Self-Presentation in Online Personals

The Role of Anticipated Future Interaction, Self-Disclosure, and Perceived Success in Internet Dating

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This study investigates self-disclosure in the novel context of online dating relationships. Using a national random sample of Match.com members ($N = 349$), the authors tested a model of relational goals, self-disclosure, and perceived success in online dating. The authors' findings provide support for social penetration theory and the social information processing and hyperpersonal perspectives as well as highlight the positive effect of anticipated future face-to-face interaction on online self-disclosure. The authors find that perceived online dating success is predicted by four dimensions of self-disclosure (honesty, amount, intent, and valence), although honesty has a negative effect. Furthermore, online dating experience is a strong predictor of perceived success in online dating. Additionally, the authors identify predictors of strategic success versus self-presentation success. This research extends existing theory on computer-mediated communication, self-disclosure, and relational success to the increasingly important arena of mixed-mode relationships, in which participants move from mediated to face-to-face communication.

Keywords: online dating; online personals; Internet relationships; computer-mediated communication; self-presentation; self-disclosure; anticipated future interaction; mixed-mode relationships

Online dating, or communicating with individuals via the Internet or World Wide Web for the purpose of finding romantic and/or sexual partners, constitutes an exciting new realm in which to reexamine traditional interpersonal theories of self-disclosure and relationship formation as well as more recent theories of computer-mediated communication (CMC). The online dating context presents a novel opportunity to study relationships that begin online and then move to offline, face-to-face
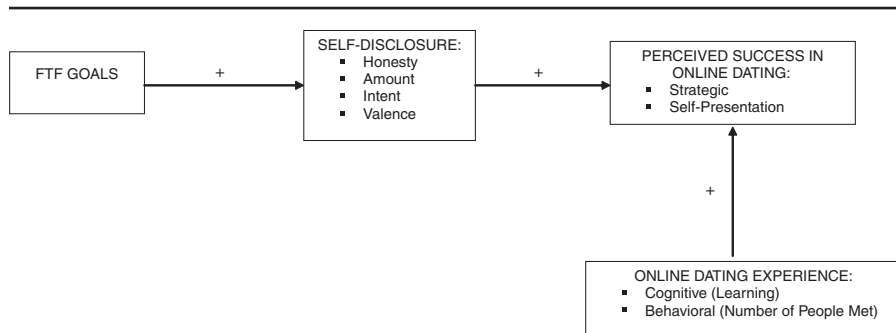
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(hereafter FtF) interactions. These mixed-mode relationships (Walther & Parks, 2002) have become an important site for revisiting well-established theories of relational development, such as social penetration theory (Taylor & Altman, 1987) and uncertainty reduction theory (Berger & Calabrese, 1975), which have largely been tested in FtF contexts. They are also an ideal arena for extending theories of CMC and online relationship development, many of which have been established in purely virtual contexts. This study, which investigates self-disclosure in online dating relationships, is situated at the interstices of interpersonal communication and CMC research.

Once stigmatized as a crutch for those desperate for a date, online dating is rapidly becoming mainstream because of higher levels of Internet penetration and changing demographic trends (Baker, 2002, 2005; St. John, 2002). Cyberromances have become an important area of study for researchers examining relationship formation and CMC (Doring, 2002), and online romantic relationship development has been the focus of a growing body of literature (e.g., Baker, 2002; Bargh, McKenna, & Fitzsimons, 2002; Clark, 1998; Donn & Sherman, 2002; Hardey, 2002; McKenna, Green, & Gleason, 2002; Whitty & Gavin, 2001). Although earlier incarnations of the mediated matchmaking service, such as newspaper personal ads and video dating, have been the subject of previous academic research (e.g., Lynn & Bolig, 1985; Woll & Cozby, 1987), this new iteration of Internet-facilitated matchmaking is unique because of its broader user base and the substantively different capabilities available to users. For example, online dating participants have the opportunity to represent themselves using a wide range of multimedia content, such as text-based descriptions, photographs, and video recordings, and to interact using both asynchronous and real-time communication tools, such as e-mail, instant messaging, and chat rooms.

Using the Internet to meet potential dating partners presents individuals with new challenges in regard to self-presentation and self-disclosure behaviors. Although similar in many respects, these strategies may differ from those employed in traditional FtF initial meetings, which do not typically provide the same opportunities for deliberate self-presentation. Two key features of CMC, reduced communication cues and potentially asynchronous communication (Walther, 1996), enable users to engage in what has been termed "selective self-presentation" (Walther, 1992b; Walther & Burgoon, 1992). First, CMC places greater emphasis on more controllable verbal and linguistic cues in the absence of many nonverbal communication cues, which leads to online self-presentation that is "more selective, malleable, and subject to self-censorship in CMC than it is in FtF interaction" (Walther, 1996, p. 20). Second, the asynchronous nature of CMC gives users more time to consciously construct communicative messages. Thus the mediated nature of online dating gives participants more opportunities to present themselves positively and deliberately.

Past CMC research has examined the role of self-presentation in other online contexts, such as Web pages (Miller, 1995), online support groups (Turner, Grube, & Meyers, 2001), MUDs (Utz, 2000), and MOOs (Roberts & Parks, 1999). Unlike these arenas, in which communication often remains online, the anticipation of a FtF interaction is more salient for online dating participants, who often engage in "modality switching" from online to offline communication as they form relationships with

Figure 1
Model of Perceived Success in Online Dating


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┌──────────────┐        ┌─────────────────────┐        ┌──────────────────────┐
│              │   +    │ SELF-DISCLOSURE:    │   +    │ PERCEIVED SUCCESS IN │
│  FTF GOALS   │───────▶│  ▪ Honesty          │───────▶│ ONLINE DATING:       │
│              │        │  ▪ Amount           │        │  ▪ Strategic         │
│              │        │  ▪ Intent           │        │  ▪ Self-Presentation │
│              │        │  ▪ Valence          │        │                      │
└──────────────┘        └─────────────────────┘        └──────────────────────┘
                                                                   ▲
                                                                   │ +
                                                        ┌──────────────────────────────────┐
                                                        │ ONLINE DATING EXPERIENCE:          │
                                                        │  ▪ Cognitive (Learning)            │
                                                        │  ▪ Behavioral (Number of People Met)│
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Note: FTF = face-to-face.

potential romantic partners (Ramirez & Zhang, in press). The present study is the first to examine self-disclosure strategies among a large random sample of online dating participants. We apply existing CMC and interpersonal communication theory to test a model relating goals, self-disclosure, and perceived success in online dating. Using data from an online survey of a national sample of online dating participants, we address two broad research questions. First, what is the relationship between self-disclosure and goals related to anticipated future (FtF) interaction? Second, what is the relationship between self-disclosure and perceived success in online dating?

Theoretical Framework and Model

Although early research posited mediated communication as inherently less appropriate for socioemotional content than FtF communication (i.e., Culnan & Markus, 1987; Short, Williams, & Christie, 1976), more recent research suggests that CMC can support the development of interpersonal relationships (see Baym, 2002; Walther & Parks, 2002). Additionally, reanalyses of early studies, which found that CMC groups were less socially oriented than FtF groups, determined that this was partly because of the slower rate of exchange among CMC participants (Walther, Anderson, & Park, 1994). This issue has generated various theoretical strands, key among them the social information processing (SIP) and hyperpersonal perspectives. Drawing on these perspectives, we propose a conceptual model relating relational goals, self-disclosure, and perceived relational success (Figure 1).

Relational Goals and Self-Disclosure

Relational goals. Research in other CMC contexts has examined the role of long-term versus short-term goals in online behavior. According to SIP, the motives of communicators direct them to form impressions about others based on the relatively lim-

ited nonverbal and physical cues available via CMC (Walther, 1992a). The theory predicts that in the absence of nonverbal cues, communicators adapt their relational behaviors to the remaining verbal and linguistic cues available in CMC. SIP also focuses on the effects of anticipated future interaction on information-seeking strategies, proposing that these strategies are likely to differ based on the relational goals of CMC users, specifically, whether they intend to have long-term interactions with others with whom they communicate (Utz, 2000; Walther, 1994). Those who anticipate future interaction with their CMC partners have been found to ask more personal questions and self-disclose more than those in offline conditions (Tidwell & Walther, 2002). Similarly, CMC users who anticipate long-term associations or a long-term commitment are expected to engage in more affiliative behaviors and greater self-disclosure than those anticipating short-term interaction, who tend toward a more impersonal, negative orientation. This research suggests that CMC users with long-term goals "have a greater affiliation motive, seek and exchange more personal information, and evaluate each other more positively than those emerging from short-term interactions" (Walther, Slovacek, & Tidwell, 2001, p. 112).

An important characteristic of much of the research on presentation strategies and relationship development among online users is that it is based on data collected from exclusively online CMC groups in which participants meet online and may never encounter each other in a FtF setting, such as MUDs, newsgroups, and virtual communities (Baym, 1998; McLaughlin, Osbourne, & Ellison, 1997; Parks & Floyd, 1996; Utz, 2000). In general, this research does not specifically distinguish between anticipated future interaction online versus in person. We extend theory and findings from this research to the context of online personals, which support a unique form of mixed-mode relationships that begin online and then move offline and in which individuals are more likely to have the explicit goal of meeting FtF to develop romantic relationships.

We believe an important distinction in online-to-offline relationships may be between expected online interaction and expected FtF interaction rather than purely short-term versus long-term interaction. Whitty and Gavin (2001) found that the expectation of eventually meeting FtF was a common theme among those in online relationships, although the actual meeting could sometimes be disappointing. This move from online to offline is not always a goal or even an expectation in online nonromantic relationships but becomes more significant for those seeking traditional romantic relationships. For example, a study of relational development in MOOs found that of the approximately one third of MOO relationships that had resulted in FtF meetings, significantly more of these were romantic than nonromantic relationships (Parks & Roberts, 1998). The expectation of meeting FtF, or anticipated future FtF interaction, is thus likely to be more common among online dating participants and can be expected to influence their self-presentation and self-disclosure strategies.

Self-disclosure. Self-disclosure has been defined as any message about the self that an individual communicates to another (Cozby, 1973; Wheeless, 1978; Wheeless & Grotz, 1976). Self-disclosure is a key component in the development of personal rela-

tionships as it fosters closeness (Derlega, Winstead, Wong, & Greenspan, 1987). It plays a key role in the type of relationships individuals develop; for example, disclosure of highly personal information is an important part of romantic relationships and intimacy (Greene, Derlega, & Mathews, 2006). Self-disclosure has generally been found to have a positive effect on relationship development, although it is acknowledged that partners may cycle back and forth between being open and closed in their disclosures, and too much self-disclosure (especially of negative information) early on in relationships may have a negative effect (Greene et al., 2006).

According to traditional interpersonal theories, such as social penetration theory, self-disclosure is a type of communication through which individuals make themselves known to other people and, when others reciprocate by sharing revealing information, leads to intimacy and relational development (Taylor & Altman, 1987). Incremental exchange theory (Levinger & Snoek, 1972) also posits that self-disclosure progresses in both depth and breadth across time as relationships develop. Furthermore, according to uncertainty reduction theory, individuals will not only seek information to reduce uncertainty but also reciprocate with similar amounts of information and at the same level of intimacy (Berger & Calabrese, 1975), although Joinson (2001) found that the level of intimacy of the information that is revealed by each partner might not be equal. Similarly, individuals tend to respond to self-disclosures from others by revealing aspects of their identity (Derlega et al., 1987).

Research on how self-disclosure functions in CMC settings has been ambiguous. The hyperpersonal perspective suggests that the limited cues in CMC are likely to result in overattribution and exaggerated or idealized perceptions of others and that those who meet and interact via CMC use such limited cues to engage in optimized or selective self-presentation (Walther, 1996). Therefore, self-disclosure online may be less honest because of increased opportunities for self-presentation and identity manipulation (Lea & Spears, 1995; Myers, 1987). Along similar lines, other theorists argue that the anonymity of CMC encourages individuals to experiment with new forms of representation that vastly diverge from their "real life" identities (Stone, 1991, 1996; Turkle, 1995).

Alternately, the anonymity of the Internet may encourage more honest and intimate disclosures akin to the "passing stranger" phenomenon noted by Rubin (1975) in his study of self-disclosure among airline travelers in Boston. This study found that self-disclosures made by out-of-town participants were far more intimate than those of Boston residents as well as lengthier, perhaps because these nonlocal participants were certain they would never interact with the experimenter again and therefore could "unburden [themselves] of private thoughts and feelings with relative impunity" (Rubin, 1975, p. 256). Additionally, barriers to disclosing potentially negative aspects of the self to others are lessened online because users are less likely to face disapproval from those close to them, such as friends or family (Bargh et al., 2002). The anonymity of CMC is also thought to accelerate intimacy as CMC partners engage in more intimate questions and a deeper level of self-disclosure than FtF interactants (Tidwell & Walther, 2002), once again suggesting that online environments enable individuals to be more, rather than less, open and forthcoming about aspects of the self.

Anticipated future interaction may be an important variable for predicting which of these self-disclosure strategies an individual will use at any given time. As Walther (1994) points out, anticipated future interaction plays an important role for CMC groups. Drawing on SIP theory, we expect that individuals with long-term relational goals involving anticipated FtF interaction will engage in a greater degree of self-disclosure with potential dating partners they meet online than those who do not anticipate forming offline relationships. Self-disclosure is a multidimensional construct that varies along dimensions such as honesty, amount, conscious intent, and positive or negative valence (Wheeless, 1978; Wheeless & Grotz, 1976). We thus examine hypotheses about these different dimensions of self-disclosure.

First, we propose that whether individuals plan on meeting others FtF is a critical determinant of the *honesty* of their portrayal of themselves. We hypothesize that individuals who place more importance on long-term relationship goals and meeting their online communication partners FtF will attempt to present a more honest description of themselves in their online profile and interactions with others to avoid censure or wasted FtF meetings. This leads to our first hypothesis:

> *Hypothesis 1:* Those placing greater importance on long-term FtF relationship goals are more honest in their online self-disclosure.

We also predict that long-term goals of establishing FtF relationships will influence the *amount* of self-disclosure online, as individuals with such goals are more motivated to exchange personal information before meeting in an attempt to reduce uncertainty and to filter out others who would be unsuitable for ongoing FtF relationships by encouraging them to reciprocate. In unmediated groups that anticipate future interaction, participants tend to seek more information about each other than those who do not expect to interact again (Walther, 1996). Anticipated future interaction has been found to lead to greater exchange of personal information (Calabrese, 1975; Kellermann & Reynolds, 1990). Also, those who believe they will interact again seek more information to reduce uncertainty and to help them predict whether the outcome of the relationship will be rewarding (Sunnafrank, 1986; Sunnafrank & Ramirez, 2004). Thus we predict that individuals who anticipate future FtF interaction will disclose a greater amount of information to induce potential dating partners to reciprocate and, in turn, reveal more about themselves. The additional information gathered through this strategy allows individuals to better assess whether the relationship is worthy of pursuing offline. On the other hand, those with purely online or short-term relational goals are likely to have fewer criteria on which to assess potential dating partners and thus feel less of a need to invest in others by revealing information about themselves online. Thus we propose the following:

> *Hypothesis 2:* Those placing greater importance on long-term FtF relationship goals engage in a higher amount of online self-disclosure.

Third, we predict that those anticipating future FtF interaction will engage in more consciously deliberate or *intentional* self-disclosure online. Both SIP theory and the hyperpersonal perspective acknowledge that individuals "engage in strategic cognitive deliberation and communicative behavior to compensate for media limitations," (Ramirez, Walther, Burgoon, & Sunnafrank, 2002, p. 215). As with video dating (Woll & Cozby, 1987), Internet personals allow for more deliberate self-presentation because participants have the opportunity to carefully construct and manage the image they communicate to others through profile authoring, photograph selection, and asynchronous interactions. These opportunities for selective self-presentation (Walther, 1996; Walther & Burgoon, 1992) are reminiscent of the offline impression management behaviors described by Goffman (1959). Although self-disclosure in online dating may thus be more reflexive and intentional than self-disclosure in offline relationships overall, it is likely to be relatively greater among those with long-term FtF relationship goals (Woll & Cozby, 1987), who are likely to invest more energy and time into conscious and deliberate self-presentation than those with online, short-term goals. Thus we propose the following:

> *Hypothesis 3:* Those placing greater importance on long-term FtF relationship goals engage in online self-disclosure that is more intentional.

A final aspect of self-disclosure is positive or negative *valence*, which refers to the extent to which the information disclosed about oneself is positive rather than negative (Wheeless, 1978). Previous research has linked positive disclosure with increased relational intimacy and satisfaction (Taylor & Altman, 1987). Furthermore, positive self-attributions have been found to lead to increased self-disclosure among friends but not among strangers, because friends have higher commitment to sustaining the relationship (Derlega et al., 1987). This finding suggests that goals of anticipated future FtF interaction (or greater commitment to sustaining close relationships) should be related to positively valenced self-disclosure. On this basis, we expect that those with stronger goals of establishing FtF relationships will be more motivated to present themselves in a positive light to continue the relationship. Thus we propose the following:

> *Hypothesis 4:* Those placing greater importance on long-term FtF relationship goals engage in online self-disclosure that is more positive.

Self-Disclosure and Perceived Success

Success. Studies of relationship formation have also been concerned with the outcome or success of such relationships, which is usually operationalized as formation of intimate or enduring relationships or as relational satisfaction. Social penetration theory regards disclosure intimacy as one of the key factors contributing to the development of satisfying interpersonal relationships and predicts that self-disclosure leads to relational intimacy and satisfaction (Taylor & Altman, 1987). A large body of

related research suggests a direct relationship between self-disclosure and relational satisfaction, which we regard as a key indicator of relational success. Research has also found that self-disclosure increases relational intimacy through the mediating variable of partner responsiveness (Laurenceau, Feldman Barrett, & Pietromonaco, 1998) because the sharing of personal information triggers an emotional response in the partner, which in turn leads the initial discloser to feel understood and validated (Reis & Patrick, 1996). Many of these studies investigate predictors of satisfaction in FtF relationships, such as marriages (Levinger & Senn, 1967; Markman, 1981; McAdams & Vaillant, 1982). We wish to explore whether this association between self-disclosure and relational success (more broadly defined) extends to the online environment, as well.

We examine the relationship between four dimensions of self-disclosure—honesty, amount, intent, and positive or negative valence (Wheeless, 1978; Wheeless & Grotz, 1976)—and perceived success. Specifically, we expect that greater self-disclosure will lead to greater perceptions of success. Successful online relationships have been defined as those that continue rather than dissolve (Baker, 2002, 2005). However, we assume that success may mean different things for different online dating participants and that definitions of success may be indirectly linked with relational goals. For those with long-term goals, forming intimate, lasting offline relationships may be the key to success. However, those with short-term goals (such as meeting a number of dating partners, gaining dating experience, or making online friends) may not regard relational intimacy or continuity as indicative of success. Additionally, because we are studying individuals who are actively involved in online dating at present, we are interested in their current perceptions of success rather than in defining success in terms of an end state, such as a long-term, intimate relationship (which they may not have reached yet).

We focus on two main dimensions of perceived success: *strategic success* and *self-presentation success*. Strategic success is a construct that takes into account the fact that those involved in online dating may have different relational goals and describes how well they feel they can achieve their goals (regardless of what they are), whether they feel they understand how to be successful, and whether they have developed strategies for online dating. The other dimension is self-presentation success, an affective construct similar to satisfaction that has been used in prior CMC research on self-presentation (Walther et al., 2001). Self-presentation success is similar to impression management (Goffman, 1959) and refers to the degree to which users feel they are able to make a good impression on others and achieve favorable self-presentation through online dating.

We also expect that greater online dating experience will contribute to greater success in online dating. We investigate the effects of two dimensions of experience, behavioral and cognitive, on perceptions of success. Experience has been found to lead to the development of personal relationships online, as the strongest predictors in a study of relational development in online newsgroups were the duration and frequency of participation in a particular newsgroup (Parks & Floyd, 1996). Parks and Floyd (1996) conclude from their findings that relationship formation online is "more

a function of simple experience than it is of demographic or personality factors" (p. 7). Other research has examined the role of experience in terms of the frequency of participation in online support groups, including number of people e-mailed privately and number of people met FtF (Turner et al., 2001). Drawing on this research, we measure behavioral experience in terms of the frequency of participation (number of people met) in online dating. We expect that those who participate more frequently by meeting more people (both through e-mail and FtF) will have more chances to reflect on their positive and negative experiences, modify their behavior, and develop strategies to help them achieve their goals as well as present themselves favorably than those without such experience.

We also propose that experience has a cognitive dimension that influences perceptions of success based on learning ability. That is, individuals who are more reflexive about their online dating experiences and are able to learn from their mistakes will be more successful in online dating. We examine this through a variable assessing the extent to which individuals report that they understand why their online encounters are not successful and the extent to which their online relationships normally continue beyond the first date. We call this variable *learning ability* and predict that those with greater learning ability consider themselves more successful in online dating in terms of both strategic and self-presentation success.

Drawing on these two perceptual dimensions of online dating success, we predict that users who engage in greater self-disclosure (in terms of honesty, amount, intent, and positive valence) as well as who have greater online dating experience (both behavioral and cognitive) will have greater perceived strategic as well as self-presentation success.

Thus we propose the following:

> *Hypothesis 5:* Perceived strategic success in online dating is predicted by self-disclosure in terms of (a) honesty, (b) amount, (c) intent, and (d) positive valence and by experience both (e) behavioral and (f) cognitive.
>
> *Hypothesis 6:* Self-presentation success in online dating is predicted by self-disclosure in terms of (a) honesty, (b) amount, (c) intent, and (d) positive valence and by experience both (e) behavioral and (f) cognitive.

Method

Procedure

An online survey was conducted with a national sample of members of one of the largest commercial online dating services, Match.com. Match.com currently has 12 million active members in more than 240 countries around the world ("Match.com News Center," 2004). The sample was randomly drawn by Match.com, and the sampling frame was provided to the authors, including limited demographic information for all potential respondents. All respondents were first sent an introductory e-mail from Match.com's research department, followed by an invitation from the research-

ers explaining the intent of the survey and pointing them to the survey Web site. As an incentive, all respondents who completed the survey were entered into a raffle to win one of a number of $50 gift certificates to Amazon.com. They were also offered access to the results of the study. Those who did not respond in a week were sent a reminder e-mail. Data collection took place during a 3-week period in November and December 2003.

The Web survey was hosted by Zoomerang.com, which is a survey construction and hosting Web site. This program was used to create and administer an online survey, generate introductory and reminder e-mails, and store the responses in an online password-protected database accessible only to the researchers. The online survey software generated a unique Web address for each invited respondent to ensure that (a) only those sampled were able to complete the survey and (b) each respondent was allowed to complete the survey only once. The data were exported into an Excel file, which eliminated potential data entry error, and then uploaded into SPSS, cleaned, and analyzed.

Sample and Response Rate

All respondents were United States–based current subscribers who were active on the site (i.e., had logged in) within the prior month and who had joined between January 2002 and October 2003 (to capture variation in the amount of time spent on the site). We limited our sample to heterosexuals (i.e., those indicating they were "men seeking women" or "women seeking men").[2] The sample was 56% female, 93% White, and in their 40s on average (though ranging from 18 to older than 60). Sixty-two percent were divorced or separated, and 57% had children. Sixty-seven percent lived in urban areas, and the majority reported incomes between $35,000 and $75,000. Most had been using the Internet for a number of years; 54% had used the Internet for more than six years. These demographic characteristics are in line with the population characteristics of Match.com's subscriber base and representative of our target population.

The total *N* was 349, which was a 14.3% response rate. The response rate was calculated by dividing the total number of completed surveys by the total number in the sampling frame after subtracting the number of invalid e-mails (those that bounced back). E-mail and Web surveys typically have lower response rates than in-person and phone surveys (Watt, 1999) because of the lessened social pressure to respond to an e-mail than to a live person (Dillman, 2000). For this reason, we took a number of measures that have been found to increase response to Web surveys: limiting the survey to 15 minutes, keeping the format simple, offering incentives, providing prenotification and reminder e-mails, emphasizing the academic (rather than commercial) nature of the research, and ensuring confidentiality of responses (Tuten, Urban, & Bosnjak, 2002).

We also conducted a nonresponse bias analysis to identify possible sources of bias among responders versus nonresponders, as recommended when the overall survey response rate is low (Bose, 2001). Because true population values were unknown, we

compared the demographic characteristics of the sample to those for which we had information in the sampling frame (N = 2,500), which was randomly selected from Match.com's subscriber database. We compared our sample to the sampling frame on the characteristics for which response was most likely to vary: gender, age, education, income, and ethnicity. Compared to the sampling frame, our sample was somewhat skewed toward respondents who were female, older, less educated, and White. There was almost no difference in terms of income. These differences may be a factor of both time for and interest in filling out surveys. To test whether these differences resulted in biased responses, we divided each differentiating variable (gender, age, education, and ethnicity) into two groups and conducted a series of t tests to compare means on each of our 11 study variables. Out of 44 total comparisons, only three significant differences were found.[3] We also tested for differences between early and late responders, as later respondents are assumed to be more similar to nonrespondents than to earlier respondents (Bose, 2001). We did this by running t tests comparing means for the earliest and latest third of responders for each of our study variables and found no significant differences on any of our study variables. This analysis suggests that our sample is relatively free of nonresponse bias.[4]

Instrument and Measures

The survey instrument was constructed based on a combination of established scales and original items based on the literature on online self-presentation and relationship formation. Preliminary qualitative research (namely, in-depth phone interviews with online dating participants in urban and rural locations in California) was also conducted and used to inform the survey construction (see Ellison, Heino, & Gibbs, 2006). The survey covered online dating history and goals, online dating experience and attitudes, online self-disclosure (including honesty, amount, intent, and valence), perceived online dating success and intimacy, and demographic questions. The survey was pretested online with members of Match.com (N = 39) to refine question wording and validate the measures. The instrument was modified based on feedback from several experts on survey construction and the pretest results. Summary statistics for each of the variables are reported in Table 1.

Relational goals. A set of items measuring relational goals asked respondents to rate a set of reasons for using online dating sites on a 5-point Likert-type scale ranging from 1 = *not important at all* to 5 = *extremely important*. These items were derived from prior online dating research (Brym & Lenton, 2001) but modified to break down into specifically online and offline (FtF) goals (ranging from short-term or casual to long-term or committed). We used a set of three items measuring the importance of long-term offline goals in this analysis. The items were (a) for long-term dating, (b) to meet one special person with whom to establish a committed relationship, and (c) to find a possible life or marriage partner. These three items proved to be highly reliable (α = .90) and were aggregated into an index called FtF Goals for use in analysis by averaging the scores across the items.

Table 1
Summary Statistics of Research Variables

Variable	n	M	SD	Cronbach's α (Standardized)	No. of Items
Relational goals[a]					
Face-to-face goals	342	4.11	1.03	.90	3
Self-disclosure[b]					
Honesty	343	4.44	.57	.77	6
Amount	338	3.26	.74	.69	5
Conscious intent	346	4.39	.69	.65	2
Positive valence	343	3.53	.79	.62	3
Online dating experience					
Learning[b]	295	2.95	1.04	.66	2
No. of people met[c]	344	2.90	.96	.75	2
Online dating success[b]					
Strategic success	339	3.09	.90	.75	4
Self-presentation success	349	3.89	.82	.69	2
Control variable					
Time spent online dating[d]	348	3.30	1.30		1

a. Scores range from 1 = *not important at all* to 5 = *extremely important*.

b. Scores range from 1 = *strongly disagree* to 5 = *strongly agree*

c. Scores range from 1 = *0* to 6 = *more than 50*

d. Score ranges from 1 = *less than one month* to 6 = *more than two years*

Self-disclosure. Four subscales of the General Disclosiveness Scale (GSD; Wheeless, 1978; Wheeless & Grotz, 1976) were used to measure four dimensions of self-disclosure: honesty, amount, conscious intent, and valence (positive or negative). This scale measures individuals' self-disclosure patterns with others in general rather than asking about self-disclosure to a particular individual or individuals. We used this established measure of tendency to disclose generally rather than a composite score of average disclosure between dyads, which could be misleading because of the great variability in disclosure behavior among online dating participants (e.g., an individual may disclose far more to an established communication partner than to a new acquaintance). It also offers insight into a number of important dimensions of self-disclosure. Items were modified to refer to online interactions. For example, a sample item measuring honesty was "I am always honest in my self-disclosures to those I meet online."[5] Respondents were asked to rate their level of agreement with each statement on a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Negatively worded items were reverse coded.

Factor and reliability analyses were performed on the pretest results, and items with low factor loadings (below .5), significant cross-loading (.4 or greater), or that did not hang together reliably with the rest of the scale were dropped from the survey. Final survey scales were also validated through factor and reliability analysis. Factor analysis performed using Varimax rotation and examining eigenvalues and scree plots (retaining eigenvalues of 1.0 or greater) suggested that the self-disclosure items split

into four factors, as predicted. Exploratory factor analysis was conducted because of the fact that several items were dropped from the original scale because of low reliability in the pretest, the wording of questions was revised for an online setting, and the survey was conducted online. Factor loadings were all greater than .5, and all cross-loadings were less than .4. Through reliability analysis, all four dimensions proved reliable and the items were aggregated into indexes by averaging across the items (honesty, $\alpha = .77$; amount of self-disclosure, $\alpha = .69$; conscious intent, $\alpha = .65$; positive self-disclosure, $\alpha = .62$). The reliabilities for intent and valence were suboptimal, presumably because of the low number of items in these measures.

Online dating experience. Original items were also included measuring respondents' experience with online dating. Online dating experience was broken into two dimensions: behavioral and cognitive. Behavioral experience was measured by two items that asked about the frequency of participation in terms of the number of people respondents had met through online personals by e-mail and FtF. These two items were tested for reliability and aggregated into an index called Number of People Met, averaging across the items ($\alpha = .75$). To measure the cognitive aspect of experience, two original items were included measuring individuals' self-awareness and ability to learn about why their online relationships may not be successful. These items were (a) I am often puzzled by why my relationships with people I meet online are not successful and (b) my online relationships often end after the first date. Respondents were asked to rate their level of agreement with each statement on a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. These items were reverse coded. Reliability analysis indicated that the two items hung together reliably ($\alpha = .66$), and they were combined into a Learning index by averaging across the items.

Perceived success. The final set of items measured perceived online dating success. Perceived success was measured through two dimensions. The first was called self-presentation success and consisted of two items modified from Walther et al. (2001): (a) online personals allow me to present myself in a favorable way and (b) I think I have made a good impression on others through online personals. The second dimension was called strategic success and consisted of four original items: (a) I feel I understand how to be successful in online dating, (b) I feel I am able to achieve my online dating goals, (c) I feel hopeful about meeting someone special through online personals, and (d) I have developed a strategy or strategies for online dating. Respondents were asked to rate their level of agreement with each statement on a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Factor analysis of these six success items using Varimax rotation and examining eigenvalues and scree plots (using eigenvalues of 1.0 or greater) suggested that two factors be retained. Exploratory factor analysis was conducted because of the fact that original items were included for strategic success, wording of the self-presentation success scale was modified for the online dating context, and it was the first time the two subscales had been used in conjunction. Factor loadings were all greater than .6, and all cross-

loadings were less than .35. The factor analysis confirmed these two dimensions, and on the basis of reliability analysis, they were combined into indexes (self-presentation success, α = .69; strategic success, α = .75) that were used in analysis by averaging across the items.

Control variable. The length of time members have spent using online dating sites may also influence their self-disclosure strategies and perceived success. Because of the mixed findings about effects of duration of time spent (Parks & Floyd, 1996), a hypothesis about this was not proposed, but time spent was used as a control variable. Total time spent participating in online dating was measured by an item assessing the total amount of time (in months) respondents had been using online dating sites.

Interitem correlations among each of our major constructs were also examined to check for evidence of multicollinearity. All correlations were less than .5, well below the recommended threshold of .7 (Tabachnik & Fidell, 2001); thus we concluded that the variables were nonredundant. Correlations among all variables are reported in Table 2.

Results

All hypotheses in the model were tested through hierarchical multiple regression analysis performed in two steps. In the first step, total time spent participating in online dating was entered as a control variable. In the second step, the remaining variables were added through forced entry for each dependent variable. Standardized z scores were used for each variable in the regression analysis to ensure that coefficients were comparable.

First, regression models were run to test the effects of goals on self-disclosure strategies (Hypotheses 1 to 4). Hypothesis 1 was confirmed as those placing more importance on FtF relational goals considered themselves more honest in their self-disclosure (β = .17, p < .01). Hypothesis 2 was also confirmed as those for whom FtF goals were more important engaged in higher amounts of self-disclosure (β = .13, p < .05). Hypothesis 3 was confirmed, as well, as those placing more importance on FtF goals also reported more intentional self-disclosure (β = .17, p < .01). Finally, Hypothesis 4 was not confirmed; there was no significant relationship between the importance of FtF goals and the extent of positive self-disclosure. See Table 3 for regression results.

Next, regression models were run to test the effects of self-disclosure strategies on both strategic and self-presentation success (Hypotheses 5 and 6). Although the hypotheses posit a total of 12 bivariate relationships, they were tested as sets of predictors in two multiple regressions. To protect against an inflated alpha level, p < .008 was used to evaluate the significance of the F test for each regression. Regression results are reported in Table 4. The results for strategic success (Hypothesis 5) will be reported first, followed by the results for self-presentation success (Hypothesis 6). For strategic success, Hypothesis 5a was not confirmed, as the relationship between honesty and strategic success was nonsignificant. Hypothesis 5b was confirmed as those

Table 2
Intercorrelations Among Study Variables ($N = 349$)

Variable	1	2	3	4	5	6	7	8	9	10
1. Face-to-face goals										
2. Honesty	.17***									
3. Amount	.14*	.25***								
4. Intent	.17**	.42***	.08							
5. Positive valence	.02	-.02	-.23***	-.00						
6. Learning	-.07	.02	-.01	.07	-.06					
7. No. of people met	.09†	.05	.16**	-.00	-.01	.03				
8. Strategic success	.00	-.01	.15**	.11*	-.07	.47***	.32***			
9. Self-presentation success	-.01	.00	.12*	.20***	.25***	.18**	.19***	.39***		
10. Total time spent	.09	.07	.13*	.02	-.06	-.11†	.32***	.03	.03	

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

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Table 3
Regression Coefficients for Self-Disclosure Strategies

	Honesty		Amount		Intent		Valence	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Total Time Spent	.072	.057	.132*	.122*	.022	.006	−.056	−.059
Face-to-Face Goals		.167**		.129*		.170**		.022
F		5.658**		5.824**		5.049**		.621
df		2, 333		2, 328		2, 335		2, 332
SE		.99		.99		.99		1.00
Adjusted R^2		.03		.03		.02		.00
ΔR^2		.03		.01		.02		.00

Note: Standardized regression coefficients are shown.
*$p < .05$. **$p < .01$. ***$p < .001$.

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Table 4
Regression Coefficients for Strategic and Self-Presentation Success

	Strategic Success		Self-Presentation Success	
	Step 1	Step 2	Step 1	Step 2
Total time spent	.027	–.021	.032	–.035
Honesty		–.093		–.143*
Amount		.118*		.148*
Intent		.125*		.263***
Positive valence		–.014		.320***
Learning		.448***		.183***
No. of people met		.249***		.160**
F		16.091***		10.971***
df		7, 263		7, 267
SE		.83		.86
Adjusted R^2		.28		.20
ΔR^2		.28		.20

Note: Standardized regression coefficients are shown.
*$p < .05$. **$p < .01$. ***$p < .001$.

who were likely to have higher self-disclosure online were also likely to have greater perceived strategic success ($\beta = .12$, $p < .05$). Hypothesis 5c was also confirmed as those with more intentional self-disclosure were also likely to have higher perceived strategic success ($\beta = .13$, $p < .05$). Hypothesis 5d was not confirmed, as positively valenced self-disclosure had no significant effect on strategic success. By far the two strongest predictors of strategic success were the dimensions of cognitive and behavioral experience, confirming Hypothesis 5e and Hypothesis 5f. Those with greater learning ability about online dating were significantly more likely to consider themselves strategically successful ($\beta = .45$, $p < .001$), as were those who had met more people ($\beta = .25$, $p < .001$). The control variable, total time spent participating in online dating, had no effect on perceived overall success. The adjusted R^2 for this model was .28, and the model was significant ($F(7, 263) = 16.091$, $p < .001$).

For self-presentation success, Hypothesis 6a yielded significant findings but in the opposite direction from that predicted. Those who were more honest in their self-disclosures considered themselves less successful in self-presentation ($\beta = –.14$, $p < .05$). Hypothesis 6b was confirmed as those engaging in a higher amount of self-disclosure felt they had more self-presentation success ($\beta = .15$, $p < .05$). Intent and positive valence of self-disclosure proved to be the two strongest predictors of self-presentation success. Hypothesis 6c was confirmed as those with more intentional self-disclosure considered themselves more successful in self-presentation ($\beta = .26$, $p < .001$). Hypothesis 6d was strongly confirmed, as well; those with more positive self-disclosure felt they had greater self-presentation success ($\beta = .32$, $p < .001$). Experience was also a strong predictor, confirming Hypothesis 6e and Hypothesis 6f. Those with greater learning ability ($\beta = .18$, $p < .001$) and number of people met ($\beta = .16$, $p < .01$) in online dating were more likely to have greater self-presentation suc-

cess. Total time spent participating in online dating (the control) had no effect. The adjusted R^2 for this model was .20, and the model was significant ($F(7, 267) = 10.971$, $p < .001$).

Discussion

These findings provide support for both the hyperpersonal perspective and SIP theory and extend them to mixed-mode relationships. First, we find that individuals with long-term goals of establishing FtF relationships engage in higher levels of self-disclosure in that they are more honest, disclose more personal information, and make more conscious and intentional disclosures to others online. Their disclosures are not necessarily more positive than disclosures of those placing less importance on FtF goals, however. This unexpected finding may be explained by the fact that they are trying to present themselves in a realistic manner (i.e., one that includes negative as well as positive attributes) because they know such attributes will eventually be revealed in time if they develop ongoing FtF relationships. These findings provide support for the importance of anticipated future (FtF) interaction as outlined by SIP theory (Walther, 1994) and indicate its role in prompting increased, more honest, and more intentional (though not more positive) self-disclosure in the context of online dating. They also provide evidence that online self-disclosure (which has often been compared with self-disclosure in FtF relationships, c.f. Bargh et al., 2002; Tidwell & Walther, 2002) differs among users of CMC depending on their relational goals.

Perhaps our most surprising finding is the negative effect of honesty on success (particularly in self-presentation). Whereas greater amounts of self-disclosure as well as more intentional and positive self-disclosure lead to greater success for one or both of the dimensions, greater honesty appears to have a detrimental effect. Although the negative effect of honesty on strategic success is nonsignificant, its negative effect on self-presentation success is significant. One explanation is that those who are less honest may feel they have made a more favorable impression on others through online dating because they are probably not revealing flaws or negative characteristics that could turn off potential dating partners and may be outright lying about characteristics such as age, weight and physical appearance, or income. This explanation fits with the view of the Internet as a medium for identity manipulation (e.g., Myers, 1987) or at least selective self-presentation (Walther, 1996). It is also supported by social penetration theory, which suggests that individuals often withhold negative information early on in relationship development (Greene et al., in press).

This explanation is further supported by our descriptive survey findings. A very high percentage (94%) of our respondents strongly disagreed that they had intentionally misrepresented themselves in their profile or online communication, and 87% strongly disagreed that misrepresenting certain things in one's profile or online communication was acceptable. However, although unlikely to admit they themselves had lied, a high proportion of respondents did feel that certain characteristics were frequently misrepresented online by others. The most common were physical appear-

ance (86%), relationship goals (49%), age (46%), income (45%), and marital status (40%). More in-depth exploration of this issue through our qualitative analysis revealed that misrepresentation was not always intentional and occurred in three ways: through representation of an inaccurate self-concept, fudging demographic information such as age to avoid being "filtered out" in searches, and portrayal of an idealized or potential future version of the self (Ellison et al., 2006). Despite claims of honesty, these findings speak to the pressures to present an idealized online persona, which may not be a completely honest representation of one's "true self" (McKenna et al., 2002).

Further interesting findings emerge when comparing predictors of self-presentation versus strategic success. The most important predictors of strategic success are related to experience, both cognitive and behavioral. The importance of cognitive experience makes sense as it relates to individuals' ability to learn from their mistakes in online dating. That is, individuals who are less likely to report being puzzled by their lack of online dating success and less likely to have relationships frequently end after the first date (either because they are better at identifying successful matches or because they learn from mistakes and adapt their relational strategies) are more likely to feel confident about achieving their online dating goals. Similarly, those who have met more people through online personals (both by e-mail and FtF) are also likely to have more chances to reflect and learn from these experiences to better achieve their strategic goals. In addition to experience, two aspects of self-disclosure contribute to strategic success: amount and intent. That is, those who disclose more about themselves and engage in more intentional self-disclosure are more likely to have strategic success. These findings imply that those who disclose more about themselves, and with more conscious intent, may benefit in two ways: First, they offer others more information about themselves, which may enable "deal breakers" to surface before the first FtF meeting, and second, they are likely to receive more information about potential dating partners because of the reciprocity norm surrounding self-disclosure and thus make better decisions about them.

For self-presentation success, on the other hand, the strongest predictors are intentional and positive self-disclosure, two variables that are closely related to impression management (Goffman, 1959). It makes sense that individuals who are more concerned with presenting themselves favorably and making a good impression on others through online dating would engage in more positive self-disclosure and be less inclined to reveal negative aspects of themselves as well as be less honest and control their self-disclosure more in an attempt to carefully craft online personae that are attractive, desirable, and perhaps idealized. These pressures are likely to be particularly important in early stages of relationship formation.

The importance of amount of self-disclosure for both types of success provides support for social penetration theory (Taylor & Altman, 1987), which links increased self-disclosure to relational intimacy and satisfaction, and extends this theory to the online dating context. Furthermore, the importance of positive and intentional self-disclosure as well as the negative effect of honesty for self-presentation success can be explained by the hyperpersonal perspective, which suggests that CMC users use the

reduced cues and asynchronous nature of CMC to their advantage by engaging in more deliberate, controlled, and perhaps idealized self-presentation (Walther, 1996). Our findings are also supported by research on earlier alternative dating methods, such as personal advertisements in newspapers and magazines (Lynn & Bolig, 1985; Lynn & Shurgot, 1984), in which those who presented themselves with a nonnegative evaluative self-description received more responses than those who did not provide such descriptions (Lynn & Shurgot, 1984). Our results extend these findings to online dating and show that more positive and intentional self-presentation in online dating leads to greater perceptions of self-presentation success (though not necessarily to relational intimacy).

Although we find that increased self-disclosure leads to greater perceived relational success in online dating overall, our findings also reveal important distinctions between different dimensions of self-disclosure and suggest a more accurate way to conceive of relational goals in online environments. In addition to highlighting the different facets of self-disclosure and their relationship to online dating success, this study also contributes to literature on relational success by identifying multiple dimensions of success. Although success has traditionally been defined as reaching a certain level of intimacy, that notion is more complicated in the online environment, where romantic encounters are characterized by initial relationship formation rather than intimate or committed relationships. Second, in online dating, we have found that people often have multiple diverse relational goals ranging from casual dating to finding a life or marital partner, so the construct of strategic success allows for the idea of success amid varying relationship goals. Finally, we have also expanded the notion of success by including self-presentation success because that is an intentional and important aspect of building relationships through online dating.

Our results also highlight the importance of experience, including a learning dimension that has not been previously identified. The importance of meeting a number of different people is underscored, as well as the ability to learn from these experiences, in predicting both strategic and self-presentation success. This suggests that success in online dating may be partially a "numbers game," as voiced by many of our interview participants (Heino, Ellison, & Gibbs, 2005), but that it requires a cognitive ability to reflect and learn from one's encounters, as well. Future research should further validate and test these variables, especially the learning variable. This variable has very strong effects, particularly on strategic success, but our interpretation of these results could be strengthened through more precise measurement.

Finally, it is worth mentioning that the total amount of time spent participating in online dating sites had no significant relationship to either type of relational success. This is interesting as it suggests that although other types of experience are required for success, this experience is not necessarily gained over time. This is consistent with findings that time spent participating in newsgroups in general did not influence relational development, although time participating in a particular newsgroup did (Parks & Floyd, 1996). An implication is that new but active users can consider themselves just as successful as veterans of online dating. Moreover, a greater amount of time spent on online dating may conversely be indicative of a lack of success as the fact that

the individual is still participating in online personals sites implies he or she has not yet found a suitable partner with whom to establish a relationship.

Our study has several limitations. First, our survey response rate was rather low but still on par with other online surveys (Tuten et al., 2002). Second, our sample is limited to United States–based heterosexual users and as such does not generalize to the entire online dating population. Third, it is important to stress that we measure perceived rather than actual success in this study. Because of the fact that our sample came from a population of those actively using the online dating site, we were unable to measure actual success rates. We can assume that many, though not all, had not met their goals at the time of their involvement, given their continued activity on the site. Longitudinal studies of those who have successfully formed offline relationships based on interaction in this context would allow for correlation of actual success with perceived success and would thus be a useful future extension of this research. Additionally, the current study uses entirely self-reported data from participants. Because of the need to preserve their anonymity, we were unable to compare participants' actual characteristics with their reported characteristics, which would give us a richer understanding of how self-disclosure and self-presentation strategies function in this context. Finally, two of the self-disclosure measures (intent and valence) suffered from suboptimal reliabilities presumably because of the low number of items in these measures. Future research should address these issues and additional factors contributing to the formation of successful relationships through online dating, such as the transition from online to FtF relationships and the role of "chemistry."

This study has examined online dating as a new window through which to view interpersonal theories of self-disclosure and relational success. In addition, it extends CMC theory on online relationships to mixed-mode relationships, which differ in significant ways from other (exclusively online) CMC contexts. The study of online dating behavior not only has the potential to help us understand how CMC and the Internet can facilitate relationship development but can also provide new insights into existing interpersonal communication theories focusing on FtF relationship formation, self-presentation, and self-disclosure. The tools and technologies of online matchmaking will continue to develop as users and online dating organizations explore the potential of mobile and location-aware technologies, computerized assessment, and video and audio communication tools. In conjunction with these changes, communication researchers will encounter new research sites, challenges, and questions as they seek to understand how self-representation and self-disclosure function online.

Notes

2. There is precedent for this in previous studies (Fiore & Donath, 2005; Whitty, 2003), which initially included individuals of any sexual orientation but ended up omitting homosexuals from the final sample because of inadequate numbers. Furthermore, there is reason to suppose that same-sex versus opposite-sex dating behavior may differ in certain significant ways, such that including a same-sex dating population would make our sample less generalizable. For example, a review of research on traditional romantic relationships finds that "one characteristic that continues to distinguish gay male couples from both heterosexual married couples and lesbian couples is their higher rates and acceptance of nonmonogamy" (Christopher & Sprecher, 2000, p. 1008). We surmised that such differences may influence participants' goals in online dating, such that there would be systematic differences in goals of gay versus straight users, which could confound the results.

3. Female respondents met significantly more potential dating partners by e-mail and face-to-face than did males, older respondents (40 and older) spent more time using online dating sites than younger ones (younger than 40), and less educated respondents (with less than a bachelor's degree) reported more intentional self-disclosure than those with a bachelor's degree or higher.

4. Our findings should thus be interpreted with the caveat that our survey respondents (on key isolated variables) are somewhat more experienced and have somewhat more intentional self-disclosure than the overall population to which we are generalizing. We do not feel this poses a major limitation to the representativeness of our sample, however, because early and late responders (perhaps a better proxy for respondents and nonrespondents) did not differ significantly.

5. Final items for each dimension were as follows (items marked *R* were reverse coded):

Honesty

1. I am always honest in my self-disclosures to those I meet online.
2. My statements about my feelings, emotions, and experiences to those I meet online are always accurate self-perceptions.
3. The things I reveal about myself to those I meet online are always accurate reflections of who I really am.
4. I am not always honest in my self-disclosures with those I meet online (R).
5. I always feel completely sincere when I reveal my own feelings and experiences to those I meet online.
6. I do not always feel completely sincere when I reveal my own feelings, emotions, behaviors, or experiences to those I meet online (R).

Amount

1. I often discuss my feelings about myself with those I meet online.
2. My statements of my feelings are usually brief with those I meet online (R).
3. I usually communicate about myself for fairly long periods at a time with those I meet online.
4. I do not often communicate about myself with those I meet online (R).
5. I don't express my personal beliefs and opinions to those I meet online very often (R).

Positive valence

1. I often disclose negative things about myself to those I meet online (R).
2. I usually disclose only positive things about myself with those I meet online.
3. On the whole, my disclosures about myself to those I meet online are more positive than negative.

Intent

1. When I express my personal feelings with those I meet online, I am always aware of what I am doing and saying.
2. When I reveal my feelings about myself to those I meet online, I consciously intend to do so.

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