1   Introduction

A social psychological analysis of computer-supported social interaction

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The use of computer-supported social interaction (CSI) has become a primary feature of communication among individuals, due in part to its structural features (e.g., freedom of time and geographical constraints) and psychological features (e.g., anonymity). As a consequence, many social scientists have investigated the social processes in computer-supported interactions, including online impression formation, relationship development, and group dynamics. Because individuals communicate via the use of computers in many personal, educational, and professional settings, it is important to continue and encourage the study of social processes in such environments. These studies have identified a number of influences on the behaviors (i.e., conformity, economic choices, etc.), thoughts (i.e., attitude change, impression formation, etc.), and, to a lesser degree, physiological/emotional states of people involved in computer-supported interaction.

The goal of this volume is to impose the global theoretical framework of the *person-by-situation interaction* (Snyder and Ickes, 1985) onto the study of computer-supported social interaction. This perspective recognizes that people are affected by the expectations and limitations of social situations, but to varying degrees. The extent that a person will respond or react to social forces has been found to depend on the levels of internal characteristics (e.g., self-esteem) that a person brings with them to the social situation. For example, social psychologists have observed that those individuals who express higher levels of self-esteem are more resistant to social pressure and as a result are less likely to conform to the influence of others (Baumeister, 1982), and are more likely to persist in the face of obstacles to their goals (Gist and Mitchell, 1992). Originally posited by Lewin (1935), reinvigorated by Mischel (1968), and then tested and validated in decades of social psychological research across a broad range of social phenomena, the explanatory rubric of social

1

psychology can now be applied to the communication forums that have emerged in the relatively brief existence of internet technologies. Before discussing the details and benefits of the person-by-situation interaction perspective, we will review the existing theoretical frameworks that have been applied to computer-supported interactions.

Contemporary literature reviews

In reviewing the available literature on computer-mediated communication, a number of patterns can be observed. To date, the largest amount of research and theory on this topic has focused on the applied contexts of collaboration and team performance, as summarized in Bailey and Kurland (2002), Baltes *et al.* (2002), Coovert and Burke (2004), Gibson and Cohen (2003), Hertel *et al.* (2005), Hinds and Kiesler (2002), Kreijns *et al.* (2003), and other treatises. These works present theories from industrial and organizational psychology, as well as in human resource management. Broader psychological issues of online impression and relationship formation, as well as general patterns of group dynamics, have received less attention from psychologists. The existing psychological theories and research on these more general social issues have been summarized formally in a handful of review papers (McKenna and Bargh, 2000; Riva, 2002), including an entire volume of the *Journal of Social Issues* (2002, v. 58), as well as in a few edited books (Amichai-Hamburger, 2004a; Avgerou *et al.*, 2004; Gackenbach, 1998; Joinson, 2003; Riva and Galimberti, 2001; Thurlow *et al.*, 2004).

In Gackenbach's (1998) seminal text, the authors described the potential for internet technologies to both *enhance* and *transform* (Haythornthwaite *et al.*, 1998) a broad range of psychological and social phenomena as they emerged in the first few years following the inception of the world-wide web. Following the description of those possibilities for enhanced business, social, and educational practices, Riva and Galimberti's (2001) book contributed an impressive depth of detail on the status of virtual reality use in psychological research and practice, as well as ventures in telemedicine and e-therapy. The text also included some analysis of computer-mediated social interaction from psycholinguistic and communications perspectives. Galimberti and Riva (2001) expand on the idea that computer-mediated communication involves a negotiation of shared meaning with strong hermeneutical overtones:

Context may be co-constructed by social actors, but they use communication to exchange meanings, not pieces of information. More precisely, the content of communication is interpretations of the situations which actors are involved in.

Introduction   3

In this sense, the most effective way of clarifying the meaning of messages is to relate them to a shared context of meaning. (p. 14)

Joinson's (2003) text cast a wide net in documenting the pervasive prosocial outcomes (i.e., internet dating and friendship formation) and deviancy (i.e., deception) that had been observed to date, but also inferred a theoretical framework that would characterize the global effects of internet technology for social relations, as noted below. Shortly thereafter, Thurlow *et al.* (2004) published a textbook for undergraduate audiences that also organized the existing phenomena in a coherent structure involving *learning* and *critiquing* of theories, *application* of social internet technologies, and *exploration* of newer uses of the tools (e.g., in legal and health communications). The authors in Avgerou *et al.*'s (2004) text blended both sociological and information systems perspectives to provide an interesting account of "innovations" and "actors" that are embedded in computer-mediated social contexts with functional interdependence.

Bottom-up approaches

Each treatise has summarized the existing theory and research on the implications of the internet for social contexts. Each has organized the available theories by categories of group dynamics, online relationships, and social influence, among others. Each has also drawn general conclusions about computer-mediated communication in a *bottom-up* fashion by noting general effects of technology on social communication and relationships.

Technological and social determinism

Sherman's (2001) chapter in Riva and Galimberti (2001) summarized the classic theories (e.g., media richness, Daft *et al.*, 1987; social presence, Short *et al.*, 1976) that differentiate computer-mediated modes of communication modes from more traditional ones. Spears *et al.*'s (2002) article in the *Journal of Social Issues* parsed out global assumptions made by classic theorists of CMC into *technological deterministic* models and *social deterministic* models. In technological deterministic accounts, technology has universal effects on social processes, which can lead to a widening of communication options on the one hand and a limit to the number of available social context cues on the other (Kiesler and Sproull, 1992). Walther (1996; Tidwell and Walther, 2002) has offered to explain how users can alter their information-seeking and behavioral strategies

to ask deeper questions and adhere more strongly to norms of disclosure reciprocity in the service of impression and relationship formation when communicating with others via relatively impoverished media.

In social deterministic accounts, individual users of technology construct their own meaning, which can lead to a decrease in self-regulation, and an enhanced sensitivity to social information and expectations. Social influence becomes very strong when online, but taking cues from others can have prosocial or antisocial influences on a person's thoughts, feelings, and behaviors, depending on the tone of the social climate that emerges in a particular interaction setting (Spears *et al.*, 2002).

Interactionist response

Spears *et al.* (2002) conclude that an interactionist model of social and technological influence may better explain variability in both the use of technology for social purposes and the tendency for technology to enhance social interaction. In sum, observations of social behavior in computer-mediated settings often parallel those in face-to-face contexts, but the social qualities of communication and cognition are also commonly enhanced by specific communication modes. Personal influences on online cognitions and behaviors are noted where the authors discuss individuals' strategic uses of social technologies (i.e., connecting to anonymous, online forums populated with like-minded others) as having cognitive effects on those users (i.e., enhanced social influence and attitude polarization).

Similarly, Joinson (2003) presented the Strategic and Motivated user model that includes Expected and Emergent effects (SMEE). This model accounts for users' selections of communication media and forums as a determinant of the effects of those media (i.e., cognitive changes in self-awareness and social identity salience; behavioral changes in language use and self-disclosure, etc.). These changes in users' cognitive and behavioral states are then construed to influence future choices of communication media. Elements of these ideas were also addressed in Mantovani's (2001) chapter in discussing the uses of and reactions to the computer-mediated social context. Attending to the ability for individuals to choose communication media for various purposes, Mantovani denotes that user goals of "information seeking" and "social gathering" both involve social interdependence, but with differing amounts of synchronicity and interactivity between communicators. These ideas are congruent with the intended uses for the world-wide web from its creators: to share

information, to develop a shared knowledge base, and to connect like minds (King *et al.*, 1997).

Top-down theories

Some of the available reviews and books on computer-mediated communication have sought to structure the available theories and research in a *top-down* fashion. For example, Galimberti and Riva's (2001) chapter applied theories of psycholinguistics and communication, in ephemeral terms, to characterize online social contexts. Sherman's (2001) chapter in the same text also applied social cognition theories of bias in social information processing to characterize impression formation and categorization processes among online interactants (see also Rafaeli *et al.*, 2004). Authors in Amichai-Hamburger's (2004a) text applied topic-specific social psychological principles and theories to specific domains of online communication, including persuasion (Guadagno and Cialdini, 2004), prosocial behavior (Sproull *et al.*, 2004), and prejudice (Glaser and Kahn, 2004).

Similarly, Spears *et al.* (2002) provided a notable theoretical framework for conceptualizing online group dynamics in light of a Social Identity model of Deindividuation Effects. Their SIDE model characterized the effects of subjective group norms on spontaneous social identity salience that had been inferred and tested previously from observations of offline groups (Hogg and Abrams, 1988; Reichert *et al.*, 1995; Tajfel and Turner, 1986). The existing *social identity* framework of group dynamics was then applied against the potential for the internet to involve distanced users in meaningful social categorizations and to provide enhanced group identity salience via anonymous meeting forums. Thus, the online context was illustrated as a ripe field for potent social influence.

Amichai-Hamburger's (2004b) chapter discusses the existing research that involves strategic choices of social internet technologies as a function of personality traits, and calls for more research on the interaction of technologies and individuals. The author notes Kraut *et al.*'s (2002) observations that more extraverted individuals are more likely to use internet technologies in order to interact directly with others. Amichai-Hamburger's research has also shown that, when more introverted or neurotic individuals seek direct interaction with others online, they are more likely to express aspects of their self-concept that are not expressed during typical face-to-face interactions (i.e., "Real-Me" characteristics; Bargh *et al.*, 2002; see also Maldonado *et al.*, 2001). The author also speculates on how an individual's levels of need for closure, need for

cognition, attachment style, and locus of control may affect their goals, intentions, and strategies when spending time connected to the internet.

Interactionist framework

To date, a handful of chapters in separate texts have posited an inter-actionist framework in analyzing computer-mediated communication. These inferences have been drawn from topic-specific research findings that personality characteristics, identity content, and personal biases can moderate the choice and impact of communication media. What is needed at this point is to apply the rubric of social psychology more systematically onto the fundamental processes of impression, relationship, and group processes online with the goal of identifying new directions of research in the growing modes of social connectivity.

This text systematically applies the *person-by-situation* rubric of social psychology onto computer-mediated communication by including the *technological* source of influence. By beginning with a broad, domain-level framework and then imposing this structure onto the existing works, the potential for more comprehensive analyses and applications of those works is increased. The social psychological orientation is unique in that it provides comprehensive, pluralistic explanations for socio-behavioral and socio-affective levels of analysis in addition to the socio-cognitive level. Thus, online behaviors such as questioning or disclosing information can also be explained, and programs can be proposed for improving the efficacy of online social support networks as well as electronic group decision making.

In this text, prominent psychologists summarize the existing research in their respective areas of expertise. They then organize these findings within the established rubric of social psychology. Each author also speculates as to how other sources of influence that have not yet been tested may affect individuals who communicate online. By identifying the influences that shape individuals' thoughts, feelings, and behaviors online, and evaluating the relative strength and interactive properties of those sources of influence, other scientists may make use of this broad theoretical framework to make recommendations for improving social and collaborative relations that are supported by computers. In addition, the potential sources of influence that have not yet been explored are outlined in more detail, thus identifying future directions for research and intervention.

Many who study computer-mediated communication are social psychologists. In general, social psychologists have been concerned historically with evaluating how strong the power of the situation can

be in influencing how people relate to, think, and feel about others. The preference of a situational explanation of social phenomena is often portrayed to be at odds with longstanding, classic psychological explanations of individual behavior that have focused on the validation of stable traits that characterize individuals (e.g., self-monitoring) and correspond to behaviors (e.g., conformity). Kurt Lewin's seminal propositions, that those inner, personal, and external social factors would be shown to combine in meaningful ways to influence people's behaviors, have been tested and elaborated upon by social psychologists in the last seventy years.

Person-by-situation interaction defined

Theory and research on social thought, feeling, and behavior that involves the person-by-situation interaction have become integrated into contemporary instructional texts for college students on social psychology courses (Breckler *et al.*, 2006; Myers, 2005). Myers (2005) presented a metaphor about the complexity of influences that direct human thought, feeling, and behavior:

This great truth about the power of external pressures would sufficiently explain our behavior if we were passive, like tumbleweeds. But unlike tumbleweeds, we are not just blown here and there by the environment. We act; we react. We respond, and we get responses. We can resist the social situation and sometimes even change it. (p. 203)

In a set of papers, social psychologists Mark Snyder and William Ickes have qualified these basic assumptions to allow for fundamental influences to *interact* with one another in meaningful ways (Ickes *et al.*, 1997; Snyder, 1983; Snyder and Ickes, 1985). In their analyses, influences on behaviors, thoughts, and feelings in social contexts interact when the effect of one influence (i.e., the power of the situation) depends on the state of another factor. In a contemporary example of distanced work, members of an ad-hoc committee of scientists from several nations that have been assembled by the World Health Organization are charged with the task of preventing a global pandemic of the bird flu. Members' individual decisions to share or withhold a risky, potentially controversial solution with the rest of the group will depend on each member's personal goals (i.e., to achieve the optimal solution to the problem at hand, or to avoid being ostracized from the think tank), and whether those scientists will be identified or left anonymous in meeting minutes or public reports.

One type of interaction among personal and social influences involves the multiplication of the two. Since both influences form the product of the expression, extreme levels of one factor can essentially negate the

other factor (as when the extreme factor is near zero) or increase the weight of the other factor geometrically. Snyder and Ickes (1985) differentiated cases when personal variables moderate the impact of the situation, as well as the converse. They illustrated their points with observations that individuals who express relatively low levels of self-monitoring are more likely to resist social pressures to express particular attitudes, or otherwise behave differently from situation to situation. Conversely, social situations with particularly weak or unclear expectations for behavior (e.g., a Yahoo! American Idol chat room) can allow for individuals to express aspects of their self-concepts that are central to their identities but that also possess some risk in being a target of prejudice by others. The multiplicative interaction of personal and social influences has been shown to account for significant amounts of variability in people's behaviors, thoughts, and feelings, above and beyond the effects of each influence alone, in research on many social issues (Snyder and Ickes, 1985), including the effects of prejudice (Steele, 1997), aggression (Baumeister *et al.*, 2000), and persuasion (Haugtvedt *et al.*, 1992).

In contemporary social contexts involving internet connectivity, the additional factors of media richness and social presence must also be considered. In a *technological x social interaction* perspective, the constraints imposed by less rich distanced technologies can either increase or decrease the impact of the social influence when trading emails or posting messages on a blog. For example, research by Wesselmann and Williams (this volume) has shown that reactions to social ostracism are characterized by quiet withdrawal in a typical offline setting, but that ostracized participants display a *virtual bravado* in chatroom settings by continuing to send messages to the group. The interaction of technological and social influences is also illustrated in scientific evidence reported by Green and Carpenter (this volume). They find that the willingness to trust another person when online depends on the perceived similarity between parties, as well as the ability to verify their identity through social ties.

The features of the communication media that are chosen for group interactions can also make or break the quality of any decisions or judgments that are reached. For example, important research on electronic teamwork has found that the perception of anonymity that social tools create may help those teams make better decisions by increasing the likelihood of participation from minority factions (McLeod *et al.*, 1997). Dennis *et al.* (1999) also found that, in group tasks requiring greater interdependence (e.g., decision-making contexts), only groups composed of all women were able to benefit from using richer media for communication.

We can also observe *triple interactions* among the technological, social, and personal sources of influence: when online, which individuals are

impacted greatest by which situations? Thus, it can be observed that high self-monitors may be particularly likely to be influenced by participation in online groups that have clear, strong expectations for members. Conversely, low self-monitors may express their political beliefs with solid consistency, regardless of whether they are asked when they are online or offline, or are in the presence of judgmental others. The observed evidence for the SIDE model offers strong support for the *technology x social x personal interaction*. Spears *et al.* (this volume) have found that the degree to which individual members of online groups will shift their attitudes in response to other members depends on each member's level of identification with the group ideals, but that the salience of the group context depends on the degree of anonymity allowed by the mode of communication. Also, Sassenberg (this volume) reports that the strength of social influence online depends on the target's level of private self-awareness.

Research on electronic teamwork has also found support for the *technology x social x personal interaction* perspective. For example, Hollingshead (this volume) shows how the amount of information shared during computer-mediated group discussions depends on the idiosyncratic goals that each group member may enter with. Competitive member goals (such as to be liked, or to be viewed as the most competent) can lead those members to focus their contributions on advocating for their initially preferred option, without necessarily attending to new information that might disconfirm their belief. Moreover, Abele (this volume) discusses how the nature of dependencies affects interpersonal impressions. These initial impressions affect subsequent behavior in a way that often confirms the impressions.

Dynamic interactionism

Using Snyder and Ickes' theoretical framework, explanations of social processes can better fit reality by accounting for the tendency in individuals to respond to situations differently depending on our unique attributes as individuals. The influences of social and personal factors can also be correlated. Snyder and Ickes (1985) elaborated on how technology mode, social context, and personal characteristics can be dynamic in their influences:

In each case individuals appear to gravitate actively toward social situations that will foster and encourage the behavioral expression of their own characteristic dispositions and interpersonal orientations. To the extent that they succeed in regularly and consistently spending time in these situations, and to the extent that these situations promote the regular and consistent display of behavioral

manifestations of their characteristic dispositions, these individuals will come to display the cross-situational consistency and temporal stability that we regard as personality. (p. 918)

Thus, they acknowledged how a person's choice of situations to experience, or groups to belong to, is dependent upon their idiosyncratic values or capabilities (e.g., a person with liberal political affiliations might seek out groups of other liberals online), but that continued exposure to those environments can amplify the person's predisposed interest (e.g., that person begins contributing to activist campaigns of liberal orientation).

Moreover, Snyder and Ickes also acknowledged the potential for individuals to be active participants in social contexts by influencing other group members and being instrumental in negotiating norms. The authors illustrated this principle with evidence on individual differences in perceived locus of control (Rotter, 1966). For example, individuals who attribute their personal outcomes as being internally controlled are more likely to expend effort in overcoming obstacles to personal goals, and are also more successful in influencing others when motivated to do so (Lefcourt, 1982). Thus, intentional influence among communicators in online social forums may be a function of the amount of perceived "congruency" between the individuals' dispositional preferences for the forum, and what the forum actually provides (Secord and Backman, 1965; Snyder and Ickes, 1985).

Arguably, the greatest potential value of applying the *person-by-situation* framework to CSI is in the illumination of dynamic interactionism at work. By identifying the ways that individuals can become empowered by social technologies (especially those individuals who are disadvantaged in offline contexts), we can then make recommendations for programs to benefit those individuals. For example, people who are stigmatized by others in the physical world can achieve satisfying, enjoyable relationships online. McKenna and Bargh (1998) reported that people who are apprehensive about being evaluated on the basis of a potentially stigmatizing identity feature (e.g., a homosexual orientation, speech impediment, etc.) can reduce their apprehension via online group participation, and gain confidence in disclosing that feature to friends and family offline. In general, people around the world who have been attributed with lower status can exert power by connecting with like-minded others using networked computers. However, McGarty, Lala, and Douglas' observations (this volume) of online social action groups note that the road from opinionated group discussion to concerted effort is often peppered with discontent, and that consensus among those 'like-minded' individuals is seldom reached. Also, Sassenberg (this volume) reports that individuals' choices