

Inventing Partners in Computer-Mediated Communication: How CMC Sustains Self-fulfilling Prophecies and Relational Attributions

Joseph B. Walther¹ and Stephanie Tom Tong²

¹Dept. of Communication/Dept. of Telecommunication, Information Studies & Media,
Michigan State University, USA

jwalther@msu.edu

²Dept. of Communication, Wayne State University, USA
stephanie.tong@wayne.edu

Abstract. Research on computer-mediated communication (CMC) vacillates between arguments that the medium of text is too barren to experience partners' personalities, to claims that we "fill in the blanks" when encountering others online. This metaphor of filling in the blanks can be substantiated scientifically by examining data from several studies that demonstrate when and how CMC users form idealized false impressions, and what false attributions they bestow when they anticipate or interact with online partners. These instances take place when users are provided insufficient descriptions of chat partners, or with avatars that are knowingly random with respect to their operators. Going beyond mere impressions, CMC users create their own versions of their partners' attractiveness and sociability. They do so outside their own awareness, creating demonstrable self-fulfilling prophecies in ways that traditional research eschews in the CMC context. Research examining behavioral disconfirmation online, the behaviors that actuate it, and the erroneous relational attributions CMC users apply to partners, depict how these self-fulfilling prophecies are realized.

1 Introduction

The dominant view of computer-mediated communication (CMC) and its social impacts have shifted dramatically, from models depicting how CMC is devoid of social cues and social influence, to models explaining how online communication can foster hyperbolic levels of mutual influence leading to exaggerated perceptions of others. The most applicable theoretical approach to how the restrictions and affordances of online social interaction has suggested an interconnected set of influences involving how one individual perceives one's partner, selectively communicated with a partner, and through such exchanges, reciprocally influences and transforms partners' interaction style [1].

In exploring how CMC users form impressions, and how they perceive and affect their conversation partners' emotional behavior, recent research has focused on the influence of both expectancies and attributions as important cognitive factors that

impact interpersonal perceptions and behaviors, and whether these factors catalyze self-fulfilling prophecies in terms of altering partners' demeanor and reciprocal behavior. The results of several studies, in aggregate, appear to suggest that an individual's own expectations and attributions have an extraordinarily great impact on that individual's experience of his or her partner. Although there is some evidence for reciprocal behavioral influence in CMC, it appears as though intra-individual processes and one's own behaviors toward a partner disproportionately affect one's interpretations of partners' behavior. That is, one's own cognition and behavior, and one's own self-perceptions about that behavior, may more greatly influence an individual's social judgments about the partner than the partner's behavior warrants.

These conclusions tell us in greater detail than we have previously understood just how individuals fill in the gaps for missing information about their partners in online interaction. Looking across these studies leads to the metaphoric conclusion that CMC facilitates the cognitive creation of one's online partner. That is to say, interpersonal interaction transpires online in ways by which pre-interaction expectancies exert a particularly profound influence on individuals' initial interpersonal perceptions, and although these expectancies appear to influence partners' social behaviors to some extent, the perceivers' own perceptions and behaviors may be those that most strongly affect their perceptions of partners over and above the role that their partners' actual behavior conveys. Because most of the cognitive and behavioral work leading to transformed interpersonal judgments appears to take place at intrapersonal level rather than interpersonally, we may suggest that individuals invent their partners: Although they indeed cause their partners to behave in certain ways, they do not perceive that they themselves are the cause of their partners' responses. Instead, in CMC to a greater extent than in other media, individuals believe that their partners' reactions are spontaneous and that their partners manifest their own physical, social, and affective inclinations toward the individual instigator, despite the strong role that the instigator's own perceptions and behaviors play in this inferential process.

The following essay reviews a number of original studies that support and illuminate the treatise that individuals unwittingly create their online partners out of the naïve participants with whom they interact.

2 Background: Idealization and Feedback in Hyperpersonal CMC

To appreciate fully the extraordinary shift that research has revealed in terms of our understanding of how individuals affect and perceive online partners, we review perspectives on CMC about perception and mutual influence online. The hyperpersonal model of CMC [1] suggested that CMC users may develop exaggerated positive or negative relations with online partners, relative to offline interaction settings, through four concurrent cognitive and communicative processes. First, as receivers of text-based CMC messages, CMC users form exaggerated impressions of others based on overattributions of whatever meager information about partners may be conveyed in mediated messages. Contextual cues suggesting a partner's social category

membership, or a stylistic or content cue that connotes some personality characteristic, may be magnified in terms of its impression-forming value [2]. Second, as message senders, CMC users selective self-present by choosing self-revealing content and style with a level of deliberation and discretion greater than that which face-to-face communication provides [3]. Third, channel characteristics such as editability and timing further enhance the creation of intentionally crafted messages that may enhance person perceptions and relational communication. Fourth, feedback processes—reciprocation of desirable messaging—further enhances unusually positive or negative dynamics that originate in the aforementioned processes, through behavioral confirmation and disconfirmation processes (see for review [4]).

3 The Hyperreality of Perceptions of Others

Although we quite commonly apprehend others online with no visual cues, or few visual cues, our initial impressions of others in CMC appear to establish unexpectedly robust first impressions. This phenomenon is seen in arbitrary instances of social identification where ingroup/outgroup impressions bias perceptions, in the effects of icons and avatars, and when individuals are offered non-diagnostic photos of others. In addition to the potent effect of arbitrary first impressions, whether social, graphical, or photographic, the social goals that interactants bring to CMC episodes lead communicators to enact patterns of interaction by which they inadvertently cause themselves to form exaggerated positive or negative perceptions of partners, through communication processes that differ substantially from the manifestation of relational communication in offline interaction.

The foundational set of discoveries that individuals create their partners online was developed by exploring the basic processes of affection exchange in CMC. Previous theoretical work argued that the CMC medium does not suppress the expression of affinity, rather, it transforms the expression of affinity from reliance on nonverbal behaviors to its expression through language, primarily. One study that substantiated this proposition [5] conducted an experiment in which dyads conversed either in a face-to-face setting or through real-time CMC chat. In each dyad, one of the members was recruited by the researchers to be an ad hoc confederate in the study. This individual was instructed to express affinity or disaffinity during the conversation. Instructions for affinity asked the individual to behave in a way that communicated that he or she liked the partner as much as possible, without making it obvious that this person had been instructed to do so. No specific behaviors were suggested to this confederate. The disaffinity confederates, likewise, were asked to get their partners not to like them as much as possible without making it obvious that the interaction was staged. Conversations were audio-video recorded for the face-to-face sessions and transcripts were collected from CMC dyads. The analysis of these conversations provided the data with which to learn how affinity was expressed in face-to-face and CMC.

Confederates in the face-to-face conditions expressed affinity primarily through variations in vocal and kinesic behavior. These included vocal pleasantness, sharpness,

condescension, pause rates, and timbre; as well as smiling, body relaxation, gaze directness, facial orientation, random head movements, and looking around the room. No verbal behaviors significantly connoted affinity/disaffinity in a multiple regression of all relevant cues. In CMC, however, an equivalent amount of variance in affinity was attributed to different forms of disagreement, changing the conversational subject, and explicit positive statements of affection.

The basic conclusions of this research extend beyond the benchmarking of the capability of the CMC medium and its users to express affinity through verbal rather than nonverbal cues. It suggests a different manner of affective exchange online than the manner in which it is done off-line. Off-line, nonverbal cues that convey affinity and disaffinity are predominantly interpersonal in orientation. That is, they indicate the sender's affective state or the sender's interpersonal regard, interest, involvement, and emotion toward the partner. In the CMC condition where these nonverbal behaviors are unavailable, the majority of cues to affinity appear to focus on externalities. That is, the way that individuals manage the conversation and the way they signal congruent or incongruent affective alignment with their partner is done through by addressing a co-referential topic of conversation. This is a significant shift in the manner of affective exchange between CMC and traditional face-to-face interaction.

These findings suggest that the process of affinity expression does not provide a simple translation of the transmission of meaning from one set of cues to another set of cues, without incurring additional effects. Although the effect of these changes in focus are intrapersonal in origin and have interpersonal effects, they are conducted through conversational orientations to an object that is the focus of common ground. A byproduct of this translation, that became apparent in further research, is that our own interpersonally-effective statements of position trigger self-induced social perceptions of others, which often result in our own behaviors toward a partner playing a very strong role in the impressions those partners make upon us.

An experiment examined how individuals in dyads pursued affinity and disaffinity in the context of a web-supported discussion about restaurants [6]. Two participants at a time completed forms rating five local hamburger restaurants; researchers exchanged these forms among dyad partners, and told them they would discuss their preferences via CMC after a 10-minute delay. One participant was asked to enact an affinity or disaffinity goal with respect to the other partner when the conversation ensued. Researchers predicted that opinion congruence about the restaurants would be the means by which the ad hoc confederate would enhance or reduce affinity. One of the research objectives was to see whether this participant would avail himself of information on the web in order to craft arguments and support statements of agreement or disagreement with his partner during the chat.

Observation and analyses showed that the confederate did look up online information more so than did naïve participants, particularly when instructed to encourage disaffinity from his partner in the upcoming chat. Analysis of the online conversation more clearly showed that the confederates employed statements of agreement and disagreement about the restaurant preferences during their conversations, and that their arguments supporting or negating their partners positions led to changes in affect. At the end of the chat, not only did the partners' impressions of the ad hoc

confederate correspond to the confederates' level of disagreement and argumentation; more dramatically, the confederates themselves changed their positions regarding the restaurants in conjunction with their disagreements and arguments.

The most striking finding, however, was the correlations between the confederates' conversational behaviors and those same confederates' impressions of their (naïve) partners at the end of the conversations. Significant correlations indicated that the more disagreements the confederate expressed, the less physically attractive they thought their partners were. Disagreements also correlated inversely with social attractiveness, i.e., the degree to which confederates thought their partners could be friends with them. Overall, the conversational strategies that focused on the object of the conversation (the neutral topic of restaurants) enacted for the purpose of asserting a relational goal, affected not only the receiver of the messages but the senders of those messages as well. In this case, fairly clearly, the CMC interactant's behavior toward his partner influenced his own perceptions of that partner's physical and social characteristics. Because those partners were randomly selected, there is no rational basis for the confederates' assessments of those partners' characteristics other than the confederates' own cognitions and behaviors towards those target individuals. This appears to be a fascinating case in which the CMC interactants invented his partner, in a sense, despite the innocent and naïve involvement that partner brought to the situation.

4 The Merger of Initial Perceptions and Relational Communication: Behavioral Confirmation and Disconfirmation Effects

The least tested aspects of the hyperpersonal model include the potential of feedback—that is, reciprocal exchanges between online partners—to further extend and exaggerate reciprocal affective messages and interpersonal perceptions. The original hyperpersonal model suggested that, in this respect, the dynamics known as behavioral confirmation may pertain. Recent research has confirmed that CMC provides sufficient interpersonal resources for the conveyance of behavioral confirmation effects; moreover, examination of behavioral disconfirmation provides even more dramatic inroads for understanding how expectancies lead to behaviors, perceptions, and unusual attributions in CMC.

Interpersonal expectancies are known to cause both confirmation and disconfirmation effects, which are both dependent upon the mutual feedback exchanged between partners who are involved in dyadic interaction. Often tested using “getting acquainted” episodes between male and female dyads, the confirmation process begins when the male partner receives information from an experimenter about a (naïve) female partner that prompts him to develop specific impressions or expectations about her [7]. When he treats her in ways that reflect his initial expectations, she responds by reciprocating his behavioral overtures, thus creating behavioral confirmation of his original expectations. Perceptual confirmation is completed when the male partner interprets her behaviors as verification of his original, pre-interaction impressions.

These perceptual effects are usually tested by analyzing males' post-interaction ratings of female partners. Behavioral disconfirmation processes also occur through dyadic interaction, but with one important difference: After developing pre-interaction partner expectations, male interactants are motivated to behave in ways that are inconsistent with their initial expectations during the subsequent interaction. When female partners reciprocate, behavioral disconfirmation occurs.

Although behaviorally, female partners may be influenced by their partners to act in ways that are inconsistent with pre-interaction expectations, how their behaviors affect males' post-interaction perceptions of them is less clear. One early experiment [8] documenting behavioral disconfirmation involved dyads using audio-voice communication. Male interactants were given expectations that their partners were "unfriendly" which prompted men to compensate for their partner's expected negativity with overt friendliness. Although this chain of events elicited disconfirming positive behaviors by the naïve partners, it did not provoke male interactants' to change initial expectations of negativity in their post-discussion partner ratings. Instead, post-discussion ratings reflected perceptual confirmation when males' maintained their negative opinions of their partners, despite the positive behavior they displayed during the interaction.

However, in a more recent study [4], evidence of a perceptual disconfirmation effect did occur. Similar to research by Ickes et al. [8], male interactants were told their partners were "in a bad mood," in order to instill a negative pre-interaction expectation. This expectancy then prompted those interactants to compensate for the (ostensible) negativity by eliciting disconfirming behaviors from their partners, much like the processes observed in Ickes et al. However, in this study, the men changed their perceptions of their partners after the interaction; in fact, male partners believed that female partners' (unexpected) positive behaviors provided evidence that original expectations were incorrect, and changed their post-interaction ratings to be in line with their partners' displayed positivity. Indeed, when the "bad mood" induction was compared to post-discussion partner ratings from oppositely-valenced experimental conditions, results indicated a perceptual disconfirmation effect.

What might account for this pattern? How could the same behavioral disconfirmation processes occur in Ickes et al. [8] and Tong and Walther [4] but result in different perceptual effects? The most obvious difference between the two studies is the communication channel dyads used. Ickes et al.'s dyads used an audio-voice system (similar to a phone) whereas Tong and Walther's dyads used text-based CMC chat. The unique perceptual disconfirmation outcomes in Tong and Walther's results may point to the ways in which CMC actually facilitates the exchange of dyadic disconfirming feedback within its reduced-cue environment.

Although these results indicate how CMC's features may contribute to the transmission and enactment of these self-fulfilling prophecies, a related question is whether interactants attribute such changes to their own ability to influence their partner, or their partner's own volition. Do communicators believe that they are responsible for behavioral and perceptual changes in their partner or do they believe their partners changed themselves? It became apparent that one's belief that he is capable of changing another person's demeanor may be an important characteristic in mediating

whether that individual thinks that a partner actually changed, and just as importantly, why that partner behaved as she did. The extent to which someone believes he can change another person's demeanor can be considered an individual's level of *partner influence self-efficacy*.

Partner influence self-efficacy (PISE) can affect both confirmation and disconfirmation processes that are set into motion by the male perceiver's initial behavioral overtures to the partner during dyadic interaction. To the extent that male partners believe they are responsible for eliciting their partner's disconfirming behavior, they may "take credit" for positive changes in her negative demeanor, attributing her behavioral changes to themselves and not to their partners' real change. Such a view should result in perceptual confirmation. On the other hand, it is possible that if perceivers believe they are truly effective at changing their partner's negativity—that they were actually capable of changing her bad mood into a good one. In this case, high levels of males' PISE should result in perceptual disconfirmation.

However, the issue of self-efficacy is complicated by communication channel. It is well known that many communicators report more favorable attitudes toward channels with a greater capacity for nonverbal cues than to those with a lesser capacity [9], reflecting the widely-held assumption that "more cues is better." Such attitudes toward audio-voice and CMC interaction may produce differences in PISE that may account for why perceptual confirmation was observed in Ickes et al. [8] and perceptual disconfirmation was seen in Tong and Walther [4]. Given that communicators may feel more confident in their ability to interact with and influence their partner in audio-voice, male partners in Ickes et al. may have made different attributions about their role in their partner's behavioral positivity, when compared to males who may feel comparably lower levels of PISE in CMC chat. Therefore, knowing how channel affects self-reported feelings of PISE becomes essential to understanding how male partners make attributions at the end of the interaction.

An additional experiment tested the effect of communication channel on the patterns of expectancy effects described above, along with the additional moderating variable of PISE to see how perceivers' confidence in their own ability to influence their partners affected behavioral and perceptual outcomes [10]. As with the previous studies, it employed male-female dyads randomly assigned to use either audio-voice communication or CMC chat, and the same expectancy inductions as in the prior studies. The results indicated that self-reported PISE levels were significantly higher in audio-voice than in CMC chat, echoing people's belief that media offering more nonverbal cues are superior to media with fewer cues (particularly for interpersonal communication tasks). This also suggests that the judgments interactants make about themselves and their partners may differ across modalities.

When testing the effect of males' self-reported PISE and communication channel, an interesting interaction arose. In audio-voice, males who felt low self-efficacy maintained their negative partner ratings after the discussion. But in CMC, males' low self-efficacy was associated with a positive perceptual shift, i.e., a change from negative pre-interaction expectations, creating a disconfirmation effect. This effect was reversed in the audio-voice condition: In audio-voice, perceptual disconfirmation was more likely when males' felt confident in their own PISE.

This pattern may be accounted for by differences in PISE levels across channels: In audio-voice, the more confident males were in their ability to influence their partners, the more positivity was reflected in their post-discussion ratings. This suggests that in audio-voice the men believed they truly changed their partner's demeanor from negative to positive through their own high PISE. However, in CMC perceptual disconfirmation occurred at lower levels of PISE where the male partner attributed the female's demeanor shift to her, and not to himself. In essence, in comparison to his average audio-voice counterpart, the average male CMC interactant had relatively lower levels of PISE, which may have caused him to ignore the impact of his own influence when rating his partner after the discussion. Thus he may have attributed his partner's unexpected positive behavior to her own ability to change, rather than to his ability to induce it.

Such patterns revealed that the belief in the partner's openness to influence and belief in one's own communication self-efficacy are important to the process of confirmation and disconfirmation. Furthermore, these studies also show that CMC's unique affordances may facilitate both of these processes by allowing for selective self-presentation, behavior, and perception through dyadic feedback exchanged between partners.

5 Disconfirmation and Attribution: The Self-sealing Factor in Creating One's Partner

The last study we review in this exploration of the role of the perceiver in shaping perceptions of CMC partners sought to answer certain questions left open by the previous behavioral disconfirmation research. That line of inquiry established that CMC perceivers did not equate changes in their partners' demeanor interaction with the perceivers' own ability to change their partners' mood, although the behavioral data indicate that this was, in fact, the causal basis for partners' demeanor changes. The question therefore remained: if CMC perceivers find that their partners are behaving more socially than they expected, but they do not think that they themselves induced this change in sociability, then what do they believe is the cause of their partners' sociable demeanor?

Because the question asks whether, in a sense, different attributions may be made in CMC than in other media, we reviewed recent research on attributional differences in CMC and face-to-face interaction. Research [11] has documented that attributions for partners' self-disclosures differ in CMC than face-to-face interaction. When disclosures are made in CMC partners perceive significantly greater intimacy. Additionally, CMC participants tend to explain the causal basis for partners' disclosures differently as well.

In addition to classical attribution-theoretic dispositional and situational attributions, we make attributions representing the conclusion that one's partner behaved as she did due to some relationship-based motivation [11] or what is known as a personalistic attribution [12]. Personalistic attributions occur when an interactant believes that his partner acted as she did because of her specific feelings about him. Therefore,

personalistic attributions seemed to offer a means by which CMC interactants could understand why their sociable partners appeared to act positively toward them despite their own failure to take credit for influencing their partners' sociable behavior. A personalistic attribution would be tantamount to the conclusion that the partner behaved as though she liked him because she simply liked him, rather than because he induced her to behave in any particular way. Alternatively, the attribution that a partner behaved as she did because one individual tried to get her to do so can be classified as a self attribution.

An experiment replicated several of the procedures in the second Tong and Walther study reported above [13]. That is, male-female dyads conversed via CMC chat or by phone with a partner whom the male was led to believe was either in a bad mood or had a negative personality. This induction was expected to prompt the male partner to make efforts to be more sociable in order to lead his partner to be more sociable as well, in line with the findings of the previous study. After the conversations concluded, participants completed measures assessing their partners' demeanor as well as items identifying the attributions that they made for why their partners behaved as they did. These measures allowed orthogonal scoring on the four attributional dimensions of dispositional, situational, self-induced deliberate influence on a partner's behavior, or a personalistic attribution indicating that the partner behaved the way she did because of her own genuine affection toward the male interactant.

Analyses showed very similar effects on the males' behaviors as were seen in the previous studies. Men were more sociable toward their partners when they believed that their partners were in a bad mood compared to those who believed their partners had a negative personality. Correlations between the males' and their female partners' behaviors showed that partners did respond to males' overt sociability. Men in the CMC condition detected more of a change in their partners' moods as a result of the online conversation than did men who used the telephone system.

Supporting the study's hypotheses, there were also significant differences in the attributional patterns by males depending on whether their conversations took place by phone or via CMC chat. The CMC interactants attributed their partners' chat behavior more strongly to personalistic causes. That is, they believed that their partners' liking for them was the basis for their partners' behavior. Although CMC participants registered some degree of self attributions as well, self attribution was significantly more prominent in the telephone condition.

It is worth repeating that the female partners were naïve; they were neither in a bad mood nor had a negative personality. Their behavior may have shifted slightly toward sociability, but the only cause for change above baseline would be because the males instigated this change via their own overtures toward their partners. And yet, more so in CMC than by phone, these male interactants believed that when their partners acted nicely, it was because they simply liked them. There is no real basis for their conclusion aside from their perceptions of what they could or could not do via the medium in which they operated. The evidence shows that the perceivers themselves caused their partners' responses to come into being. Yet the communication channel fostered the illusion that the females' responses originated within themselves, and not from the males' influence. This is probably due in part to the stereotype about CMC that it is

too weak a channel effectively to change another person's demeanor, a stereotype which, although still popularly held, is shown by the evidence to be false. Because of this stereotype, however, and in particular because of its falsity, the illusion of liking replaces the self attribution of influence when interactants try to interpret the cause of their partner's affiliative behavior in CMC.

6 Conclusion

As a whole, the studies reviewed above showcase the potentially transformative nature of CMC in dyadic interaction. The formation of idealized pre-interaction partner expectations, the ability to influence partners' behaviors during communication, and the subsequent post-interaction attributions that individuals make about their partners reference the unique ability of CMC to facilitate the development and instantiation of self-fulfilling prophecies. Oddly much of this process takes place outside of the individuals' conscious awareness, which allows them to believe what they want to about their partners. In the end, the opportunity to create, produce, and sustain an ideal partner who may be too good to be true, is perhaps too good an opportunity to pass up.

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