 | 23.8 |
| IM                | 11.8  | 88.2 | 0     | 76.2 |
| Other             | 0     | 11.8 | 0     | 0    |
| **Chi-square**    | 21.50**|      | 25.84**|     |
| **More Open**     |       |      |       |      |
| FTF               | 88.2  | 11.8 | 75.0  | 23.5 |
| IM                | 5.9   | 70.6 | 25.0  | 76.5 |
| Other             | 5.9   | 17.6 | 0     | 0    |
| **Chi-square**    | 16.10**|      | 9.75**|      |

**Chi-square Test, p < .05.**
situation from the point of view of the students rather than the instructor. Our focus had been on how a loss of social context cues might diminish the instructor in the eyes of the students but the truth may be that social context cues and nonverbal behavior are actually more important to the students than the instructor. In an asymmetrical relationship, the subordinate party may rely on nonverbal communication to generate empathy from the dominate communicator. Stripped of this ability in IM all the students are left with is the reality of their situation, a position subordinate to the instructor who, to some degree, controls their fate.

Because the perceived authority hypothesis ran counter to our expectations it is not surprising that the hypotheses regarding communication behavior factors were also unsupported. The variables that did reach significance most often ran counter to our initial expectations. The one significant item under social orientation, freedom to ask “any question,” revealed that IM users were less likely to feel this way. They were also more likely to feel controlled and less likely to describe themselves as “in control” of the conversation (two items under social conformity). These results indicate that students in IM were behaving more as subordinates than the “status equal” hypothesis of CMC. This explanation is in line with previous research showing that CMC does not always liberate users from power differentials (Postmes, Spears, & Lea, 1998).

The results require a reconsideration of our findings concerning focus of attention. Although some items indicated self-centered tendencies (as hypothesized), it is possible these were really measures of increased self-consciousness rather than self-centeredness. Students may have been focused on themselves in CMC but only because they hoped to respond as they believed the instructor wished.

An interesting finding outside our hypotheses was that the two groups preferred their own communication medium at statistically significant levels. One explanation is the two communication media are equally convenient or make no difference to our subjects. Another alternative is that IM has the potential to complement FTF communication in the future. Although the FTF group did not choose IM as a future medium, it may be they had never instant messaged with their professors before.

Students using IM felt more relaxed but at the same time they perceived the instructor as more distant, more controlling, and less helpful. These results should not discourage the application of IM as an education tool, but should serve as a warning about the possible side effects of instructors attempting to substitute IM for office hours.

Notes

1. Some measures in the second experiment were altered based on a review of the first study.
2. The student-teacher discussions took place over several days so it is possible students could talk with each other but because the university was a commuter school significant contamination of the participant pool was considered unlikely.
3. Students in the FTF group filled out a printed survey and deposited it in the instructor’s locked mailbox. Students in the IM group received an electronic questionnaire via instant messaging at the end of the discussion. They printed it, filled it out, and dropped the questionnaires into the instructor’s mailbox.
4. This was the wording for the second experiment. In the first experiment the word “authoritarian” was used, which carried an unintended negative connotation. Results for that phrasing of the measure are not included.
References


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