Information-Seeking Strategies, Uncertainty, and Computer-Mediated Communication
Toward a Conceptual Model

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This article argues that existing theory and research on computer-mediated communication (CMC) provide a limited view of information-seeking behavior and proposes a conceptual model for its examination via CMC and new media. Although most CMC environments eliminate or severely reduce nonverbal and contextual information available to address uncertainty, form impressions, and develop relationships, such environments offer alternative mechanisms for acquiring social information about others. The article discusses strategies for seeking social information and identifies factors influencing their selection from alternatives, incorporating them into a conceptual model. Finally, 2 promising approaches for examining the effects and effectiveness of social information seeking in CMC are described, with an emphasis on how the proposed conceptual model can aid in the development of each.

The advent of computer-mediated communication (CMC) as a mechanism for the formation and maintenance of interpersonal relationships poses interesting theoretical questions, especially in regard to the acquisition and interpretation of interpersonal information as such relationships begin. In one sense, CMC might be expected to

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dampen information acquisition, not only in terms of restricted interaction with a target, but also through the mitigation of extra-interactional observations. On the other hand, variations in CMC, and other technological developments, open up alternative means for gathering information not present in traditional face-to-face (FtF) contexts. This highlights the need for incorporating these alternative strategies and mechanisms into our current theorizing. At present, it is unclear how alternative sociotechnical mechanisms are employed in attempting to learn about others and whether existing theories of CMC or of relationship development can account for them.

Numerous descriptive and experimental studies attest to the capacity for, and some processes underlying, impression formation and relationship development through CMC (e.g., Parks & Floyd, 1996; Ramirez & Burgoon, 2001; Utz, 2000; Walther, Slovacek, & Tidwell, 2001). Much of this research has focused on process-level behaviors that potentially differentiate online from offline processes; even early research coded participants' communication comments as they interacted in FtF or CMC groups (e.g. Hiltz, Johnson, & Turoff, 1986).

A side effect of this focus on online interaction, however, and how people come to know each other using it, is that it has for the most part emphasized the exchange of personal information through direct participation in interaction. Although interaction between persons may be the paradigm model of interpersonal communication, abundant theorizing and research on the acquisition of information for interpersonal uncertainty reduction suggests that this process represents only a part of the picture, at least in FtF realms. As Berger (1987) notes about interaction, "[I]t is naïve to assume that persons gather all their information about each other in such contexts" (p. 47).

The purpose of this article is to present a conceptual model for examining information seeking in CMC and new media. We limit our discussion, however, to social information seeking, a much understudied area of CMC. Although technological advances have produced new tools allowing individuals to seek and acquire information (e.g., Littleton, 1998), studies specifically investigating their use to seek information about others have not surfaced. If only anecdotally, though, we know communicators use email, search engines, and other online tools to acquire information about others. This information, in turn, affects relationships with and impressions of targeted others. We begin by offering a brief review of current theoretical perspectives and highlight their (in)ability to address information-seeking behavior. Next, we lay the groundwork for our conceptual model. First, we discuss commonly used information-seeking strategies, particularly their manifestations in mediated environments. Second, we identify several factors that influence strategy selection. In so

doing, we hope to sidestep many of the problems encountered by media selection models, or "rational choice" models of technology, that identify characteristics of technologies and messages in an effort to specify their optimal match. Rather than focusing on media selection concerns (e.g., choices *between* technologies), we address *within* CMC concerns in the employment of different information acquisition strategies.

INFORMATION SEEKING AND CURRENT THEORETICAL PERSPECTIVES

Early theoretical approaches failed to consider the active role of individuals in the communication process, much less information seeking, opting instead to emphasize channel effects. The theories that Culnan and Markus (1987) collectively described as the "cues filtered-out" share assumptions that we do not form impressions of others online, because the flattening effect of the medium turns our focus away from others, toward the self and the task, promoting more impersonal, hostile, and predominantly task-oriented messages (for review, see Walther, 1996). As a result, such perspectives assume that the ability to address uncertainty and acquire social information is severely limited when a medium reduces or eliminates nonverbal and contextual cues. In other words, these early perspectives do not acknowledge information-seeking behavior as a means of compensating for the structural limitations of a medium.

More contemporary approaches draw different conclusions about the role of communicators in "reduced cues" environments and hold some promise for the study of information-seeking behavior. Theoretical perspectives such as the social identification/de-individuation model (SIDE; Lea & Spears, 1992, 1995), social information processing theory (SIPT; Walther, 1992; Walther & Burgoon, 1992), and the hyperpersonal perspective (Walther, 1996) argue that individuals engage in strategic cognitive deliberation and communicative behavior to compensate for media limitations. Briefly, the SIDE model draws on social categorization processes to address how individuals in CMC adjust cognitively to form impressions of others with minimal information (Lea & Spears, 1992, 1995); the extent to which an individual versus group identity is salient is predicted to influence target attributions and perceptions. SIPT proposes that individuals not only adapt to the remaining cue systems, including conventional message content features and linguistics (Walther, 1992), but also draw on available chronemic factors, which force them to imbue their messages with social information, as well as instrumentally oriented content (in the context of task-related discussions at least; see Walther & Tidwell, 1995). The hyperpersonal perspective extends some of the issues

introduced by SIPT and focuses more explicitly on the processing of information sought and given online. Similar to the SIDE model, the hyperpersonal perspective proposes that receivers engage in attributional processes to reduce uncertainty and, in doing so, are susceptible to making exaggerated attributions based on limited information. It also addresses how sender, receiver, channel, and feedback processes jointly endow CMC with the potential to produce "hyperpersonal" effects or outcomes surpassing those achieved through FtF interaction.

Each in their own way, the SIDE model, SIPT, and the hyperpersonal perspective propose explanations for different kinds of information seeking in response to the limited number of cues and the alternative cues that they generate in CMC. However, the implications of the more socially oriented CMC theories for information seeking are not yet clear. With regard to the SIDE model, it is unclear how online group members interpret potentially individuating information through text-based interaction. SIDE's examination of individuating information equates such data with visual cues and physical appearance, but individuating content has not been examined. Any individuating knowledge, according to SIDE, might undo the group identity that is critical for the attraction dynamics to operate. Thus, active information *searching* about online partners as persons seems antithetical to the theory.

SIPT research has shown that in some ways there is little unique to CMC, and in other ways, the channel's dynamics accentuate known characteristics of information exchange. Similar to uncertainty reduction theory, SIPT research has examined the effects of anticipated future interaction as a motivator of information seeking online (Walther, 1994). In doing so, it has found that CMC interactants are even more sensitive to variations in anticipated longevity than are FtF partners. When the anticipation is controlled, the communication channel does not distinguish subsequent relational levels between CMC and FtF communication. SIPT has also highlighted some unique information aspects of the medium. Walther and Tidwell (1995) found that variations in the apparent timing of email messages—as seen in the time stamps common to most systems—interact with message content to affect perceptions of dominance and affection.

Moreover, the SIDE model, SIPT, and the hyperpersonal approach await research concerning threshold levels of information exchange. SIDE and the hyperpersonal perspective both assume that minimal information about partners is overattributed and leads to exaggerated perceptions of online partners. Whereas SIDE depends on this minimization as a constant state of CMC, the hyperpersonal perspective suggests that individuals go beyond group-level perceptions toward idealized, yet individuated knowledge structures. What kind of temporal sequence or information trigger leads to this shift has not been explored. Conversely, SIPT

suggests that the more information about a partner the better, to a plateau of normal impressions. How do we reach this plateau? What information frequency or critical content is necessary and sufficient to reach it? Is it sufficient that online partners continue to show up (in social spaces) or make contributions to their virtual tasks (in online work groups) to trigger perceptions of trust and liking (e.g., Weisband & Atwater, 1999)? These questions about information seeking, giving, and processing await further research in the development of existing CMC theories.

TOWARD A CONCEPTUAL MODEL OF SOCIAL INFORMATION SEEKING IN CMC AND NEW MEDIA

The acknowledgment of CMC and, by extension, new media and technology, as valid tools for social information seeking is a relatively recent occurrence. The model we present is specifically developed to address how communicators engage in information seeking via CMC and new media (Figure 1). Within our framework, information seeking is conceptualized as the pursuit of desired information about a target. It is commonly treated as an aspect of interaction, yet the pursuit of information via CMC and more traditional modes of communication may take several forms varying in directness, effectiveness, and efficiency and be directed at achieving multiple simultaneous ends. In this regard, the general framework presented here incorporates alternative information-seeking strategies as a central mechanism influencing outcomes such as impression and relationship development. Furthermore, it acknowledges that the use of CMC and new media for social information seeking is likely embedded within a larger approach to information seeking, drawing on both mediated and nonmediated communication for achieving goals; our focus, however, is on the former rather than the latter.

The concept of uncertainty is not privileged in its role in the process of information seeking, nor as a motivator of information-seeking behavior in the present framework. Rather, uncertainty is conceptualized as a cognitive state that fluctuates based on the discrepancy between the information desired and the quality of that acquired. This is particularly important as information acquired through CMC, much like information acquired through other venues, has the potential to influence the level of uncertainty present (e.g., Planalp & Honeycutt, 1985). As such, uncertainty is viewed as a gauge for monitoring information-seeking effectiveness.

Our effort to outline a general framework for examining information seeking in CMC is embedded in three central assumptions. First, information seeking is a goal-driven activity, directed at fulfilling a single goal or multiple goals. That is, communicators do not pursue information as

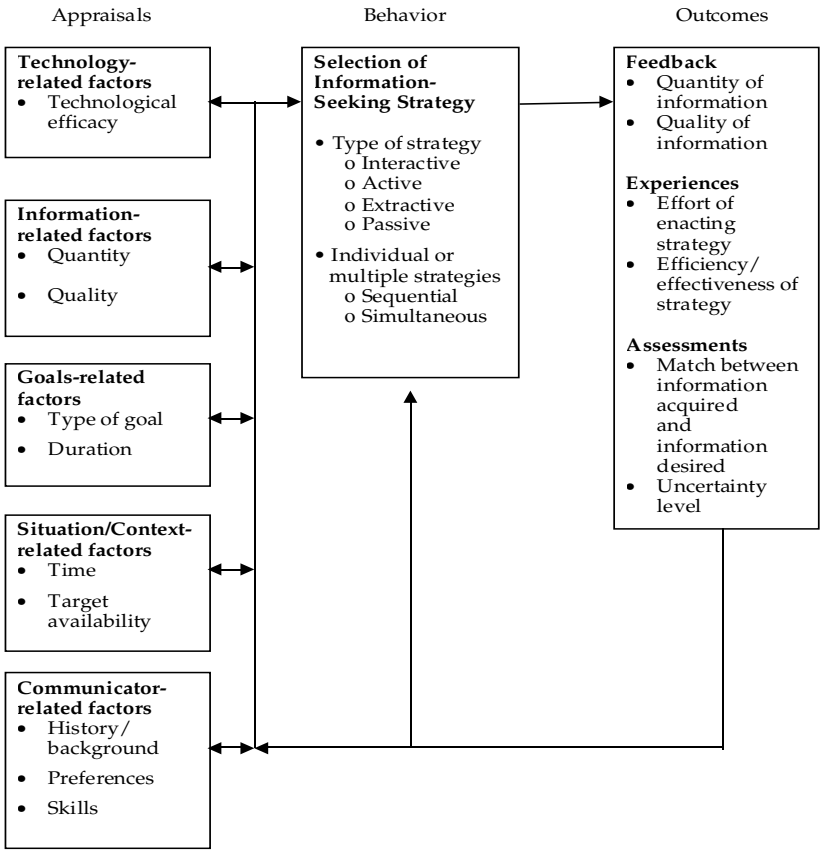

Figure 1. Conceptual Model of Social Information Seeking via CMC

an end to itself; information is sought as a means of achieving social, instrumental, and emotional goals, or a combination thereof. Information acquired is evaluated in accordance with the salience of goal(s), and subsequent behavior is affected by the degree to which the information aids in goal achievement. Second, information-seeking behavior is multifaceted. As outlined below in greater detail, information seeking may take several forms (Berger, 1987; Berger & Bradac, 1982). Some forms require cooperation between communicators, whereas others can circumvent the need for human interaction. Furthermore, it is likely that the more important the goal, the greater number of strategies a communicator will employ utilizing CMC. Third, CMC liberates communicators to seek information in new and unique ways. Contrary to some widely held beliefs about the nature of CMC as a tool that constrains behavior, we contend

that it frees communicators to pursue information in qualitatively significant ways. CMC offers unique manifestations of strategies available through other communication forms. CMC—and by extension the Internet—also offers several advantages otherwise unavailable in FtF interaction, including the ability to employ several strategies during the interaction itself.

Information-Seeking Strategies in CMC and New Media

The manner in which social information is acquired should be a central influence upon how we perceive others. Although research examining information-seeking strategies in FtF contexts has amassed a sizable body of knowledge, to date, few studies have explicitly done so in CMC (for exceptions, see Pratt, Wiseman, Cody, & Wendt, 1999; Ramirez, 2001; Tidwell & Walther, in press). Our primary goals in this section, however, are to illustrate how these strategies manifest themselves and highlight one set of strategies, which we label "extractive," that are unique to CMC and new media; these latter strategies have received attention in other domains (see, e.g., Cline & Haynes, in press) but have yet to be examined in the current context. No published studies, at least to our knowledge, compare the effectiveness or effects of these manifestations in CMC.

Interactive strategies entail direct interaction between communicator and target during which different tactics are enacted to elicit desired information. The communicator may interrogate the target, disclose information designed to elicit reciprocal disclosure, or attempt to relax the target as means for acquiring information (Berger & Kellermann, 1983). In each case, the information seeker influences the type of information solicited by altering his or her own behavior based on available feedback.

Restrictions in communication cues may actually intensify the use of these strategies in CMC. Tidwell and Walther (in press) argued that, since interactive strategies were most amenable to CMC, communicators using email should rely on them to a greater extent than would FtF counterparts. Their results showed (a) a greater proportion of self-disclosures and interrogations in CMC than in FtF first encounters, (b) the correspondence between the frequency of these kinds of remarks and partners' ratings of one another's communication effectiveness was significantly greater in CMC than in FtF, and (c) that the personal questions employed by CMC communicators connoted greater depth than those by FtF counterparts. Furthermore, the use of interrogative tactics in CMC appears to follow a similar pattern to that proposed by theories of relationship development (Pratt et al., 1999). Thus, although FtF partners have numerous visual and verbal cues at their disposal, efficient and effective information acquisition in email must avail itself of the strategies remaining, which communicators apparently do with some alacrity.

Active strategies involve acquiring information from other individuals but without direct interaction with the target. These strategies encompass indirect knowledge acquisition, including the use of third-party information sources. In CMC, active strategies take the form of acquiring information through email exchanges or chats with others familiar with the target. Conceivably, this might include acquiring messages composed by a target passed on by known third-party sources. As Tidwell and Walther (in press) observed, this strategy in its traditional form may be rarer in CMC than FtF environments, based on the findings by Parks and colleagues (Parks & Floyd, 1996; Parks & Roberts, 1998) that the degree of shared social networks among online acquaintances tends to be smaller than among FtF acquaintances.

At the same time, new, noninteractive developments in Internet technologies offer alternative modes of indirect information gathering that defy traditional approaches for all but public figures. Communicators may now use search engines to discover information available on the Internet about others, including locating home pages created by or mentioning the target. This can be likened to conducting a personalized background check. For example, job applicants can go to the home page of prospective employers to glean significant information about an organization and its people. The use of *extractive strategies,* including searches of electronic list postings and Usenet newsgroup messages and archives, draws upon a vast storehouse of written comments generated by targets. These strategies represent a unique manifestation of information seeking unavailable in FtF communication. Moreover, FtF research shows that information seekers prefer observing targets in informal social situations (e.g., Berger & Douglas, 1981). Because these postings reflect statements enacted in social settings—in many cases made without the target suspecting that they would be stored for years and available for public consumption beyond the group for which they were originally intended—they may offer particularly valuable insights to information seekers, especially because the information can be collected covertly, and without the target's knowledge.

Passive strategies involve acquiring information about a target through unobtrusive observation. Although it may be difficult to imagine passive observation in one-to-one email contexts, it may occur in the case of being "carbon copied" on an ongoing stream of messages between other parties. In fact, the decision by interlocutors to enlarge the audience for their exchange by using the "cc" function (often done to place the interaction on a different footing) is an increasingly used feature of CMC that places the newly added recipients in the passive observer role (Bonito, 1998). Messages that are sent as "bcc" (blind carbon copy) or, unbeknownst to the author, are forwarded to others, provide yet additional passive

observational opportunities akin to eavesdropping on a conversation. For example, observers on the sidelines may become privy to the heated interchanges of others who are implicitly trying to enlist support or to create a paper trail.

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. In these environments, passive information seeking may take the form of reading the messages posted to a central location (e.g., a distribution list), reviewing "buddy profiles" commonly available in instant messaging, or "lurking" (logging in, but not participating) in real-time chat spaces, from AOL chat "rooms" to multiuser games and social spaces (see Utz, 2000).

In sum, although one-to-one systems such as email may accentuate communicator reliance on traditional modes of information acquisition—interactive disclosure and interrogation—new developments in communication technology suggest the capacity to shift active and passive information-gathering strategies into new forms, or tactics, that rely on the affordances these technologies provide (see also Burgoon et al., in press). 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 observer rather than participant.

Whereas the above discussion presents these strategies as independent categories, it is more likely that they are interconnected and represent an underlying dimension of directness, with passive strategies representing one pole (indirect) and interactive strategies representing the other (direct). In the following section, we present several factors we believe influence not only strategy selection at the onset of information seeking, but also factors that affect decisions to switch strategies during the process. In doing so, we begin delineating a conceptual framework for extending beyond this typology and incorporating such factors to provide a more complete picture of social information seeking. It should be noted that, in contrast to the single time frame (within-episode) focus of theories like the uncertainty reduction theory, this model is applicable to longitudinal (across-episode) information seeking.

Factors Influencing Strategy Selection

Several classes of factors influence the selection of information-seeking strategies. They include (a) communicator-related, (b) situation/context-related, (c) goal-related, (d) information-related, and (e) technology-related factors. It should be noted, however, that we do not unequivocally assign these factors to an individual approach nor claim any individual factor to be causal in nature. As noted below, one factor may be operational during the initial phases of information seeking, whereas it

may be circumvented by another factor once the process is underway. Likewise, multiple factors may converge and produce an additive influence upon strategy selection at any point in the process.

Communicator-related factors include those factors that are either inherent in the communicator (e.g., personality characteristics, skills, and preferences) or reflect a pattern of information seeking based on his or her background or history. The influence of these factors will be most clearly reflected in a communicator's preference for employing the same initial strategy, a specific sequence of strategies, or a particular technology. For example, communicators who habitually enact a specific strategy because they are skilled in its effective use are likely to pursue that strategy whenever possible. Conversely, if their skill level is low they would usually forego its use, even though it would, perhaps, be the superior choice on all other factors.

Situation/context-related factors reflect the effect of external influences upon information-seeking behavior. This may include mundane factors such as available time to acquire information or even the time of day or physical distance, which may influence target availability, or more complex ones such as the number of sources from which desired information may be accessed. The context in which information seeking is to occur may dictate that a particular strategy is employed, if only initially. For example, research suggests that passive observation, or lurking, is the primary form of information seeking on discussion lists (Nonnecke & Preece, 2000) and online communities (Smith, 1993). This behavior is further encouraged for new members ("newbies"), who are commonly instructed to observe for a period of time before contributing to discussions.

Goal-related factors may influence strategy selection in two ways. Differences in the type of goal (or goals) being pursued may constrain or expand the strategies that may be employed to fulfill them. Some goals require direct contact with a target and, therefore, eliminate alternative approaches. Differences in the duration of the goal(s) will also affect the choice of strategy. Depending on their nature, short-term goals may be more amenable to one approach than another. Similarly, the duration of the goal may dictate a more immediate concern for acquiring desired information, in which case synchronous formats such as instant messaging would be preferred, or allow for a more controlled, protracted approach, which would prompt, to a greater extent, the use of asynchronous formats such as email. Virtual (geographically distributed) teams whose task is short-term, for example, may rely more on active and interactive than passive and extractive strategies to learn about team members.

Information-related factors include characteristics of the desired information that influence how its pursuit occurs. These factors include the quantity of information desired, the qualities associated with it (e.g., its

importance), and whether the information needs are broadly defined, as is the case when exploratory/orienting information is sought or more narrowly defined, as when information is sought to build upon or bolster other already in-hand information.

Technology-related factors are aspects of the information-seeking process directly affected by the use of an information and communication technology. For example, these factors may include the degree to which a technology is "transparent" (Palmer, 1995), an extension of the information seeker and requires minimal effort to use. A particularly relevant influence should be the extent to which a communicator believes a medium is capable of helping him or her acquire the desired information. Such perceptions of "technological efficacy" are likely based on judgments of the efficiency, effectiveness, and ease of use of a technology in comparison to other available communication formats (e.g., phone, FtF). Email is a less attractive alternative to the telephone, for example, if expediency is a primary concern.

The influence of these factors may occur at different intervals in the information-seeking process. Initial appraisals of the factors dictate initial strategy selection, whereas their continued appraisals, along with the degree of success of the strategy itself at acquiring desired information, determine any adjustments required to fulfill goals. When an approach to information seeking fails to achieve its primary goal, communicators will either augment that approach with additional ones or completely abandon the initial approach (or even technology itself) in favor of another, expected to yield the desired results. Therefore, it is fruitful to distinguish *initial factors* as influences that heighten or drive the need for seeking information at the onset from those *emergent factors* (arising during the course of interaction) that may have not been salient initially. Emergent factors evolve from initial efforts and develop as a function of the feedback processes or strategic adjustments made during initial information acquisition efforts.

By combining the information-seeking strategies with these different factors, it is possible to propose a tentative model of social information seeking through CMC and new media (see Figure 1). The model presented in Figure 1 integrates the factors described above and illustrates that the selection of a strategy, or strategies—sequentially or simultaneously, from other alternatives—is influenced by communicator-, situation/context-, goal-, information-, and technology-related factors. These factors independently or collectively influence such decisions. For instance, a communicator's preference to seek information interactively would be altered by the situational/contextual constraint that the information source is unavailable. Alternative strategies would need to be reevaluated under such conditions. The model also incorporates the feedback, experi-

ences, and assessments resulting from the enactment of information seeking as central outcomes, which influence subsequent behavior (e.g., intensify or abandon search); the need for reevaluating the aforementioned factors; and decisions concerning the selected information seeking strategy, including whether to continue utilizing it or select another.

In summary, the conceptual model represents a general perspective from which social information seeking via CMC and new media can be examined. Although no empirical test of the model is offered here, it provides a means for organizing and structuring future studies examining social information seeking by identifying major classes of influences upon the selection of information-seeking strategies and subsequent behavior.

CONSEQUENCES OF SOCIAL INFORMATION SEEKING

Although it is beyond the scope of the present article to delineate in detail numerous consequences of social information seeking, the most obvious ones are those associated with existing social theories of CMC reviewed earlier: impression formation and relationship development. Central to both is the role of social information in producing attributions about targets as well as influencing decisions about pursuing or maintaining relationships. In this section, we offer two promising approaches for examining such associations.

Information Seeking and Participant-Observer Differences

The application of a commonly used paradigm in interpersonal communication may provide insight into the manner in which particular information-seeking strategies, employed through CMC and new media, differentially influence experiences, perceptions, and assessments. Participant-observer differences mirror those between interactive and passive information-seeking strategies. The essence of interactive information seeking is participation in interaction, whereas passive information seeking relies on unobtrusive observations of target communication behavior. These different positions in interaction have important implications for not only how information is acquired but also how it is processed and evaluated (e.g., Burgoon, Buller, & Floyd, 2001) and, in turn, for impression formation and relationship development.

The application of this paradigm to information seeking in CMC and new media can advance our knowledge in at least two theoretically important directions. First, the implications of gathering target information primarily through interaction versus observation for approach-avoid decisions online have not been documented, although passive information seeking online is quite common (Nonnecke & Preece, 2000). It is likely

that communicators begin by gathering information passively, evaluate said information, and begin formulating impressions of others, which serves as the basis for determining whether or not to proceed interactively. Second, by extension, the process of information seeking suggests an ongoing sequence of interconnected behaviors, within which communicators may enact single, multiple, sequential, and/or simultaneous strategies (see Figure 1). A modification of the participant-observer paradigm may offer an opportunity to explore how such differences in information acquisition influence impression and relationship development processes over time. Beyond simple comparisons among the repeated use of the same strategy, studies could incorporate differences in the sequencing of strategies and assess their effectiveness and effects on these processes. Moreover, what factors influence sequencing decisions, movement to and from interaction, and their associated effects await investigation as well. Given the central role ascribed to attributions in the theories reviewed above, the application of this paradigm appears warranted.

Information Seeking and Warrant

Walther and Parks (in press) have suggested a new approach to studying information seeking and giving within the context of relationships that are initiated via CMC. The authors note that in many CMC environments there may be considerable uncertainty about the veracity of others' self-presentations and about the correspondence of such presentations to others' offline identities. When relationships form online, many eventually migrate to FtF meetings, and during this transition partners seek and exchange information about one another. Walther and Parks suggest that, in addition to general uncertainty reduction, or simply getting to know one another, another function of the information is to add "warrant," or connectedness, between who the participants claim to be and who they really are in offline interaction.

The value of different kinds of information for reinforcing the online/offline connection may be variable as far as the information seeker is concerned. For instance, a target's interactive self-disclosure about feelings, attitudes, or experiences, which traditionally are the crux of social penetration processes, may have very limited value as information seekers search for real information because self-disclosures may easily be manipulated or deceptive. Photographs may also be unrealistic. Levine (2000) has documented that some online relational partners—more often males—send photos that are out of date or particularly flattering. Walther and Parks (in press) define the uncertainty reducing value of information in this context "as being derived from the receiver's perception about the extent to which the content of that information is immune to manipulation by the person to whom it refers." Thus, information that appears to

be involuntary (e.g., a home page about a target created by someone other than its subject, such as by one's department's staff) should have more warranting value. So should other information gleaned from or verified through a target's social network, when that is available.

This framework may offer new lines of research on and raise several questions about information seeking, and particularly, on the valuation of information sought and obtained, as virtual relationships move toward physical encounters. For instance, what factors influence the desire for "warranting information" and the manner of information seeking? How might the strategy employed to gather such information affect attributions about and perceptions of the target? When the information acquired decreases, rather than increases, warrant, how are the subsequent appraisals of strategy selection factors and the strategies themselves influenced?

CONCLUSION

The growth of CMC, new media, and the Internet have brought with them new instantiations of traditional approaches to, as well as unique mechanisms for, seeking information about others. The present article suggests that existing theoretical perspectives appear challenged to account for these advances. Consequently, the need for developing models capable of addressing such issues continues to grow. The lack of research comparing the effects and effectiveness of information-seeking strategies and connecting them to broader factors further complicates matters. The conceptual model outlined in the present article offers one approach to addressing these needs.

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