Full length article

Teasing apart the effect of visibility and physical co-presence to examine the effect of CMC on interpersonal attraction

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A B S T R A C T

This study analyzed the possible difference in interpersonal attraction between communicators in cue-rich computer-mediated communication (CMC) and face-to-face (FtF) communication. The first aim was to determine whether physical co-presence and visibility may account for differences in interpersonal attraction between interlocutors in CMC and FtF communication. The second aim was to assess social presence and identifiability as underlying mechanisms in the relation between communication medium and interpersonal attraction. An experiment among 105 unacquainted cross-sex dyads with a 2 (visible/invisible) × 2 (physical co-present/physically not co-present) between-subjects design, revealed that while visibility had a direct negative effect on interpersonal attraction, it positively influenced attraction through social presence and identifiability. In addition, people who were physically co-present were more attracted towards each other because they felt more social presence. Finally, both co-present and visible interactants were less attracted towards each other. This study provides support for social presence theory by revealing that both physical co-presence and visibility enhance social presence. In addition, our results have implications for theory and research regarding the effect of cue-rich CMC on interpersonal attraction.

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1. Introduction

The study of the effects of computer-mediated communication (CMC) on initial interactions has evolved from the early belief that CMC is inherently impersonal (e.g., Culnan & Markus, 1987; Gibbs, Ellison, & Lai, 2011) to the acceptance that CMC users can indeed communicate affection towards one another (Tidwell & Walther, 2002; Walther & Parks, 2002). Although recent studies on the effects of CMC demonstrate that emotionally intimate interactions are possible in CMC (e.g., Antheunis, Schouten, Valkenburg, & Peter, 2012; Walther, 1992), this research is mainly based on text-based CMC. However, present-day CMC applications are becoming increasingly rich, offering both verbal and nonverbal cues, and are no longer merely text-based. With the exception of haptic cues and smell, new CMC technologies are capable of transmitting many of the same cues as in face-to-face (FtF) communication. Hence which features of non-text-based mediated interactions help or hinder interpersonal attraction has remained largely unexplored. This leads to the question of whether we can still expect a difference in interpersonal attraction between these communication modes and if so, what causes this difference.

Based on earlier research on CMC effects, we propose that there are two factors that may explain differences in interpersonal attraction between non-text-based CMC, from now on referred to as cue-rich CMC, and FtF communication. The first factor is physical co-presence (Manstead, Lea, & Goh, 2011). When communicating via an electronic medium like a computer, communicators are geographically dispersed. It has been proposed that when communicators are physically co-present they are more likely to feel a sense of connection with one another which can, in turn, result in more interpersonal attraction (Mehrabian, 1969). Alternatively, a mediated conversation, compared to a physically co-present conversation, might provide some protection against the impact and perception of rejection cues. In this way, mediated interactions can arguably liberate communicators from the social constraints which exist in physically co-present interactions (Manstead et al., 2011) which can also lead to more interpersonal attraction.

A second factor which may explain differences in interpersonal attraction between CMC and FtF communication is the aspect of visibility (Clark & Brennan, 1991). Depending on what medium they

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are using, people interacting through CMC may not have visual cues available to them. In the present study, we analyze the effect the addition of a visual channel has on interpersonal outcomes. Studies show that conversations where both communicators can see each other are richer and allow for the transmission of more cues than invisible interactions (Tanis & Postmes, 2007). This, in turn, results in positive interaction outcomes (Grayson & Coventry, 1998). Alternatively, being invisible in an interaction implies that communicators are to some extent unidentifiable, which can lead them to feel a sense of freedom from social restrictions normally present in interactions with visibility (Lapidot-Lefler & Barak, 2012; Manstead et al., 2011). This can allow people to be more expressive in their feelings, whether affectionate or aggressive (Lapidot-Lefler & Barak, 2012). Thus the first aim of our study is to discover what role physical co-presence and visibility play in interactions with regards to how interpersonal attraction is achieved.

Furthermore, we propose that two underlying mechanisms mediate the relation between physical co-presence, visibility and interpersonal attraction. In this research we examine the role of social presence and identifiability as possible explanations for the enhancement or impairment of interpersonal attraction. Social presence is believed to enhance communicators' awareness of one another and, in turn, foster interpersonal relationships (Nowak & Biocca, 2003). Identifiability has also been found to increase awareness which can result in favorable interaction outcomes (Matheson & Zanna, 1988; Walther, 2011). When communicators feel less identifiable in a communication, and hence more anonymous, they may become less concerned with social evaluation and the focus of the conversation can become less personal and more task-oriented (Lea, Spears, & de Groot, 2001; Zimbardo, 1969). Thus, the second aim of this study is to examine the validity of two potential mediators that may account for the effects of cue-rich CMC on interpersonal attraction.

In sum, this study aims to discover what aspects of cue-rich CMC interactions contribute to an enhancement of interpersonal attraction among its communicators. In most earlier studies, visibility and co-presence are confounded, such that participants that have mutual visibility are also co-present and participants who are physically distant often cannot see each other. However, in reality, the two are clearly different. Nowadays, with modern technology, it is increasingly common to be able to see each other while not being co-present. For this reason in this study we experimentally compare initial interactions between unacquainted individuals in four communication conditions: FtF communication, FtF communication with a screen separating the communicators to ensure mutual invisibility, audio-only communication and audiovisual communication.

2. Theory

The primary focus of this study is to determine which aspects of cue-rich CMC enhance interpersonal attraction. Interpersonal attraction, or the positive feeling of liking towards another individual (Dickens & Perlman, 1981), is a frequently studied concept in the CMC literature and believed to be an important determinant for friendship formation (e.g., McKenna, Green & Gleason, 2002). In this study we focus on two concepts that are likely consequences of visible and/or co-present interaction conditions and have been consistently linked to positive interaction outcomes, namely social presence and identifiability (Lapidot-Lefler & Barak, 2012; Ogara, Koh, & Prybutok, 2014). These concepts may directly affect attraction, so these concepts might be mediators in the relation between visibility, physical co-presence and interpersonal attraction. For this reason we start by discussing how social presence and identifiability on their own may influence attraction. After that, we propose how these concepts may function as underlying mechanisms in explaining the effects of visibility and co-presence on interpersonal attraction.

2.1. Social presence

Social presence was originally defined as the degree of salience of the other person in the interactions and the consequent salience of the interpersonal relationships (Short, Williams, & Christie, 1976) and later on simplified to "the feeling of being with another in a mediated environment" (Biocca, Harms, & Burgoon, 2003, p. 14). Social presence is believed to be more easily achieved in communication environments that allow for the transmission of both verbal and nonverbal cues (Kim, Frank, & Kim, 2014). More specifically, according to Social Presence Theory (SPT), a reduction in the ability to transmit nonverbal cues in an interaction leads to an impairment in the ability to transmit and receive interpersonal impressions (Short et al., 1976; Walther, 1992). The theory assumes that social presence enhances involvement or engagement in an interaction resulting in more psychological closeness among participants (Biocca, Harms, & Gregg, 2001; Mehrabian, 1969).

In the literature, social presence is linked to a variety of positive psychological effects such as immediacy (Biocca et al., 2003), involvement and intimacy (Walther, 1992). Immediacy is seen as a composite of involvement and affection and viewed as the perception of closeness and interpersonal attraction which is created through an interaction between two individuals (Houser, Horan, & Furler, 2007; Walther, Loh, & Granka, 2005). When social presence is high, communicators in a mediated environment experience a sense of being together and hence interact as if they are physically present (Felnhofer et al., 2014). Moreover, social presence is believed to make the messages exchanged between people more personal and emotional (Rice & Love, 1987; Walther & Burgoon, 1992). As a result, interpersonal attraction among individuals is enhanced, both in an interaction and in the process of relationship development (Biocca et al., 2003; Short et al., 1976). Thus, social presence is a process with desirable outcomes and believed to carry primarily positive relational meanings (Manstead et al., 2011). For this reason our first hypothesis, which is visualized in Fig. 1 path 1, states:

H1. Social presence enhances interpersonal attraction.

2.2. Identifiability

A second concept that may influence interpersonal attraction is identifiability. Based on the social identity model of deindividuation effects (SIDE; Reicher, Spears, & Postmes, 1995) we expect that when individuals feel less identifiable, they are likely to be less attracted towards one another. SIDE states that when individuals feel less identifiable, their sense of individuality and self-awareness is reduced (Spears & Lea, 1992). As a result, interactants become deindividuated, that is separated from the consequences of their actions and are likely to "forget their audience" (Spears & Lea, 1994, p. 431). When individuals feel individuated they are less concerned with self-presentation and more likely to behave anti-normatively (Spears & Lea, 1994). Hence, interpersonal attraction is difficult to achieve. In contrast, when interlocutors feel identifiable they feel more self-aware and more aware of the people with whom they communicate (Haines & Mann, 2011). This can decrease the psychological distance between them and hence enhance interpersonal attraction (Walther, 1992).

Research on identifiability supports the claim that once concerns about self-presentation fade, individuals shift their focus and