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# Relational Communication in Computer-Mediated Interaction Revisited: A Comparison of Participant–Observer Perspectives

Artemio Ramirez Jr., Shuangyue Zhang, Cat McGrew,  
& Shu-Fang Lin

*Studies of online environments estimate that the majority of members in online forums do not contribute to ongoing discussions and only observe or “lurk” (e.g., Nonnecke & Preece, 2000). Despite the prevalence of this form of information acquisition, direct comparisons between the experiences of these “observers” (or “lurkers”) and active participants are lacking. The present research draws on previous research examining perceptual differences between participants and observers as well as social information processing theory (Walther, 1992) and reports on three studies examining such differences in computer-mediated communication (CMC). Study 1 examined the effects in the context of interpersonal interaction in synchronous CMC. Study 2 examined the effects in the context of group interaction in both synchronous and asynchronous CMC. Study 3 replicated and extended the results of the previous studies across two time periods. The overall results (a) support the presence of participant–observer differences in CMC, (b) show that the presence of anticipated future interaction moderates said differences, and (c) provide mixed evidence that participant and observer interpretations of relational messages converge over time.*

*Keywords: Social Information Processing Theory; Participant–Observer Effects; Relational Communication; Computer-Mediated Communication*

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Artemio Ramirez Jr. (PhD, University of Arizona) is an Assistant Professor in the School of Communication, Ohio State University, where Cat McGrew is a doctoral candidate. Shuangyue Zhang (PhD, Ohio State University) is an Assistant Professor of Communication at Sam Houston State University in Brownsville, Texas. Shu-Fang Lin (PhD, Ohio State University) is an Assistant Professor at National Chung Cheng University in Taiwan. An earlier version of this manuscript was presented at the Western States Communication Association 78th Annual Convention held February 17–20, 2007, in Seattle, WA during which it was awarded the Top Paper in the Interpersonal Interest Group. Correspondence to: Artemio Ramirez Jr., School of Communication, Ohio State University, 3143 Derby Hall, 150 Oval Mall, Columbus, OH 43210, USA. Tel: (614) 292-7016; E-mail: ramirez.85@osu.edu

The perspective issue revolves around the notion that actors' versus observers' experiences may not be the same. . . . When conversational participants judge their partners, a "mutual contingency" exists (Jones and Gerard 1967): The actor not only observes, but is also affected by, the target. A passive observer would not be so affected, and much conversational action is more salient to observers than to an actor (Jones and Nisbett, 1971). Actors' and observers' judgments may differ. (Walther, 1995, p. 190)

The experience of human beings has become more and more symbolically mediated, with new media and technologies at the forefront of this evolution (Berger, 2005). Berger (2005) posits that new technologies do not simply provide communicators with more channels, but potentially alter the way they conduct face-to-face (FtF) interactions. Indeed, communicators have increasingly appropriated computer-mediated channels, including e-mail and instant messaging (e.g., Hovick, Meyers, & Timmerman, 2003; Ishii, 2006), and online environments, such as dating and social networking sites (Ellison, Heino, & Gibbs, 2006; Gibbs, Ellison, & Heino, 2006), as means for pursuing relational goals including relationship development and maintenance (Baym, 2002). The impressive growth in popularity over the last decade of the use of computer-mediated communication (CMC) systems, especially text-based ones, for the pursuit of these and other relational goals has been accompanied by an equally impressive body of literature examining their effects on the nature of messages exchanged (see Walther & Parks, 2002, for a review). Early claims proclaiming CMC as inferior to FtF interaction and lacking in its capacity to foster social relations has given way to research documenting its ability to convey rich, multidimensional messages through text and potential for developing even "hyperpersonal" relations (e.g., Culnan & Markus, 1987; Walther, 1996). Overwhelmingly, this latter literature emphasizes the role of active participants in the message interpretation process (Ramirez, Walther, Burgoon, & Sunnafrank, 2002).

A major shortcoming of prior investigations on relational communication via CMC is its implicit assumption that the effects of messages exchanged are limited to the participants actively involved in the communication process. As Ramirez and colleagues (2002) note, "Passive observation is even more common in online communication forums, which are structured for group interaction, where groups may range in size from small to massive" (p. 221). Consider the fact that studies of online environments estimate that approximately between 2 and 20% of members actively contribute to ongoing discussions (e.g., Barnes, 2001; Nonnecke & Preece, 2000; Seabrook, 1997). The remaining members receive, read, and interpret the same message content made available to all members, but do not engage in interaction (i.e., "lurk"). Moreover, new members of online communities are typically advised to lurk for a period of time prior to contributing to discussions in order to develop a sense of the group's culture and norms (Preece, Nonnecke, & Andrews, 2004). New members' future decisions regarding whether to contribute or continue lurking are likely influenced by the nature of the messages exchanged and the interpretations assigned to them during this period of time. Beyond contributing to the larger discussion, impressions formed of active participants should also be influential in decisions to

contact members via private e-mail or other communication channels (Parks & Floyd, 1996).

Despite the prevalence of this form of information acquisition in CMC environments, direct comparisons between the experiences of these “observers” (or “lurkers”) and active participants are predominantly lacking (for exceptions, see Preece et al., 2004; Schlosser, 2005). Previous research assessing relational tone in these contexts has employed either participant-generated data (e.g., Walther & Burgoon, 1992; Walther, Slovacek, & Tidwell, 2001) or observer-generated data (e.g., Walther, 1995) but not both within the same study. Yet such an investigation would be important for theoretical and practical reasons. Theoretically, investigating potential participant–observer differences in CMC is relevant to advancing our understanding of both relational communication processes in general and the continued development of relationship formation perspectives via computer-mediated means in particular. Understanding potential differences in the interpretation of relational messages has added practical value. The ever-growing adoption of interactive technologies in education, business, and social contexts suggests the need for understanding intended as well as unintended social effects of their use. The present article reports the results of three such investigations.

Drawing upon prior research assessing participant–observer differences and social information processing theory (SIPT; Walther, 1992), the investigations reported in the present article provide a broad assessment of participant–observer perspectives in distinct forms. Study 1 examined the perspectives in the context of interpersonal interaction in a synchronous CMC environment. Study 2 examined participant–observer effects in the context of group interaction in both synchronous and asynchronous CMC. Study 3 replicated and extended Study 2 across two time periods. In each case, the anticipation of future interaction was varied in order to assess its effects on interpretations of relational messages from participant and observer perspectives.

### **Relational Communication, Perspectives, and CMC**

If relational communication is central to understanding the development of relationships via CMC (Walther & Parks, 2002), then the latter’s success or failure lies in the messages individuals exchange and the interpretations assigned to them. Prior research distinguishes two aspects of messages: content and relational (e.g., Bateson, 1958; Burgoon & Hale, 1984; Watzlawick, Beavin, & Jackson, 1967). The content aspect refers to the “ostensive topic of conversation,” whereas the relational aspect refers to the implied interpersonal relationship embedded in the verbal or nonverbal messages (Burgoon & Le Poire, 1999, p. 106). In other words, the relational aspect of message defines the interpersonal association between the parties involved and frames their interpretation of future judgments of “rapport, likeability, sincerity, power, and the like” (Burgoon & Le Poire, 1999, p. 107). The present set of studies propose that central to understanding the interpretations individuals assign to relational messages exchanged via CMC are the role a communicator assumes (active

participant vs. passive observer) and their motivation (anticipation of future interaction).

### *Participant–Observer Perspectives*

A significant factor influencing the interpretation of relational messages should be the role individuals assume in interaction. Accumulated research investigating participant–observer effects have been primarily conducted in FtF contexts and suggest differences between the two perspectives center on the intensity of message interpretations. Specifically, most studies comparing participant and observer perceptions report a “positivity bias” such that participants are more lenient and make more positive evaluations of others than do observers (see Kellermann, 1984, for a review). For example, studies under the rubric of the social meaning model contend that participants assign similar meanings to a given set of behaviors as observers of the same culture or subculture (e.g., Burgoon & Le Poire, 1999; Burgoon & Newton, 1991). In general, these studies report that participants and observers show great consistency in the *direction* of the relational message interpretations, but participants rate targets’ communication more positively (e.g., evidenced by greater intimacy, composure, informality, and equality as well as less dominance) than do observers. Recent research assessing members’ experiences in online communities reports similar findings. In one study examining lurking in online communities, Preece and colleagues (2004) found that participants evaluated their experiences in online communities more positively than did lurkers. Specifically, participants perceived more benefits to belonging to an online community and reported greater satisfaction with their experience in the community than did lurkers.

The different interpretations reported by participants and observers have been attributed to numerous sources (Jones & Nisbett, 1971; Monahan, 1995; also see Burgoon & Le Poire, 1999, for a review), although a detailed examination of each is beyond the scope of the present article. First, participants and observers engage in different attributional processes in the perception of people, messages, and events (Jones & Nisbett, 1971). Jones and Nisbett (1971) contend that participants and observers bring different information to bear on their inferences about people involved in the interactions, such that participants have more precise knowledge about their own emotional state and history; as coconstructors of the interaction, such knowledge should influence not only how participants perceive their own behavior but also that of partners. Indeed, Jones and Nisbett suggest that the distinct aspects of available information and the differential salience of such information should affect how participants and observers interpret people and messages.

Second, participants may have self-presentation concerns that are not present for observers (Monahan, 1995; Schlosser, 2005), thereby making the prior more susceptible to feedback offered by interaction partners. Participants typically enter initial interactions consciously or unconsciously pursuing affinity-seeking goals (Kellermann, 1984). Without such concerns, observers can evaluate targets with little concern for offending them since affinity-seeking is less relevant to them. Consistent with this line of reasoning, Monahan (1995) found that when self-presentational

concerns were made salient, participants displayed a positivity bias in assessing their partners. In an investigation of online forums, Schlosser (2005) reported similar findings in that members' negative opinions more strongly affected participants rather than lurkers (i.e., observers).

Third, the role differences between participants and observers may lead them to decode the same relational message differently (Burgoon & Newton, 1991; Street, 1985). Participants, unlike observers, may perceive themselves as members of a relationship or community (Preece et al., 2004). They may see more richness and subtlety in messages, making them more sensitive to the relational meaning of messages. In contrast, observers may focus more on the literal or content level of the messages than do participants. As a result, participant and observer judgments of communication behavior are likely to diverge.

Despite the fact that this body of research offers explanations for differences in participant and observer judgments rooted in FtF interaction, extant research examining relational communication in CMC, and as noted at the onset by Walther (1995), suggests the differences may extend to that context. As Ramirez et al. (2002) note in their discussion on social information seeking via CMC:

new developments in communication technology suggest the capacity to shift [traditional] active and passive information-gathering strategies into new forms, or tactics, that rely on the affordances these technologies provide (see also Burgoon, Bonito, Ramirez, Dunbar, Kam, & Fischer, 2002). The latter contexts shift the information source from the social network to the sociotechnical, electronic network. As they do so, the role of the information gatherer becomes one of the observer rather than the participant. (p. 221)

Although no study to date has experimentally examined participant–observer effects in CMC in the same study, distinct investigations have examined relational communication from each perspective. For example, Walther and Burgoon's (1992) often-cited study comparing relational communication in CMC and FtF groups over three time periods utilized participant self-report ratings of messages, whereas Walther (1995) employed observer ratings of the transcripts of CMC conversations and videotapes of FtF interactions gathered in the Walther and Burgoon study. A general comparison of the pattern of initial and terminal ratings reported in the CMC conditions of the two studies suggests some divergence between participant and observer perceptions of relational communication dimensions in CMC (see Table 1). Participant ratings of immediacy/affection (initial and terminal ratings), similarity/depth (initial and terminal ratings), social/task orientation (initial and terminal ratings), and receptivity/trust (terminal ratings) exceeded those of observers. Conversely, observer ratings of dominance (initial and terminal ratings) and composure (terminal ratings) exceeded those of participants. Although these comparisons are only suggestive and their statistical significance difficult to assess, they do suggest different interpretations between the two perspectives may arise in CMC.

In summary, previous studies comparing participant and observer perspectives suggest a consistent pattern should emerge in terms of how relational messages are

**Table 1** Participant (Walther & Burgoon, 1992) and Observer (Walther, 1995) Initial and Terminal Ratings of Relational Communication Dimensions via CMC

Dimension	Participant ratings		Observer ratings	
	Initial	Terminal	Initial	Terminal
Immediacy/Affection	<b>3.53 (0.57)</b>	<b>3.61 (0.64)</b>	<b>3.51 (0.58)</b>	<b>3.43 (0.67)</b>
Similarity/Depth	<b>3.29 (0.49)</b>	<b>3.38 (0.62)</b>	<b>3.18 (0.68)</b>	<b>3.13 (0.65)</b>
Composure	<b>3.61 (0.54)</b>	3.78 (0.50)	<b>3.76 (0.47)</b>	3.78 (0.48)
Formality	2.56 (0.61)	2.43 (0.64)	2.70 (0.77)	2.37 (0.65)
Dominance	<b>2.45 (0.56)</b>	<b>2.28 (0.59)</b>	<b>2.81 (0.92)</b>	<b>2.71 (0.73)</b>
Receptivity/Trust	3.75 (0.50)	<b>3.98 (0.46)</b>	3.75 (0.51)	<b>3.68 (0.54)</b>
Task/Social Orientation	<b>3.53 (0.67)</b>	<b>3.23 (0.70)</b>	<b>3.73 (0.65)</b>	<b>3.60 (0.66)</b>

interpreted. The different attribution processes involved, distinct self-presentational concerns, and general pattern of initial and terminal ratings from the Walther and Burgoon (1992) and Walther (1995) studies reported above lead to the expectation that participants would perceive messages more favorably than observers. In the present study that should emerge such that participants would perceive their target's communication as more intimate, more composed, more socially-oriented, more informal, and less dominant than would observers. Although the *direction* of their interpretation of relational messages should be the same (e.g., positive or negative), participant interpretations should exhibit greater *intensity* than those of observers. As a result, Hypothesis 1 proposes that:

- H1: Participants will assign more favorable meanings to relational messages of others than will observers (e.g., more intimate, more composed, more socially-oriented, more informal, and less dominant).

### *Social Information Processing Theory*

How the use of computer-mediated systems for social interaction influences the interpretation of relational messages is central to numerous CMC perspectives (see Walther & Parks, 2002, for a discussion). Most recent examinations of relational communication in CMC have been conceptualized according to social information processing theory (SIPT; Walther, 1992). SIPT highlights the role of distinct communication factors, including individual affiliative motives and temporal influences, in creating impersonal, interpersonal, or “hyperpersonal” interpretations of messages exchanged via CMC. The studies reported in this article draw upon these two characteristics of SIPT (affiliative motives and temporal influences) as important to understanding participant–observer effects in CMC.

According to Walther et al. (2001, p. 108), SIPT makes several assumptions regarding computer-mediated interaction including:

- (a) Communicators' affiliation motives induce them to develop impressions and relations despite hindrances that alternative media may impose. (b) Users adapt their efforts to present and acquire social information using whatever cue systems a medium provides. CMC users employ language, content, and timing to achieve

social goals. (c) Relational processes take time, and CMC is relatively slower than FtF. Thus, if time is restricted, social development is retarded. (Walther, 1992)

SIPT proposes that when time is limited, message exchange processes are curtailed and consequently, relationship formation is dampened, leading to the development of impersonal relations. Messages in these instances are expected to be interpreted as less personal, intimate, and warm than when time is unrestricted. In the latter case, messages are allowed to accrue in an unimpeded manner, allowing for the exchange of social information in a style similar to that occurring through FtF interaction and leading to the formation of relationships that approximate interpersonal levels. The extended period of time allows individuals to seek social information, which is then used to construct impressions of partners in a manner similar to that achieved through FtF. In other instances, the dynamics of unlimited time for message exchange and affiliative motives combine with features of the communication process (sender, receiver, channel, feedback) to produce interpretations of messages that exceed normative, interpersonal levels achieved through FtF interaction. These *hyperpersonal* interpretations lead to the creation of idealized impressions and heightened, inflated relationship expectations (Walther, 1996).

Empirical examinations of SIPT's conceptual framework have identified the anticipation of future interaction (AFI) as a potent influence upon individuals' affiliative motives (e.g., Gibbs et al., 2006; Ramirez, 2007; Walther, 1994). This research suggests the presence of AFI may be more important than the communication mode employed in the formation of positive relations. In an initial investigation into the role of AFI in CMC, Walther (1994) found that differences in AFI were a more potent predictor of intimacy levels in online workgroups than were differences in interaction formats used to complete tasks. Moreover, AFI appears to influence the message strategies individuals employ in interactions. When individuals anticipate continued contact via CMC, they use more interrogative and self-disclosure strategies as a means of acquiring social information relative to FtF interactions (Tidwell & Walther, 2002).

Research on SIPT reports AFI as a potent influential factor on interpretations of relational communication in CMC and suggests it should also emerge as such in the present study. Studies documenting the effect of AFI on the perceptions and behaviors of active participants provide evidence that its presence motivates increased information seeking and affiliative behavior (e.g., Ramirez, 2007; Walther & Burgoon, 1992). Participants in these studies who anticipated continued future contact with targets report more positive perceptions of relational messages than those who do not. Such findings are consistent with theories of relationship development which suggest that AFI should lead to increased information seeking when positive relational outcomes are predicted (Sunnafrank, 1986; Sunnafrank & Ramirez, 2004). For observers, the effect should be similar, except that the effect of AFI should be limited to their interpretations of the messages and obviously not their contributions to the discussion. The fact that observers would expect to be in the same virtual space with the target(s) again in the future and anticipate potentially



interacting with said target may lead them to pay closer attention to the messages exchanged, and—like participants—interpret them more positively relative to what they would otherwise. In addition, the social information gained by “lurking” also may be of use in a potential subsequent interaction with a target as an interpretive framework for assessing future contributions.

- H2: The presence of the anticipation of future interaction, relative to its absence, will lead to more positive interpretations of relational messages (e.g., more intimate, more composed, more socially-oriented, more informal, less dominant).

### Study 1

Study 1 examined participant–observer effects and the role of anticipated future interaction on interpretations of relational messages in synchronous CMC (e.g., chat). The study had two primary goals. First, this study assessed the extent to which previous findings on participant and observer roles were applicable to CMC. Second, it also examined whether previous findings on the effect of AFI on participant communication extend to the relational message interpretations of observers. It was expected that participants would evaluate relational messages more positively than would observers (Hypothesis 1). The presence of AFI was predicted to yield more positive evaluations of relational messages than would its absence (Hypothesis 2). Study 1 examined these predictions in the context of interpersonal online interaction.

#### Method

*Participants and procedures.* Study participants ( $N=144$ ; 72 participants, 72 observers) were recruited from undergraduate communication classes and received extra credit in exchange for their participation. Participants reported an average age of 22.32 years ( $SD=3.85$ ) and were predominantly White/Caucasian (85%).

Upon consenting to participate in the study, individuals completed a consent form and were provided with a handout describing the nature of the study. Prior to the interaction, participants and observers were randomly assigned to partners and, in turn, all assignments were randomly assigned to conditions. Participants were required to log into the conferencing system used for the study from remote campus locations at their selected time. Upon logging in, they were directed to a webpage that provided instructions on how the interactions would be conducted, informed them of their role (participate or observe the interaction), and furnished with five questions or statements to use in the discussion.<sup>1</sup> They were also informed that they would be allowed as much time as needed to complete the interaction. Consistent with Walther’s (1994) AFI condition, one-half of the participants were informed that they would continue to interact with their partner beyond the initial task. Participants were informed that the study involved completing a series of tasks in close collaboration with a partner with whom they would be paired with throughout the duration of the study; in reality, they collaborated only that required to complete

the present study. Participants then selected a link that “transported” them in a private chatroom to conduct their interaction.

Similar procedures were employed for observers (e.g., instructions, assignment to conditions, etc.). Observers were also required to log into the conferencing system and provided with the same instructions as participants. Observers assigned to the AFI condition were instructed that they would be conducting a subsequent interaction with one of the participants identified by the researchers prior to the study. When ready, observers entered their assigned chatroom to “watch” the interaction.<sup>2</sup> After the interaction was completed, participants and observers completed web-based postinteraction measures and were directed to a link which contained debriefing information and thanked them for their participation.

*Postinteraction measures.* Relational messages were assessed with the Relational Communication Scale (RCS; Burgoon & Hale, 1987; Walther & Burgoon, 1992), a multidimensional, Likert-type measure utilized extensively in previous studies examining relational communication in both CMC and FtF interaction. The instructions ask respondents to record their interpretation of their partner’s communication behavior on a series of items, each accompanied by a 7-point scale (7 = “strongly agree”). The present study employed five of the dimensions commonly assessed in previous studies (e.g., Walther & Burgoon, 1992; Walther, 1994; Walther et al., 2001):

- *Intimacy* (for participants,  $\alpha = .93$ ; for observers,  $\alpha = .90$ ) was measured with 12 items representing the subdimensions of immediacy, receptivity, and trust.
- *Social orientation* (for participants,  $\alpha = .87$ ; for observers,  $\alpha = .88$ ) was measured with 4 items.
- *Dominance* (for participants,  $\alpha = .83$ ; for observers,  $\alpha = .86$ ) was assessed with 5 items.
- *Composure* (for participants,  $\alpha = .84$ ; for observers,  $\alpha = .84$ ) was assessed with 4 items.
- *Informality* (for participants,  $\alpha = .80$ ; for observers,  $\alpha = .85$ ) was measured with 4 items.

In order to assess the success of the AFI manipulation, respondents completed a single-item manipulation check (“What is the likelihood that you will interact with your partner again in the near future?”) on a 7-point Likert-type scale (1 = “not at all likely”; 7 = “very likely”).

## Results

### *Manipulation Check*

The AFI manipulation was examined through a 2 (role: participant vs. observer)  $\times$  2 (AFI vs. no AFI) mixed model analysis of variance (ANOVA), with role as a repeated factor and AFI as a between-subjects factor. A main effect for AFI was detected,  $F(1, 71) = 93.57$ ,  $p < .001$ ,  $\eta^2 = .57$ , and showed the manipulation was successful.

Individuals in the AFI condition ( $M = 5.69$ ,  $SD = 1.10$ ) reported a higher expectation of future contact relative to those in the no AFI condition ( $M = 2.87$ ,  $SD = 1.36$ ).

### Hypothesis Tests

Hypothesis 1 predicted that participants would report more positive assessments of relational communication than would observers. Hypothesis 2 predicted that the presence of the AFI would result in more positive relational communication than would its absence. Both predictions were examined with a series of  $2 \times 2$  mixed model ANOVAs with role (participant vs. observer) as a within-subjects factor, AFI (AFI vs. no AFI) as a between-subjects factor, and each of the five dimensions (intimacy, social orientation, dominance, informality, and composure) serving as dependent variables. The results are presented according to each dimension. Descriptive statistics are presented in Table 2.

*Intimacy.* As predicted in Hypotheses 1 and 2, the ANOVA associated with intimacy revealed significant main effects for role,  $F(1, 70) = 9.00$ ,  $p < .005$ ,  $\eta^2 = .11$ , and AFI,  $F(1, 70) = 48.81$ ,  $p < .001$ ,  $\eta^2 = .41$ . However, they were tempered by a significant two-way AFI by role interaction,  $F(1, 70) = 36.43$ ,  $p < .001$ ,  $\eta^2 = .34$ . Post hoc tests indicated that participants ( $M = 5.44$ ,  $SD = 0.39$ ) reported significantly greater intimacy than did observers ( $M = 4.69$ ,  $SD = 0.56$ ) under conditions of AFI,  $t(35) = 6.50$ ,  $p < .001$ , whereas they reported comparable levels under conditions of no AFI (participants:  $M = 4.20$ ,  $SD = 0.50$ , observers:  $M = 4.46$ ,  $SD = 0.76$ ),  $t(35) = 1.69$ ,  $p > .05$ . Due to the interaction, only the main effect for AFI was interpretable. Table 2 shows that the AFI condition reported greater intimacy than did the no AFI condition.

*Social orientation.* Only Hypothesis 1 received support on the social orientation dimension. The univariate analysis showed a significant main effect for role,  $F(1, 70) = 4.37$ ,  $p < .05$ ,  $\eta^2 = .06$ , was accompanied by a significant two-way AFI by role interaction,  $F(1, 70) = 9.63$ ,  $p < .005$ ,  $\eta^2 = .12$ . Once more, post hoc tests revealed

**Table 2** Means (and Standard Deviations) for Relational Communication Dimensions by Role and Anticipated Future Interaction (AFI) condition for Study 1

Dimension	Role		AFI	
	Participant ( $n = 72$ )	Observer ( $n = 72$ )	Present ( $n = 36$ dyads)	Absent ( $n = 36$ dyads)
Intimacy	4.82 (0.77)	4.57 (0.67)	5.07 (0.48)	4.33 (0.63)
Social orientation	3.83 (1.08)	3.49 (1.25)	3.82 (1.19)	3.50 (1.04)
Dominance	2.75 (0.86)	3.19 (1.03)	3.22 (0.92)	2.72 (0.90)
Informality	5.40 (1.31)	4.27 (1.02)	4.71 (1.15)	5.42 (1.07)
Composure	4.42 (0.72)	4.09 (0.49)	4.33 (0.65)	4.18 (0.54)

*Note.* Higher means indicate greater levels of each dimension. With the exception of the columns under “Role,” the sample sizes reported for each column indicate the number of participant–observer dyads in that condition used in the analyses.

that participants ( $M = 4.25$ ,  $SD = 0.90$ ) reported significantly greater social orientation than did observers ( $M = 3.40$ ,  $SD = 1.48$ ) under conditions of AFI,  $t(35) = 2.90$ ,  $p < .01$ , but that their reported levels did not differ under conditions of no AFI (participants:  $M = 3.42$ ,  $SD = 1.10$ ; observers:  $M = 3.58$ ,  $SD = 0.99$ ),  $t(35) = 0.67$ ,  $p > .05$ .

*Dominance.* This dimension was coded such that higher scores indicate perceptions of greater dominance. The ANOVA conducted on dominance detected a main effect for role,  $F(1, 70) = 6.48$ ,  $p < .05$ ,  $\eta^2 = .09$ . Consistent with Hypothesis 1, participants reported less dominance than did observers (see Table 2). A main effect for AFI,  $F(1, 70) = 13.91$ ,  $p < .001$ ,  $\eta^2 = .17$ , also emerged. However, contrary to Hypothesis 2, less dominance was reported in the no AFI condition rather than the AFI condition. Thus, only Hypothesis 1 was supported.

*Informality.* The ANOVA conducted on informality revealed two significant main effects. First, a significant main effect for role,  $F(1, 70) = 17.84$ ,  $p < .001$ ,  $\eta^2 = .20$ , provided support for Hypothesis 1. Table 2 indicates that participants reported greater informality than did observers. Second, a significant main effect for AFI,  $F(1, 70) = 11.26$ ,  $p = .001$ ,  $\eta^2 = .14$ , emerged counter to Hypothesis 2, and showed that greater informality was reported by the no AFI condition than by the AFI condition. Once more, only Hypothesis 1 was supported.

*Composure.* The univariate analysis conducted on composure detected a significant main effect for role,  $F(1, 70) = 9.49$ ,  $p < .005$ ,  $\eta^2 = .12$ , which was overridden by a significant two-way AFI by role interaction,  $F(1, 70) = 4.55$ ,  $p < .05$ ,  $\eta^2 = .06$ . Post hoc tests indicated that when AFI was present, participants' ( $M = 4.60$ ,  $SD = 0.79$ ) reported significantly greater composure than did observers' ( $M = 4.05$ ,  $SD = 0.50$ ),  $t(35) = 3.48$ ,  $p < .001$ . However, when AFI was absent (no AFI), comparable levels of composure were reported by both participants ( $M = 4.23$ ,  $SD = 0.60$ ) and observers ( $M = 4.13$ ,  $SD = 0.49$ ),  $t(35) = 0.77$ ,  $p > .05$ . Irrespective of AFI condition, however, participants reported greater composure than did observers (see Table 2). The overall results support Hypothesis 1 but not Hypothesis 2.

### Discussion

The overall results provide support for the predictions: The role individuals assume in a computer-mediated discussion and the extent to which they expect future interaction with a target significantly affected perceptions of relational messages. Participating in, rather than observing, a discussion produced more positive ratings of targets' relational communication. Participants reported greater intimacy, social orientation, composure, and informality as well as less dominance than observers, although AFI moderated the effect on the initial three dimensions. Thus, the positivity bias reported in previous studies examining participant and observer effects in FtF also emerged in the present study on CMC.

The findings of the present study also indicate AFI emerged as a significant factor in the interpretation of relational messages. Anticipating future contact with a target was linked to perceptions of greater intimacy and dominance, with the latter finding surfacing counter to expectations. Moreover, the emergence of significant interactions

with role on intimacy, social orientation, and composure suggest that participant and observer perceptions varied significantly as a consequence of the presence of AFI. Participants who expected continued contact into the future with the target reported the most positive interpretations of each dimension.

Despite the consistency of the reported effects with prior investigations in FtF, in terms of participant–observer effects, it remains unclear whether the current findings generalize to group environments. That is, although the present study was conducted in the context of interpersonal interaction, most passive social information acquisition occurs in group environments (see Ramirez et al., 2002, for a discussion). Moreover, these discussions occur through both synchronous (e.g., chats) and asynchronous (e.g., e-mail-like discussions) formats. A second study was conducted to address these issues.

## Study 2

Study 2 replicated and extended the results of the previous study by examining participant–observer effects in both synchronous and asynchronous computer-mediated interaction in group contexts. Consistent with Study 1, it was expected that participants would assign more favorable meanings to relational messages than would observers (e.g., more intimate, more composed, more socially-oriented, more informal, and less dominant). The presence of AFI was also predicted to yield more positive evaluations of relational messages than would its absence (Hypothesis 2). No prediction was set forth for the effect of synchronicity (synchronous vs. asynchronous environments) on relational message interpretations and thus left as a research question (Research Question 1).

### Method

*Participants and procedures.* Participants ( $N = 262$ ; 131 participants, 131 observers) for Study 2 were recruited from undergraduate communication classes and offered extra credit in exchange for their participation. Participants reported an average age of 22.32 years ( $SD = 3.85$ ) and were primarily White/Caucasian (87%). The study followed the same procedures (e.g., assignments to roles, instructions, etc.) as those used in Study 1, with the exceptions noted below.

All discussions occurred within the context of groups comprised of 3–5 members with an observer assigned to each group. Discussions occurred through a web-based computer conferencing system, which allowed for synchronous as well as asynchronous interaction. One-half of the discussions were conducted via *synchronous CMC* and mirrored those conducted in Study 1. Study participants (participants and observers) assigned to this condition signed up for an available time period, were instructed to log into the conferencing system, and were told to enter an assigned chatroom at their selected time to participate in the study. The remaining discussions were conducted via *asynchronous CMC* that employed a discussion board that allowed group participants to read and post messages at any time. Members could log in and view messages from a discussion board assigned (and accessible only) to their

group. Participants were allowed two weeks to complete their discussions and required to complete postinteraction measures immediately after completing the discussion.<sup>3</sup>

*Postinteraction measures.* Relational communication was measured as in Study 1 via the RCS (Burgoon & Hale, 1987; Walther & Burgoon, 1992). The following reliabilities (Cronbach's alpha) were observed for each factor: intimacy (for participants,  $\alpha = .94$ ; for observers,  $\alpha = .91$ ), social orientation (for participants,  $\alpha = .86$ ; for observers,  $\alpha = .86$ ), dominance (for participants,  $\alpha = .89$ ; for observers,  $\alpha = .89$ ), composure (for participants,  $\alpha = .83$ ; for observers,  $\alpha = .80$ ), and informality (for participants,  $\alpha = .82$ ; for observers,  $\alpha = .82$ ).

## Results

### Manipulation Check

The AFI manipulation was examined through a 2 (role: participant vs. observer)  $\times$  2 (AFI vs. no AFI)  $\times$  2 (synchronous vs. asynchronous format) mixed model ANOVA, with role as a repeated factor and AFI and format as between-subjects factors.<sup>4</sup> The results indicated that manipulation was successful,  $F(1, 130) = 119.18, p < .001, \eta^2 = .48$ . Individuals in the AFI condition ( $M = 5.24, SD = 1.03$ ) reported a higher expectation of future contact relative to those in the no AFI condition ( $M = 3.09, SD = 1.21$ ).

### Hypothesis Tests

The two predictions and research question were assessed through a series of 2  $\times$  2  $\times$  2 mixed model ANOVAs with role as a within-subjects factor, AFI and communication format as between-subjects factors, and each of the dimensions of relational communication used in Study 1 (intimacy, social orientation, dominance, informality, and composure) serving as dependent variables. Table 3 reports relevant descriptive statistics.

*Intimacy.* Hypothesis 1 received qualified support. Analysis of the intimacy dimension detected a main effect for role,  $F(1, 127) = 89.92, p < .001, \eta^2 = .41$ . This was overridden by a two-way role by format interaction,  $F(1, 127) = 3.99, p < .05, \eta^2 = .04$ . The results of post hoc tests indicated that whereas participant ( $M = 4.77, SD = 0.81$ ) and observer ( $M = 4.27, SD = 0.86$ ) ratings of intimacy differed significantly when the discussions occurred using the asynchronous format,  $t(64) = 2.51, p < .05$ , they reported comparable ratings when the discussions occurred using the synchronous format (participant:  $M = 4.77, SD = 0.84$ ; observer:  $M = 4.44, SD = 0.89$ ),  $t(65) = 1.60, p > .05$ .

A main effect also emerged for AFI,  $F(1, 127) = 74.58, p < .001, \eta^2 = .37$ . Consistent with the prediction set forth in Hypothesis 2, the AFI condition reported greater intimacy than did the no AFI condition (see Table 3). Thus, Hypothesis 2 was supported.

**Table 3** Means (and Standard Deviations) for Relational Communication Dimensions by Role, Anticipated Future Interaction (AFI) condition, and Communication Format for Study 2

Dimension	Role		AFI		Format	
	Participant ( <i>n</i> = 131)	Observer ( <i>n</i> = 131)	Present ( <i>n</i> = 67 dyads)	Absent ( <i>n</i> = 64 dyads)	Synchronous	Asynchronous
Intimacy	4.77 (0.82)	4.36 (0.88)	5.03 (0.62)	4.57 (0.78)	4.60 (0.86)	4.53 (0.83)
Social orientation	5.88 (1.02)	5.64 (1.16)	6.11 (0.73)	5.39 (1.26)	5.77 (1.03)	5.74 (1.13)
Dominance	3.96 (0.87)	3.59 (1.00)	3.81 (0.92)	3.74 (0.94)	3.76 (0.93)	3.79 (0.94)
Informality	4.42 (1.11)	4.28 (1.13)	4.51 (1.02)	4.18 (1.18)	4.55 (1.13)	4.15 (1.07)
Composure	5.56 (0.93)	5.43 (0.89)	5.74 (0.84)	5.24 (0.91)	5.52 (0.90)	5.47 (0.92)

*Note.* Higher means indicate greater levels of each dimension. With the exception of the columns under “Role,” the sample sizes reported for each column indicate the number of participant–observer dyads in that condition used in the analyses.

*Social orientation.* The analysis of social orientation also provided qualified support for Hypothesis 1. The ANOVA results revealed the expected main effect for role,  $F(1, 127) = 5.00, p < .05, \eta^2 = .04$ . This main effect was tempered by a significant two-way role by format interaction,  $F(1, 127) = 5.40, p < .05, \eta^2 = .05$ . Post hoc tests showed that when the discussions occurred via the asynchronous format, participants ( $M = 6.00, SD = 1.03$ ) reported higher ratings of social orientation than did observers ( $M = 5.49, SD = 1.24$ ),  $t(64) = 1.88, p < .05$ . However, when the discussions occurred via the synchronous format, participant ( $M = 5.76, SD = 1.00$ ) and observer ( $M = 5.78, SD = 1.07$ ) ratings did not differ significantly,  $t(65) = 0.08, p > .05$ .

Hypothesis 2 was supported. A main effect for AFI,  $F(1, 127) = 28.87, p < .001, \eta^2 = .19$ , also emerged and showed that the AFI condition reported greater social orientation than did the no AFI condition (see Table 3).

*Dominance.* As in Study 1, this dimension was coded such that higher scores indicate greater dominance. The results provided support for Hypothesis 1. The ANOVA associated with dominance yielded only one significant effect: role,  $F(1, 127) = 12.73, p = .001, \eta^2 = .09$ . Table 3 shows that participants reported less dominance than did observers. The two-way role by AFI interaction was the only other effect to approach traditional levels of statistical significance,  $F(1, 127) = 3.51, p = .06$ . As a result, only Hypothesis 1 was supported.

*Informality.* The univariate analysis of the informality dimension revealed two significant main effects and an interaction. First, a main effect for AFI,  $F(1, 127) = 9.07, p < .005, \eta^2 = .07$ , was tempered by a significant two-way role by AFI interaction,  $F(1, 127) = 4.24, p < .05, \eta^2 = .04$ . Follow-up tests indicated that participant ( $M = 4.72, SD = 1.02$ ) ratings of informality were differed significantly from those of observers ( $M = 4.30, SD = 1.03$ ) under conditions of AFI,  $t(66) = 1.72, p < .05$ , but did not under conditions of no AFI (participant:  $M = 4.10, SD = 1.11$ ; observers:  $M = 4.26, SD = 1.24$ ),  $t(63) = 0.57, p > .05$ .

Second, a main effect for format,  $F(1, 127) = 12.15$ ,  $p = .001$ ,  $\eta^2 = .09$ , indicated that interactions conducted in the synchronous condition were rated as more informal than were those conducted in the asynchronous condition. The overall results do not support Hypothesis 1, but do provide qualified support for Hypothesis 2.

*Composure.* Analysis of the composure dimension produced a significant main effect for AFI,  $F(1, 127) = 18.79$ ,  $p < .001$ ,  $\eta^2 = .13$ . Consistent with Hypothesis 2, the AFI condition reported greater composure than did the no AFI condition. Hypothesis 1 was not supported. The main effect for role failed to achieve statistical significance,  $F(1, 127) = 1.96$ ,  $p = .16$ .

### *Discussion*

Study 2 extended the results of Study 1 and provided support for the predicted effects of participant–observer differences and AFI on group discussions conducted through synchronous and asynchronous text formats. Differences between participants and observers emerged on three dimensions. Participants rated discussions as reflecting greater intimacy and social orientation as well as less dominance than did observers; the findings for intimacy and social orientation, however, were accompanied by significant interactions with the communication format employed. Unfortunately, the pattern of means across the interactions was not consistent.

Once more, AFI emerged as an important determinant of how relational messages are interpreted. Previous research indicates that AFI produces systematic effects on how participants communicate in online interactions (Walther & Parks, 2002). CMC participants (relative to FtF interactants) are particularly sensitive to AFI and attempt to acquire social information about partners through whatever means the communication format employed allows (Ramirez et al., 2002). The results of the present study suggest the presence of AFI was instrumental in producing the hypothesized participant and observer differences. Although the extent of their future contact with other group members may be limited to their passive examination of others' contributions to the discussion, observers (like participants) appear to be somewhat sensitive to the presence of AFI as indicated by more positive interpretations of relational messages. However, the proposed differences between participants and observers failed to emerge when AFI was absent. The results of the post hoc tests indicated that participant and observer interpretations were similar when no future interaction was expected with a target.

The robustness of the participant–observer findings reported in Study 1 and 2 raise an important question regarding the extent to which differences in relational message interpretations are prone to temporal influences. That is, are the effects reported in both studies stable over an extended temporal period or do participant–observer perspectives converge (or further diverge) over time? SIPT (Walther, 1992) leads to the expectation that relational message interpretations would become more positive (or potentially more negative) when an unlimited amount of time is allowed for messages to accrue. It is possible, however, that the temporal effects predicted by the



theory may be moderated by the role individuals assume in discussions. A third study conducted over an extended period of time was undertaken to address this question.

### Study 3

Study 3 replicated and extended the results of the previous studies by examining participant–observer effects across two time periods. The study followed the same overall design as Study 2 using both synchronous and asynchronous communication formats in group discussions. As in Studies 1 and 2, it was predicted that participants would assign more favorable meanings to relational messages than would observers (e.g., rate communication as more intimate, more composed, more socially-oriented, more informal, and less dominant; Hypothesis 1). Similarly, the presence of AFI was predicted to yield more positive evaluations of relational messages than would its absence (Hypothesis 2). Per SIPT (Walther, 1992), temporal effects were expected to also emerge such that relational message interpretations would become more positive over time (Hypothesis 3). No prediction was set forth for the effect of the communication format in discussions (Research Question 1).

#### Method

*Participants and procedures.* Participants ( $N = 284$ ; 142 participants, 142 observers) for Study 3 were recruited from undergraduate communication classes and offered extra class credit in exchange for their participation. Participants reported an average age of 22.32 years ( $SD = 3.85$ ), and were primarily White/Caucasian (86%). The overall study followed the same procedures (e.g., assignments to roles, instructions, etc.) as those used in Study 2, with the exception of the tasks employed.

Participants in Study 3 completed two tasks designed to elicit discussion among group members. The *trip planning task* required members to collaborate on planning a cross-country trip based on a set of rules (e.g., number of stops, expenses, etc.). The *advice evaluation task* required members to establish and apply a set of criteria for evaluating alternative recommendations to a social dilemma.<sup>5</sup> The order of the tasks was counterbalanced across groups; no significant effects emerged on any of the variables of interest as a result of task order in subsequent analyses ( $p = .36$ ). As in previous studies utilizing SIPT, groups completed each task within a 2-week period (total of 6 weeks, with a week between each task), with postinteraction measures completed immediately following the completion of each task.

*Postinteraction measures.* Relational communication was measured as in Studies 1 and 2 via the RCS (Burgoon & Hale, 1987; Walther & Burgoon, 1992). The following reliabilities (Cronbach's alpha) were observed for each dimension, averaged across time periods: intimacy (for participants,  $\alpha = .90$ ; for observers,  $\alpha = .93$ ), social orientation (for participants,  $\alpha = .88$ ; for observers,  $\alpha = .86$ ), dominance (for participants,  $\alpha = .79$ ; for observers,  $\alpha = .84$ ), composure (for participants,  $\alpha = .80$ ; for observers,  $\alpha = .80$ ), and informality (for participants,  $\alpha = .85$ ; for observers,  $\alpha = .83$ ).

## Results

### Manipulation Check

The AFI manipulation was examined through a 2 (role: participant vs. observer)  $\times$  2 (AFI vs. no AFI)  $\times$  2 (synchronous vs. asynchronous format)  $\times$  2 (time) mixed model analysis of variance (ANOVA), with role and time as repeated factors and AFI and format as between-subjects factors. The results showed the AFI manipulation succeeded,  $F(1, 141) = 141.54$ ,  $p < .001$ ,  $\eta^2 = .50$ . Individuals in the AFI condition ( $M = 5.51$ ,  $SD = 1.17$ ) reported a higher expectation of continued contact relative to those in the no AFI condition ( $M = 2.99$ ,  $SD = 1.35$ ).

### Hypothesis Tests

*Intimacy.* The ANOVA examining intimacy revealed significant main effects for role,  $F(1, 138) = 128.01$ ,  $p < .001$ ,  $\eta^2 = .48$ ; AFI,  $F(1, 138) = 70.93$ ,  $p < .001$ ,  $\eta^2 = .34$ ; and time,  $F(1, 138) = 28.67$ ,  $p < .001$ ,  $\eta^2 = .17$ . However, three significant interactions tempered these effects. First, a role by time interaction emerged,  $F(1, 138) = 14.71$ ,  $p < .001$ ,  $\eta^2 = .10$ . Follow-up tests revealed that although ratings of intimacy increased for both participants and observers over time, their ratings differed significantly from each other at both Time 1 (participant:  $M = 4.67$ ,  $SD = 0.77$ ; observer:  $M = 4.19$ ,  $SD = 0.86$ ),  $t(141) = 3.52$ ,  $p < .001$ , and Time 2 (participant:  $M = 5.01$ ,  $SD = 0.74$ ; observer:  $M = 4.29$ ,  $SD = 0.75$ ),  $t(141) = 5.76$ ,  $p < .001$ . Thus, the post hoc test results indicate participant and observer ratings of intimacy did not converge over time.

Second, an AFI by role interaction also surfaced,  $F(1, 138) = 7.01$ ,  $p < .01$ ,  $\eta^2 = .05$ . Follow-up tests indicated that when AFI was present, participants' ( $M = 5.28$ ,  $SD = 0.68$ ) ratings of intimacy were significantly greater than those of observers' ( $M = 4.54$ ,  $SD = 0.77$ ),  $t(69) = 4.29$ ,  $p < .001$ . When AFI was absent (no AFI), participant ( $M = 4.40$ ,  $SD = 0.53$ ) and observer ( $M = 4.28$ ,  $SD = 0.73$ ) ratings of intimacy were comparable,  $t(71) = 0.81$ ,  $p > .05$ .

Third, an AFI by time interaction,  $F(1, 138) = 18.32$ ,  $p < .001$ ,  $\eta^2 = .12$ , showed that, whereas the intimacy ratings of the AFI condition were fairly stable over time (Time 1:  $M = 4.89$ ,  $SD = 0.70$ ; Time 2:  $M = 4.93$ ,  $SD = 0.75$ ),  $t(69) = 0.07$ ,  $p > .05$ , those of the no AFI condition increased significantly over time (Time 1:  $M = 3.98$ ,  $SD = 0.65$ ; Time 2:  $M = 4.36$ ,  $SD = 0.62$ ),  $t(71) = 3.61$ ,  $p < .001$ . Overall, the results provide qualified support for the three hypotheses.

*Social orientation.* The results associated with social orientation mirrored those for intimacy and also provided qualified support for predictions. The univariate analysis detected three significant main effects: role,  $F(1, 138) = 5.84$ ,  $p < .05$ ,  $\eta^2 = .04$ ; AFI,  $F(1, 138) = 19.34$ ,  $p < .001$ ,  $\eta^2 = .12$ ; and time,  $F(1, 138) = 8.65$ ,  $p < .005$ ,  $\eta^2 = .06$ . Two significant interactions accompanied these effects. A significant AFI  $\times$  Role interaction,  $F(1, 138) = 8.23$ ,  $p = .005$ ,  $\eta^2 = .04$ , indicated the presence of significant differences between participant ( $M = 6.24$ ,  $SD = 0.74$ ) and observer ( $M = 5.69$ ,  $SD = 0.94$ ) ratings under conditions of AFI,  $t(69) = 3.86$ ,  $p < .001$ , but not under

conditions of no AFI (participant:  $M = 5.48$ ,  $SD = 1.02$ ; observer:  $M = 5.53$ ,  $SD = 1.15$ ),  $t(71) = 0.27$ ,  $p > .05$ .

A significant AFI  $\times$  Time interaction,  $F(1, 138) = 15.40$ ,  $p < .001$ ,  $\eta^2 = .10$ , indicated that the ratings of the AFI condition remained fairly consistent from Time 1 ( $M = 6.00$ ,  $SD = 0.96$ ) to Time 2 ( $M = 5.93$ ,  $SD = 0.82$ ),  $t(69) = 0.10$ ,  $p > .05$ , but those of the no AFI condition increased over time (Time 1:  $M = 5.27$ ,  $SD = 1.14$ ; Time 2:  $M = 5.74$ ,  $SD = 1.03$ ),  $t(71) = 2.97$ ,  $p < .01$ .

*Dominance.* Analysis of the dominance dimension revealed only one significant effect. A significant two-way role by time interaction,  $F(1, 138) = 6.91$ ,  $p = .01$ ,  $\eta^2 = .05$ , indicated that participant (Time 1:  $M = 3.95$ ,  $SD = 0.82$ ; Time 2:  $M = 3.81$ ,  $SD = 0.89$ ) and observer (Time 1:  $M = 3.67$ ,  $SD = 1.05$ ; Time 2:  $M = 3.78$ ,  $SD = 0.98$ ) ratings of dominance differed significantly at Time 1,  $t(141) = 1.92$ ,  $p < .05$ , but not Time 2,  $t(141) = 0.19$ ,  $p > .05$ . Thus, none of the hypotheses were supported on this dimension.

*Informality.* The ANOVA examining this dimension produced two significant main effects. Hypothesis 1 was supported. A main effect for role,  $F(1, 138) = 8.36$ ,  $p < .005$ ,  $\eta^2 = .06$ , indicated that participant ratings were significantly greater than those of observers (see Table 4). A main effect for format,  $F(1, 138) = 9.06$ ,  $p < .005$ ,  $\eta^2 = .06$ , indicated that discussions conducted in the synchronous condition, in contrast to the asynchronous condition, were rated as more informal. No support emerged for Hypotheses 2 (AFI) or 3 (time).

*Composure.* Analysis of the composure dimension produced the predicted significant main effects for role,  $F(1, 138) = 16.09$ ,  $p < .001$ ,  $\eta^2 = .10$ , and AFI,  $F(1, 138) = 24.49$ ,  $p < .001$ ,  $\eta^2 = .15$ , which were accompanied by a significant two-way AFI by role interaction,  $F(1, 138) = 5.06$ ,  $p < .05$ ,  $\eta^2 = .04$ . Post hoc tests indicated that participants' ( $M = 6.09$ ,  $SD = 0.77$ ) ratings of composure were significantly greater than those of observers' ( $M = 5.50$ ,  $SD = 0.84$ ) under conditions of AFI,  $t(69) = 4.33$ ,  $p < .001$ , whereas participant ( $M = 5.44$ ,  $SD = 0.90$ ) and observer ( $M = 5.27$ ,  $SD = 0.89$ ) ratings did not differ significantly under conditions of no AFI,  $t(71) = 1.12$ ,  $p > .05$ . The results provide qualified support for Hypotheses 1 and 2.

Hypothesis 3 was also supported. A main effect for time emerged,  $F(1, 138) = 10.78$ ,  $p = .001$ ,  $\eta^2 = .07$ , and revealed that ratings of composure increased over time (see Table 4).

## General Discussion

Despite the fact that previous research shows that the majority of individuals in online discussions do not actively participate (Nonnecke & Preece, 2000), little research provides insight into how the experiences of these individuals are similar or distinct from those who do contribute. This is particularly surprising given the recent growth in online dating sites as well as social networking venues such as MySpace and Facebook, in addition to older, more established discussion forums (e.g., bulletin boards, chatrooms, etc.) that allow participants to passively gather social information about others without engaging in interaction. Theoretical perspectives in CMC also

**Table 4** Means (and Standard Deviations) for Relational Communication Dimensions by Role, Anticipated Future Interaction (AFI) condition, Communication Format, and Time for Study 3

Dimension	Role		AFI		Format		Time	
	Participant ( <i>n</i> = 142)	Observer ( <i>n</i> = 142)	Present ( <i>n</i> = 70)	Absent ( <i>n</i> = 72)	Synch. ( <i>n</i> = 72)	Asynch. ( <i>n</i> = 70)	Time 1 ( <i>n</i> = 142)	Time 2 ( <i>n</i> = 142)
Intimacy	4.84 (0.76)	4.24 (0.81)	4.91 (0.55)	4.17 (0.51)	4.50 (0.65)	4.57 (0.64)	4.43 (0.72)	4.64 (0.66)
Social orientation	5.85 (0.97)	5.61 (1.17)	5.96 (0.55)	5.50 (0.68)	5.79 (0.63)	5.67 (0.68)	5.63 (0.91)	5.83 (0.64)
Dominance	3.88 (0.86)	3.73 (1.01)	3.72 (0.58)	3.89 (0.56)	3.78 (0.59)	3.83 (0.54)	3.81 (0.68)	3.80 (0.64)
Informality	4.57 (1.04)	4.20 (1.10)	4.45 (0.52)	4.32 (0.56)	4.25 (0.54)	4.53 (0.58)	4.39 (0.62)	4.39 (0.72)
Composure	5.76 (0.90)	5.39 (0.87)	5.80 (0.52)	5.35 (0.54)	5.51 (0.56)	5.64 (0.60)	5.50 (0.65)	5.65 (0.63)

*Note.* Higher means indicate greater levels of each dimension. With the exception of the columns under “Role,” the sample sizes reported for each column indicate the number of participant–observer dyads in that condition used in the analyses.

appear to assume that only active participants are influenced by messages exchanged in computer-mediated interaction. The present article reported on three experimental studies designed to examine the extent to which participants and observers interpret relational messages in a similar manner. Drawing upon previous research on participant–observer effects and SIPT (Walther, 1992), Studies 1 and 2 examined the effect of participating versus observing discussions and the role of AFI in discussions conducted through CMC. Study 3 replicated and extended the earlier studies across two time periods. The overall results provided consistent support for predicted participant–observer differences (Hypothesis 1), the effect of AFI (Hypothesis 2), and the influence of temporal influences (Hypothesis 3, Study 3 only) on relational message interpretations.

A central finding across the three studies was that participants and observers consistently reported distinct experiences in CMC discussions. Consistent with previous research (e.g., Burgoon & Newton, 1991; Monahan, 1995; Schlosser, 2005), participants reported more positive interpretations of relational messages than did observers. In Study 1, these participant–observer effects emerged in the predicted direction on four (intimacy, social orientation, informality, composure) of the five relational communication dimensions. In Study 2, analysis of three (intimacy, social orientation, dominance) of the five dimensions produced significant differences. In Study 3, analysis of four (intimacy, social orientation, informality, composure) of the five dimensions indicated the predicted effects. It is worth noting that the effects were in terms of intensity of interpretations and not in direction. That is, participant and observer interpretations appear to converge on the valence (e.g., positive or negative) of the messages but diverge on their intensity (how positive or negative the messages are). Several of the effects, however, were moderated by AFI, the communication format used (synchronous or asynchronous CMC), or time, although in the majority of cases the main effect for role was still interpretable. Overall then the three studies provide support for the claim that active participants and passive observers in CMC, like FtF interaction, come away from online discussions with different perceptions of the messages exchanged.

The overall pattern of findings associated with Hypothesis 1 suggests that the logic underlying the prediction may apply more accurately to relational communication dimensions that reflect positivity. That is, the results of the three studies indicate that perceptions of participants and observers in CMC are more prone to diverge when relational messages are interpreted along dimensions of affiliation (Dillard, Solomon, & Palmer, 1999). The distinct experiences reported by participants and observers emerged consistently across the three studies on three of the relational dimensions (intimacy, social orientation, composure) that appear (at least on the surface) to be positively valenced. Given that previous research indicates that the hypothesized participant and observer differences center on the intensity and not the direction of relational message interpretations, the aforementioned dimensions may be more in line with the logic of the hypothesis: Participants were expected to display a positivity bias for the reasons outlined above. It may be that the three dimensions more accurately capture this bias than do the remaining two (dominance, informality),

which failed to provide support for the prediction and are less unambiguously positive.

Equally significant was the effect of AFI in the three studies. SIPT identifies AFI as a potent motive for affiliation (Walther, 1994). Previous research shows that the extent to which an individual expects future contact with a target is predictive of their communication behavior (Gibbs et al., 2006; Ramirez, 2007; Walther, 1994). In the present set of studies, the presence of AFI consistently led to more positive interpretations of relational messages. This emerged on two (intimacy, composure) of the dimensions in Study 1, four (intimacy, social orientation, informality, composure) of the dimensions in Study 2, and three (intimacy, social orientation, composure) of the dimensions in Study 3. Like the participant–observer effects, several of these main effects were moderated by other factors examined in each study. Especially worth noting is that the emergence of AFI by role interactions across the studies, particularly in Study 1 and 3, suggest that participant and observer differences may be more pronounced when future interaction with a partner is anticipated. Relational message ratings were influenced by role differences in the AFI condition, whereas no such effects emerged in the non-AFI condition. This suggests that the presence of AFI in computer-mediated interactions may be a contributing factor in creating the divergent perceptions reported in other studies examining differences between active participants and passive lurkers in online venues (e.g., Preece et al., 2004; Schlosser, 2005).

Whereas the results across the three studies provide support for the presence of participant–observer effects in CMC, conflicting evidence emerged with respect to whether the differences dissipate over time. The results associated with temporal influences (examined in Study 3) revealed significant main effects of time on three of the dimensions (intimacy, social orientation, composure) as predicted by SIPT (Walther, 1992). Yet, the presence of a pair of significant two-way role by time interactions, which directly address whether the perspectives converge over time, produced inconsistent patterns. The two-way interaction on the intimacy dimension did not provide evidence for the convergence of participant and observer interpretations of relational messages, as both increased in a parallel manner over time, with those of participants increasing at a higher rate. The same two-way interaction on the dominance dimension showed some evidence for convergence, with participant ratings decreasing and observer ratings increasing over time. Nonetheless, the lack of consistency among the results indicates the need for further examination of this issue in future studies.

Not surprising, few significant findings surfaced for differences in communication formats. The use of synchronous formats appears to influence the degree of formality perceived in discussions. The results associated with Studies 2 and 3 indicated that less formality was reported in the synchronous condition relative to its asynchronous counterpart. A potential explanation for this finding may involve the fact that asynchronous forms of CMC allow for editing to a greater degree than do synchronous forms, in which messages scroll across the computer screen as they are contributed by interaction partners and typically require responses that are brief

and less concerned with, for example, typographic errors (e.g., misspellings, missing words, etc.) than their asynchronous counterparts. These characteristics may contribute to the perception of informality reported by study participants. Communication format also moderated the effect of role in Study 2 on the dimensions of intimacy and social orientation, but the patterns of cell means were not consistent. Hence, factors beyond the communication format (e.g., role, AFI, time) appear more influential in how relational messages are interpreted than the mode used to exchange the messages alone.

The overall findings of this investigation have both theoretical and practical implications. From a theoretical perspective, the results of the three studies presented challenge current theories of CMC to account for them. For example, although the presence of AFI appears to influence both participant and observer judgments, their interpretation of relational messages continued to differ significantly on most dimensions. This raises the question of whether observers are prone to hyperpersonal interpretations of messages (Walther, 1996). That is, can or under what circumstances might observer perceptions reach hyperpersonal levels? Must observers shift from passive observation to active participation for hyperpersonal communication to emerge? From a practical perspective, Berger (2005) suggests that interaction procedures and the conventions associated with the use of new technologies will fundamentally change the way people conduct FtF interactions. The consistency of the current research and previous studies conducted in FtF settings on the distinction between participants and observers indicates the relationship may be circular. In other words, people's FtF experiences also influence how they interact in CMC settings. It seems in both FtF and CMC settings participants form more positive impressions of their interaction partners than do observers. This finding may be due to the fact that people likely interpret information acquired via CMC in a similar manner to that acquired in via FtF despite differences in the quality of information available (Ramirez & Zhang, 2007).

The overall results suggest several directions for future research. As noted above, one aspect of the present research requiring further attention is that of the convergence of the distinct perspectives of participants and observers over time. Study 3 attempted to address this issue and was unsuccessful in providing an unequivocal answer. It may be that a longer, more extended period of time for message exchange is required in order to more accurately determine the extent to which participants and observers converge in their interpretations of relational messages and other forms of communication, if they do at all. Given that the present studies were the first of their nature, further investigations over extended temporal periods should provide further insight into the extent to which convergence may be expected.

In addition, it should be pointed out that the present investigation assumed the discussions conducted would be perceived fairly positively by both participants and observers based on previous research supporting such expectations; communicators in initial interactions expect partners to engage in positive interaction behavior, and the violation of that norm appears to be strongly and negatively influence social judgments (Kellermann, 1984). However, it should be acknowledged that previous

research indicates that the anonymous nature of CMC may be conducive to hostility and negative interactions (e.g., Lea, O'Shea, Fung, & Spears, 1992). Although the current research did not permit the possibility of flaming behaviors due to the multiple experimental manipulations enacted, it is worth noting that the conceptual framework presented above suggests that participants will rate targets more intensely than would observers *irrespective of the valence of the information provided*. Similarly, the expectation of future contact and the discussions being recorded could have possibly made the subjects of this research concerned about their identifiability, which might contribute to the positive nature of interactions (Douglas & McGarty, 2001). Nonetheless, future research should examine negative interactions in CMC and their effects on participant and observer perceptions.

In summary, the present research indicates that the interpretation of relational messages is influenced by the role an individual assumes in CMC discussions, the expectation of continued contact, and the amount of time allowed for message exchange. The communication format, on the other hand, appears to influence interpretations minimally.

### Notes

- [1] The discussion questions/topics were: (a) What do like or dislike about your classes? (b) Discuss something from your past that you feel guilty about. (c) What type of job would you like to have? (d) What are the best and worst things that have ever happened to you? (e) How would your male and female friends describe you? Participants determined the order in which the items were discussed. A follow-up analysis in all three studies failed to identify any significant effects due to the ordering of the questions ( $p > .35$ ).
- [2] The chat environment used in the study was designed such that anyone entering or leaving was "announced" to others already present on a sidebar. Participants in all of the studies using synchronous CMC were told prior start of the study that the "observer" was a research assistant assigned to the discussion to insure no technical difficulties arose. This explanation resulted from a pilot study testing different cover stories, which indicated no significant differences between a control condition with no observer and a condition with an observer utilizing this explanation. Although the conferencing system included tools that would have allowed observers to log into the system and observe interactions undetected ("stealth mode"), doing so raises ethical questions regarding the expectation of privacy and protection of human subjects. The university's human subject protocol oversight committee approved (and indeed expressed a preference for) the above explanation. Participants using asynchronous CMC in Studies 2 and 3 were provided a similar explanation to insure comparability of conditions.
- [3] Upon completing the discussions, participants were randomly assigned through a lottery system to evaluate one member of their group (assigned by the researchers) on the RCS. Observers were also assigned to evaluate one group member. The resulting observer evaluation was paired with the corresponding group member evaluation and employed in the analyses. The same approach was used in Study 3, where evaluations were completed after each task.
- [4] Because the discussions occurred in the context of groups, groups were treated as nested in preliminary analyses to identify the appropriate error terms for significance tests. The primary result of this approach is the reduction of Type 1 error.
- [5] Tasks are available upon request.



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