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Full Research Report

JSPR

Journal of Social and Personal Relationships
2025, Vol. 42(11) 3272–3294

DOI: 10.1177/02654075251367137
journals.sagepub.com/home/spr
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Not such fast friends? The effect of intimate conversation on social connection in text-based getting acquainted interactions

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Abstract

People can foster social connection in new relationships through intimate conversation comprised of reciprocal self-disclosure and responsiveness, but the limited affordances of text-based communication may hinder this process. The present study examined the effectiveness of intimate conversation in promoting social connection during texting and in-person interactions. Two hundred and eighty-six unacquainted dyads (N = 572) were randomly assigned to have an intimate or small talk conversation that occurred face-to-face or via text messaging on a smartphone. Afterward, participants reported how socially connected they felt to their conversational partner, including their self-disclosure, perceived partner responsiveness, and interpersonal closeness. Participants reported greater social connection after intimate (vs. small talk) and face-to-face (vs. texting) conversations, but the effect of intimate conversation did not differ across the two mediums. Exploratory mediation analyses revealed a serial indirect effect of conversation medium on social connection, such that texting (vs. face-to-face) interactions led to lower self-disclosure, which was then associated with lower perceived responsiveness and closeness. These findings suggest people can connect over texting through intimate conversation, but they may be less likely to self-disclose over texting than in face-to-face interactions, which can have downstream consequences for interpersonal closeness.

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Keywords
Social connection, intimacy, self-disclosure, texting, face-to-face interaction, computer-mediated communication

Text-based communication through texting (Duggan, 2013) and app-based messaging (Hall, 2023) is a common mobile phone activity that allows users to initiate and maintain new social relationships. People can exchange phone numbers with a coworker or romantic interest they just met, opening the door to a line of communication that can sidestep or support face-to-face (FtF) interaction. Social media sites and dating apps present additional channels to meet new social partners online and become acquainted through messaging before meeting FtF (Rosenfeld et al., 2019). Thus, it is important to understand how people can build new social relationships over text-based messaging.

One way that people can foster new social relationships is through intimate conversation, characterized by reciprocal self-disclosure and responsiveness (Reis & Shaver, 1988). Previous research has shown that people meeting for the first time feel interpersonally closer to one another after conversations comprised of intimate and personal topics than they do after small talk (e.g., Aron et al., 1997). However, because text-based communication lacks audio and visual affordances, the ability for people to express their interest, emotion, and understanding through nonverbal cues is limited (Maisel et al., 2008). As a result, people may find it more difficult to engage in intimate conversation over text because they are less willing or able to share personal information and have fewer opportunities to be responsive. The present research aimed to examine the effectiveness of intimate conversation in promoting social connection during text-based and FtF interactions.

The interpersonal process of intimacy

Extensive theory and research have demonstrated that intimacy is an interpersonal process that begins when one person discloses information that reveals their personal feelings, values, and beliefs, which then provides an opportunity for one's partner to respond in a way that conveys validation, understanding, and care (Reis & Shaver, 1988). Over time, people feel more socially connected with their partner when they can self-disclose (Collins & Miller, 1994; Greene et al., 2006; Morton, 1978) and when they perceive their partner as being responsive to their disclosure (Laurenceau et al., 1998; Shelton et al., 2010; Welker et al., 2014). The intimacy process continues as both partners disclose and respond to one another reciprocally, resulting in greater social connection over time (Reis & Shaver, 1988).

As an empirical test of this process, Aron et al. (1997) developed the Fast Friends Paradigm, a conversation task comprised of 36 topics that encourage people to disclose personally revealing information and to engage in intimacy-associated behaviors (e.g., discussing their shared relationship). Dyads who interact via the Fast Friends Paradigm report feeling more socially connected than dyads who engage in small talk, including when they are unacquainted (e.g., Aron et al., 1997; Sprecher, 2021a). However, despite the overwhelming evidence demonstrating this intimacy process in FtF interactions, less is known about how this process unfolds over text.

Comparing FtF and text-based communication

The widespread adoption of various forms of text-based communication (referred to simply as "texting" from here on) has led researchers to examine how people communicate through text, and if there are differences in social connection from FtF interactions. On one hand, texting has the advantage of allowing people to keep in touch from any location, communicate quietly, share media, and respond at a pace that fits one's circumstances. On the other hand, texting lacks audio and visual affordances that enable people to communicate important nonverbal information, such as tone of voice, facial expressions, gestures, and touch (Burgoon et al., 2002; Ramirez & Burgoon, 2004). Nonverbal cues are important in social interactions because they can help indicate that a person is paying attention (e.g., nodding; Maisel et al., 2008) and that they feel interpersonally close to their partner (e.g., eye contact; Argyle & Dean, 1965). This lack of nonverbal information can hinder the ability to detect emotional cues over text, as people are less accurate when judging their partner's emotions (Kato & Akahori, 2005), and they tend to underestimate how well they can convey their own emotions (Kruger et al., 2005). Further, the asynchrony of texting can make it difficult to achieve immediate responses and fluent turn-taking, two factors associated with greater intimacy (Burgoon & Le Poire, 1999).

Despite these differences, researchers have argued that the anonymity and asynchrony of texting may instead encourage *greater* social connection because it enables people to present their ideal (vs. actual) self (Bargh et al., 2002; McKenna et al., 2002) and to engage in selective self-presentation (Walther, 1992, 1996). Further, people may adapt to communicating over text by reallocating cognitive resources to processing verbal information that would otherwise be used for nonverbal information (Walther, 1996) and by expressing themselves nonverbally in other ways. People may use *emoticons* when texting to establish the emotional tone of their message, such as by using ':)' for a smiley face to indicate that a sarcastic comment is a joke (Kaye et al., 2016). The emergence of *emojis* has further supplemented the way many emotions are expressed, with over 150 facial expressions represented by Unicode characters (e.g., ☺ https://unicode.org/emoji/charts/full-emoji-list.html) along with hand gestures, hearts, and other symbols that can be used to communicate nonverbal information. Indeed, emoji use has been shown to reduce ambiguity in one's intentions (Groggel, 2023), and the reciprocal use of emojis during positive disclosures can lead to higher perceived responsiveness (Coyle & Carmichael, 2019).

Given this competing evidence, it is important to compare how people experience social connection after interacting over these mediums. Recent findings suggest that people report lower well-being after computer-mediated interactions compared to FtF (Kroencke et al., 2023), and that when having an intimate conversation, texting is the least conducive type of computer-mediated communication for affiliative outcomes (i.e., compared to voice-based, video-based, and virtual-reality; Agnew et al., 2022). An early meta-analysis of 11 correlational and experimental studies found no difference in self-disclosure between computer-mediated and FtF communication ($d = -.07$, $p = .72$; Kim & Dindia, 2011), but the findings across studies were heterogeneous, suggesting that there were potential moderating variables (e.g., type of computer-mediated communication) that may have been masking effects. A larger and more recent meta-analysis of 25 studies found that FtF communication resulted in

greater self-disclosure than computer-mediated communication (r = .211, 95% CI [.129, .293]), especially text-based (r = .219, 95% CI [.130, .296]; Ruppel et al., 2017),[1] but this effect was no longer significant when examining only experimental studies (r = .037, 95% CI [–.108, .180]). Indeed, experimental studies comparing text-based and FtF communication in unacquainted dyads have revealed inconsistent findings, with some finding better social connection outcomes for text-based communication (Bruss & Hill, 2010; Joiner, 2001; Schouten et al., 2009) and others finding better outcomes for FtF (Green, 2006; Mallen et al., 2003; Okdie et al., 2011; Shaw, 2004; Sprecher, 2014, 2021b; Sprecher & Hampton, 2017).

One possible explanation for these inconsistent findings is the handling of *time* in these studies. According to Social Information Processing Theory (Walther, 1992, 1996, 2011), text-based interactions need more time to reach the same level information sharing as FtF interactions, as texting the same string of words on a smartphone can take up to three times as long as speaking (Ruan et al., 2018). However, experimental studies allowing unacquainted dyads more time to communicate in text-based interactions have also revealed inconsistent findings. When participants interacting via instant messaging had 20%–67% more time than FtF participants, they still reported lower liking, closeness, and perceived responsiveness (Sprecher, 2014, 2021b; Sprecher & Hampton, 2017). When dyads interacting via instant messaging had twice as much time as FtF dyads, they were observed making fewer disclosures but self-reported just as much self-disclosure depth in one study (Green, 2006), whereas in another study, they self-reported more disclosures (Schouten et al., 2009). Finally, when instant-messaging interactions were four times as long, they had a larger proportion of self-disclosures than FtF interactions, but participants interacting FtF expressed more peripheral and intermediate self-disclosures overall (Tidwell & Walther, 2006). Although more time may allow texting conversations to "catch up" to FtF ones, we can presume that texting conversations should be less close *when they are given the same amount of time*. And according to the Interpersonal Process Model of Intimacy (Reis & Shaver, 1988), this could be explained by individuals having fewer opportunities to self-disclose, and in turn, to perceive their partner as responsive.

The present research

Although previous research has compared social connection outcomes between FtF and text-based interactions, these studies have not examined the extent to which intimate conversation can promote social connection over texting, and if it is less effective than when interacting FtF. According to the Interpersonal Process Model of Intimacy, text-based interactions should be less conducive to social connection if they thwart the extent to which one discloses personal information, and in turn, how much they perceive their partner as responsive to their disclosures. Thus, the present research aimed to compare the effectiveness of intimate conversation in promoting social connection in texting and FtF interactions.

The present study uses a 2 × 2 between-groups factorial design with unacquainted dyads randomly assigned to have an intimate or small talk conversation that occurred FtF or over texting. In line with previous research, we hypothesized that participants would report greater social connection after intimate (vs. small talk; H1) conversations and after FtF (vs. texting; H2) conversations. Because texting interactions lack the audio and visual

affordances through which intimacy can occur, we hypothesized a statistical interaction between conversation topics and medium, such that the effect of intimate (vs. small talk) conversation on social connection would be stronger for FtF (vs. texting) interactions (H3). In other words, we predicted that intimate conversation would be *less* effective at promoting social connection over texting. Finally, based on the Interpersonal Process Model of Intimacy, we conducted exploratory (i.e., not preregistered) mediation analyses to examine if social connection differences between mediums could be explained by a serial indirect effect through self-disclosure and perceived responsiveness. The study was approved by the Institutional Review Board (IRB) before data collection. Hypotheses, exclusion criteria, and analyses were preregistered prior to data analysis (https://osf.io/3cf6v).[2]

Method

Participants

We collected data from 612 undergraduate students (306 dyads) in the northeastern United States who were compensated with course credit. The sample size was confined to collection in a single semester. Students were eligible to participate if they were 18 years or older and owned a smartphone (for familiarity with the medium). To ensure the dyads were unacquainted, participants rated how familiar they were with the other participant after seeing them in the waiting room but before the conversation task. Following our preregistered exclusion criteria, 40 participants (20 dyads) were excluded from analyses because they were acquainted before participation, resulting in a final sample of 572 participants (286 dyads). The age of participants ranged from 18 to 60 years (M = 18.76; SD = 2.13; 25 missing responses). The majority of participants were White (69.41%), followed by Asian (17.83%), Black or African American (6.12%), Hispanic or Latinx (4.37%), Native American (0.52%), then Pacific Islander (0.35%), and 1.22% were of another racial/ethnic background (1 missing response). Most of the sample identified as women (68.36%), 31.29% as men, and 0.35% as non-binary. The final sample had slightly more same-gender dyads (55.24%) than mixed-gender dyads. Sensitivity power analyses indicate that with an $\alpha = .05$, the final condition sample sizes had 90% power to detect an effect of $d = 0.27$ for the main effects of conversation topic and medium, and $\eta_p^2 = 0.02$ for the conversation topic × medium interaction (G*Power; Faul et al., 2007).[3]

Procedure

Two participants signed up for a single session using the department's participant pool management software. Upon arriving at their scheduled session, participants were instructed to sit in a waiting room before the study began.[4] Once both participants arrived, they were quickly greeted together by the researcher and brought to separate cubicles where they provided consent and indicated how well they knew the other participant.

Using a 2 × 2 between-groups factorial design, dyads were randomly assigned to have an intimate or small talk conversation occurring FtF or via texting. Conditions were determined in advance of participants' arrival using a random number generator that

resulted in uneven group sizes. FtF participants were brought to another room where they conversed from opposite sides of a small table. Texting participants remained in their cubicles and were each provided an iPhone by the researcher. They conversed using the *iMessage* app and were not given any special instructions for how to communicate, thereby allowing them to use emoticons and emojis[5] and to react to each other's messages, such as by *liking*, *loving,* or *emphasizing* the other person's message.

For the conversation prompts, participants were provided either the 36 intimate (i.e., Fast Friends Paradigm) or small talk topics developed by Aron et al. (1997). The conversation topics were divided into three sets (12 topics each), and the intimate topics increased in their promotion of self-disclosure with each set so that dyads discussed the more intimate topics regardless of their conversation pace.

Dyads in each condition conversed for 36 minutes (12 minutes for each set). Although some researchers have recommended that people conversing over text should be given a longer time to reach the same amount of verbal and nonverbal information sharing as those conversing FtF (e.g., Walther, 2011), we opted to keep the length of conversation consistent across mediums. Doing so allows us to rule out time as a confounding variable and to ensure that any differences between mediums are due to the differences in their affordances, including their ability to promote verbal and nonverbal information at a different pace. We believe that this is important for our research question, which is to compare how effective intimate conversation is for promoting social connection across mediums through the sharing of personal information. Still, we continue to examine the role of equal time in our design when evaluating our findings in the Discussion section.

Finally, after the conversation, participants completed measures of social connection in their respective cubicles.

Social connection measures

Social connection was operationalized as participants' self-reported self-disclosure, perceived partner responsiveness, interpersonal closeness, enjoyment, and desire to affiliate after the interaction.[6] Descriptive statistics, scale reliability, and bivariate correlations are summarized in Table 1. Descriptive statistics and sample size by condition are summarized in Table 2. Items for each measure were averaged, and higher scores indicate a higher endorsement of that construct.

Table 1. Descriptive statistics and bivariate correlations.

		M	*SD*	α	*ICC*	1	2	3	4
1	Self-Disclosure	5.51	1.91	.88	.34				
2	Responsiveness	3.90	0.85	.86	.28	.50			
3	Closeness	2.88	1.02	.85	.29	.49	.51		
4	Enjoyment	5.43	1.25	.95	.29	.45	.58	.51	
5	Desire to Affiliate	4.35	1.41	.96	.23	.37	.48	.57	.61

Note. All bivariate correlations are significant at $p < .001$.

Table 2. Means, standard deviations, and sample sizes by condition.

	Overall		Face-to-Face			Texting		
	Intimate	Small Talk	Overall	Intimate	Small talk	Overall	Intimate	Small talk
Variable	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Self-Disclosure	6.17 (1.82)	4.73 (1.71)	5.96 (1.84)	6.81 (1.58)	5.04 (1.65)	4.95 (1.85)	5.43 (1.80)	4.28 (1.71)
Responsiveness	4.02 (0.81)	3.76 (0.87)	4.02 (0.80)	4.16 (0.79)	3.86 (0.79)	3.76 (0.88)	3.87 (0.80)	3.61 (0.95)
Closeness	3.08 (1.05)	2.64 (0.94)	3.01 (1.03)	3.25 (1.08)	2.74 (0.91)	2.72 (0.99)	2.89 (0.98)	2.48 (0.96)
Enjoyment	5.54 (1.21)	5.30 (1.28)	5.55 (1.23)	5.68 (1.20)	5.41 (1.26)	5.27 (1.26)	5.38 (1.21)	5.12 (1.31)
Desire to affiliate	4.43 (1.42)	4.27 (1.38)	4.48 (1.44)	4.62 (1.43)	4.32 (1.44)	4.20 (1.34)	4.21 (1.38)	4.19 (1.29)
N (*Dyads*)	312 (156)	260 (130)	320 (160)	166 (83)	154 (77)	252 (126)	146 (73)	106 (53)

Self-disclosure. Participants reported their self-disclosure depth using a 9-point scale (1 = *Not at all*, 9 = *Extremely*) to respond to the following items: To what extent did you "disclose information about your innermost self," "disclose personally important experiences and events," "openly express your feelings," and "openly express your values and beliefs" (adapted from Kashdan & Wenzel, 2005).

Perceived responsiveness. Participants reported their perceived responsiveness using a 5-point scale (1 = *Very little*, 5 = *A great deal*) to indicate how much they felt "understood," "validated," and "cared for" by their conversation partner (Welker et al., 2014).

Interpersonal closeness. Participants reported their interpersonal closeness using the Inclusion of Other in the Self scale (IOS; Aron et al., 1992) and Subjective Closeness Index (SCI; Berscheid et al., 1989). For the IOS, participants responded to the question, "How close do you feel to your conversation partner right now?" on a pictorial 7-point scale (1 = *Not close at all*, 7 = *Extremely close*), whereby each scale point is represented by two increasingly overlapping circles labeled "Self" and "Partner." For the SCI, participants used a 7-point scale (1 = *Not close at all*, 7 = *Extremely close*) to answer the following questions about their conversation partner: "Relative to *all* your other relationships [both romantic and platonic], how would you characterize your relationship with this person?" and "Relative to what you know about *other people's* close relationships, how would you characterize your relationship with this person?". Consistent with prior work (Aron et al., 1997), the three items were averaged to create a composite of interpersonal closeness.

Enjoyment. Participants reported their enjoyment using a 7-point scale (1 = *Not at all*, 7 = *A great deal*) to indicate how much they "enjoy [ed] the interaction," "enjoy [ed] their role in the interaction," were "satisfied" with the interaction, and thought the interaction was "fun" (adapted from Sprecher, 2014).

Desire to affiliate. Finally, participants reported their desire to affiliate using a 7-point scale (1 = *Not at all*, 7 = *Very much*) to indicate how much they would like to "talk to," "spend time with," "hang out with," and "make plans with" their conversation partner in the future (adapted from Park & Maner, 2009).

Results

Analytic strategy

Data were cleaned in IBM SPSS Statistics and analyzed in R (R Core Team, 2020). We first computed intraclass correlations (Table 1) to estimate the proportions of between- and within-dyad variability for each outcome variable. Results revealed that the within-dyad variance ranged from 66% to 77%, suggesting that the data were interdependent within dyads. To account for this, we used the *lmer* function (lme4 package; Bates et al., 2015) to fit linear mixed-effects models with random intercepts to assess between-person outcomes (Level 1) nested within dyads (Level 2; Kashy & Snyder, 1995; Kenny et al., 2020).

Because previous research has revealed differences in self-disclosure (Dindia & Allen, 1992) and perceived responsiveness (Reis et al., 2011) between same-sex and mixed-sex targets, we conducted preliminary analyses to test for differences in our social connection variables between same-gender and mixed-gender dyads.[7] Indeed, same-gender (vs. mixed-gender) dyads reported significantly greater perceived responsiveness, t (551.92) = 2.80, p = .005, d = 0.24, enjoyment, t (509.25) = 2.65, p = .008, d = 0.23, and desire to affiliate, t (541.41) = 3.75, p < .001, d = 0.32, but not self-disclosure, t (534.60) = 1.16, p = .247, d = 0.10, or closeness, t (540.06) = 0.84, p = .401, d = 0.07. Following our preregistration, we controlled for the gender makeup of the dyads in all analyses.[8] We used effects coding for the gender make-up (−0.5 = mixed-gender, 0.5 = same-gender), topics (−0.5 = small talk, 0.5 = intimate), and medium (−0.5 = texting, 0.5 = face-to-face) variables so that main effects could be interpreted in relation to the average score for other variables.

Hypothesis testing

To test for main effects, we entered topics, medium, and gender make-up into the model with a random intercept for the dyad. We then entered the topics × medium interaction term into the model to test the interaction. The model was examined separately for each dependent variable. Standardized beta coefficients, p-values, confidence intervals, and effect sizes for the linear mixed-effects models are summarized in Table 3.

For our first hypothesis, we predicted that intimate conversation would lead to greater social connection than small talk (H1). Indeed, a significant main effect of topics revealed that participants who had an intimate (vs. small talk) conversation reported greater self-disclosure, perceived responsiveness, closeness, and enjoyment. However, the main effect of topics on the desire to affiliate was not significant (see Table 3). In line with our hypothesis, these findings suggest that intimate conversation promotes greater immediate social connection than small talk, but this difference may not extend to the desire to maintain that social connection in the future.

For our second hypothesis, we predicted that FtF conversations would lead to greater social connection than texting (H2). Indeed, a significant main effect of medium revealed that participants interacting FtF (vs. via texting) reported greater self-disclosure, perceived responsiveness, closeness, enjoyment, and desire to affiliate (see Table 3). In line with our hypothesis, these findings suggest that getting-acquainted conversations occurring FtF lead to greater social connection than texting conversations of the same length.

For our third hypothesis, we predicted a statistical interaction between topics and medium, such that the effect of intimate conversation on social connection would be stronger for FtF (vs. texting) interactions (H3). Contrary to our prediction, the interaction between topics and medium was not significant for any of the outcome variables (see Table 3 and Figure 1). These findings suggest that intimate conversation can still promote social connection when texting. Indeed, follow-up simple effect analyses (see Table 4)[9] revealed that when texting, participants who had an intimate (vs. small talk) conversation reported greater self-disclosure, perceived responsiveness, and closeness, but there was no difference in their enjoyment or desire to affiliate. Similarly, when FtF, participants who had an intimate (vs. small talk) conversation reported greater self-disclosure, perceived responsiveness, and closeness, but

Table 3. Regression coefficients for topics, medium, and gender makeup for each outcome variable.

	Main Effects Model				Interaction Model			
Variable	*b* (*SE*)	95% CI	*p*	*d*	*b* (*SE*)	95% CI	*p*	*d*
Self-Disclosure								
Topics	1.53 (.15)	[1.24, 1.83]	< .001	1.20	1.49 (.15)	[1.20, 1.79]	< .001	1.16
Medium	1.11 (.15)	[0.81, 1.40]	< .001	0.88	1.08 (.15)	[0.78, 1.37]	< .001	0.85
Gender Makeup	0.35 (.15)	[0.05, 0.64]	.022	0.27	0.33 (.15)	[0.03, 0.62]	.030	0.26
Topics*Medium					0.58 (.30)	[–0.01, 1.17]	.054	$\eta_p^2 = .01$
Responsiveness								
Topics	0.30 (.08)	[0.15, 0.45]	< .001	0.46	0.30 (.08)	[0.15, 0.45]	< .001	0.45
Medium	0.28 (.08)	[0.13, 0.43]	< .001	0.43	0.28 (.08)	[0.13, 0.43]	< .001	0.43
Gender Makeup	0.23 (.08)	[0.08, 0.38]	.003	0.36	0.23 (.08)	[0.08, 0.38]	.003	0.35
Topics*Medium					0.02 (.15)	[–0.28, 0.32]	.913	$\eta_p^2 < .001$
Closeness								
Topics	0.48 (.09)	[0.30, 0.66]	< .001	0.61	0.48 (.09)	[0.29, 0.66]	< .001	0.60
Medium	0.32 (.09)	[0.13, 0.50]	< .001	0.41	0.31 (.09)	[0.13, 0.49]	.001	0.40
Gender Makeup	0.12 (.09)	[–0.06, 0.30]	.187	0.16	0.12 (.09)	[–0.06, 0.30]	.198	0.15
Topics*Medium					0.08 (.19)	[–0.29, 0.44]	.684	$\eta_p^2 < .001$
Enjoyment								
Topics	0.29 (.12)	[0.06, 0.52]	.013	0.30	0.29 (.12)	[0.06, 0.52]	.013	0.29
Medium	0.30 (.12)	[0.07, 0.53]	.010	0.31	0.30 (.12)	[0.07, 0.53]	.011	0.31
Gender Makeup	0.31 (.12)	[0.08, 0.54]	.008	0.32	0.31 (.12)	[0.09, 0.54]	.008	0.32
Topics*Medium					–0.03 (.23)	[–0.48, 0.43]	.904	$\eta_p^2 < .001$
Desire to Affiliate								
Topics	0.23 (.13)	[–0.02, 0.48]	.079	0.21	0.21 (.13)	[–0.04, 0.46]	.102	0.19
Medium	0.29 (.13)	[0.04, 0.54]	.023	0.27	0.28 (.13)	[0.03, 0.53]	.030	0.26
Gender Makeup	0.46 (.13)	[0.21, 0.71]	< .001	0.43	0.46 (.13)	[0.21, 0.71]	< .001	0.42
Topics*Medium					0.21 (.26)	[–0.29, 0.71]	.412	$\eta_p^2 < .001$

Note. Regression coefficients and their confidence intervals are reported. Effects coding was used for the topics (small talk = –0.5, intimate = 0.5), medium (texting = –0.5, face-to-face = 0.5), and gender make-up (mixed-gender = –0.5, same-gender = 0.5) variables. CI = confidence interval.

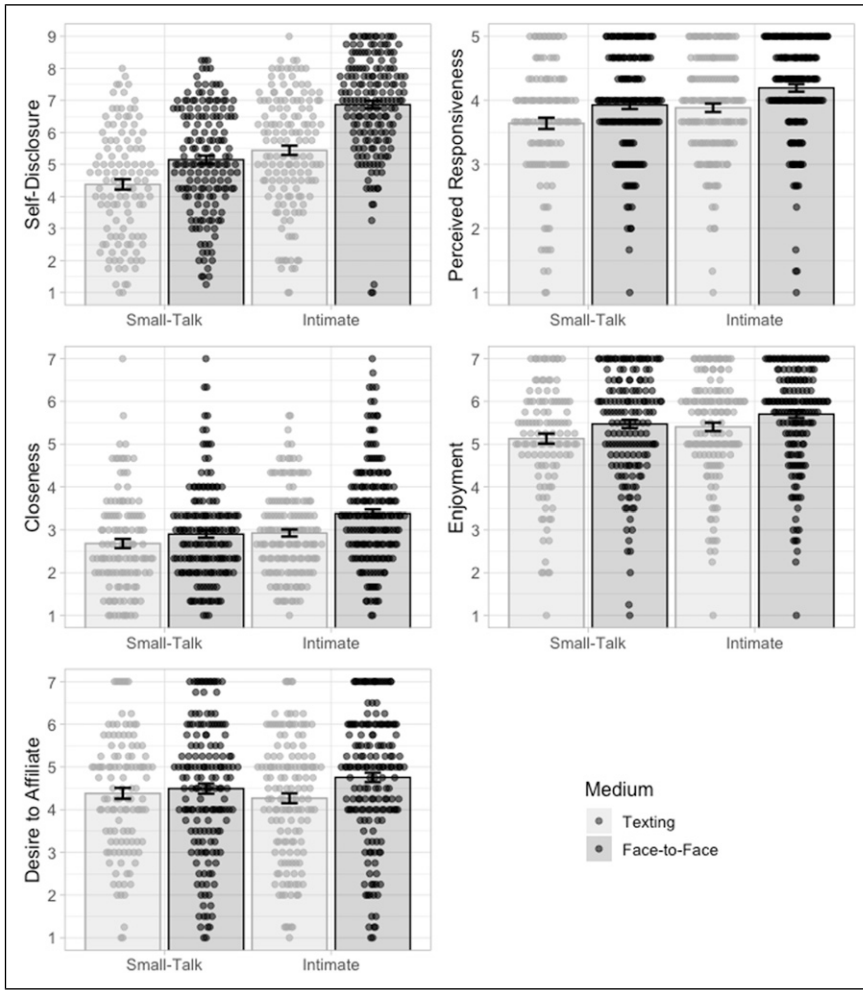

Figure 1. Interaction between conversation topics and medium for each outcome variable. *Note.* Each dot represents an individual participant. Bars reflect standard errors.

there was no difference in their enjoyment or desire to affiliate. Thus, the extent to which intimate conversation promotes social connection above small talk may be similar for both texting and FtF interactions (see the Discussion for further examination).

Examining the interpersonal process model of intimacy

In line with previous research, results from this study suggest that conversation partners feel more socially connected after interacting FtF than over texting, regardless of whether that conversation was intimate or small talk (supporting H2). The Interpersonal Process Model of

Table 4. Simple effects comparing intimate conversations to small talk within medium.

	Texting				Face-to-Face			
Variable	*t*	*df*	*p*	*d*	*t*	*df*	*p*	*d*
Self-Disclosure	5.27	293	< .001	0.62	8.97	281	< .001	1.07
Responsiveness	2.49	296	.013	0.29	3.01	281	.003	0.36
Closeness	3.10	296	.002	0.36	4.16	281	< .001	0.50
Enjoyment	1.74	297	.082	0.20	1.81	281	.072	0.22
Desire to Affiliate	0.55	295	.586	0.06	1.87	281	.063	0.22

Note. Positive scores indicate a greater score for intimate topics compared to small talk. The gender make-up of the dyad (–0.5 = mixed gender, 0.5 = same gender) was controlled for in analyses.

Intimacy (Reis & Shaver, 1988) proposes that the reason *why* texting interactions may not promote as much closeness is that they hinder the ability to self-disclose and to perceive others as responsive. Thus, we conducted exploratory (i.e., not preregistered) analyses to examine whether there is a serial indirect effect of medium (FtF vs. texting) on closeness, enjoyment, and desire to affiliate through self-disclosure and perceived responsiveness.

We used M*plus* (Muthén & Muthén, 2007) to conduct path analyses with 5,000 bootstrapped confidence intervals. To account for the interdependence within dyads, we used a complex sampling design to estimate effects with robust standard errors (Asparouhov & Muthén, 2010). Because the topics × medium interaction was not significant for any of the social connection variables, we did not test a moderated-mediation effect. Instead, we controlled for conversation topics (−0.5 = small talk, 0.5 = intimate) and the gender make-up of the dyad (−0.5 = mixed-gender, 0.5 = same-gender) for all pathways, and the model was examined separately for each dependent variable. The pathways for the serial mediation model were estimated as follows: medium (FtF vs. texting) predicting self-disclosure, perceived responsiveness, and the dependent variable; self-disclosure predicting perceived responsiveness and the dependent variable; and perceived responsiveness predicting the dependent variable. Finally, we estimated three indirect effects: the serial indirect effect through self-disclosure and perceived responsiveness, the indirect effect through self-disclosure alone, and the indirect effect through perceived responsiveness alone.

The standardized parameters for the individual pathways for each model are reported in Figure 2, and the indirect effects with bootstrapped confidence intervals are reported in Table 5. When controlling for conversation topics and gender make-up, there was a significant serial indirect effect of medium through self-disclosure and perceived responsiveness on closeness, enjoyment, and desire to affiliate. Specifically, interacting FtF (vs. texting) led to greater self-disclosure, which in turn was associated with greater perceived responsiveness, which in turn was associated with greater closeness, enjoyment, and desire to affiliate. In other words, texting hindered the ability of interaction partners to disclose personal information, ultimately resulting in lower perceived responsiveness and social connection.

When examining the self-disclosure and perceived responsiveness mediators independently (see Table 5), we found that the indirect effect of medium through self-disclosure was significant for closeness, enjoyment, and desire to affiliate, but the indirect

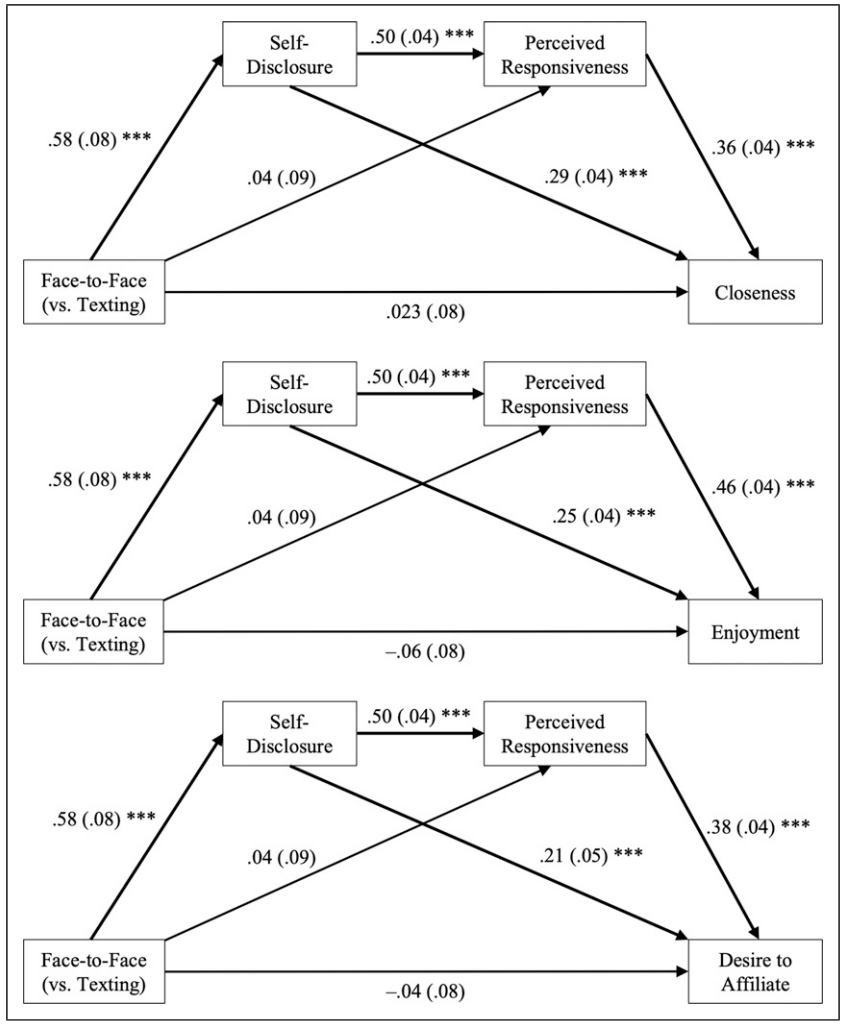

Figure 2. Direct pathways for the serial indirect effect models for each outcome variable. *Note.* Standardized regression coefficients and robust standard errors that adjust for the interdependence of the dyad are reported. Medium is effects coded (−0.5 = texting, 0.5 = face-to-face). Topics (−0.5 = small talk, 0.5 = intimate) and gender makeup of the dyad (−0.5 = mixed gender, 0.5 = same gender) are controlled for but not shown in the figure. Bold arrows indicate significant indirect pathways. *p < .05, **p < .01, ***p < .001.

effects of medium through perceived responsiveness were *not* significant. In other words, interacting over texting (vs. FtF) did not directly reduce how much a person perceived their partner as responsive, but rather it reduced how much they self-disclosed about themselves, and in turn, less self-disclosure may have provided fewer opportunities for

Table 5. Conditional indirect effects of medium through self-disclosure and perceived responsiveness.

Pathway	β	*SE*	*p*	95% CI
Closeness (*C*)				
FtF → *SD* → *C*	.17	.03	< .001	[.11, .25]
FtF → *PR* → *C*	.01	.03	.663	[–.05, .08]
FtF → *SD* → *PR* → *C*	.10	.02	< .001	[.07, .15]
Total Effect	.31	.09	< .001	[.14, .48]
Total Indirect Effect	.29	.05	< .001	[.18, .39]
Enjoyment (*E*)				
FtF → *SD* → *E*	.15	.03	< .001	[.11, .27]
FtF → *PR* → *E*	.02	.04	.663	[–.08, .12]
FtF → *SD* → *PR* → *E*	.13	.02	< .001	[.12, .23]
Total Effect	.24	.09	.009	[.06, .41]
Total Indirect Effect	.30	.06	< .001	[.18, .42]
Desire to Affiliate (*DA*)				
FtF → *SD* → *DA*	.12	.04	.001	[.06, .20]
FtF → *PR* → *DA*	.02	.03	.661	[–.05, .08]
FtF → *SD* → *PR* → *DA*	.11	.02	< .001	[.08, .16]
Total Effect	.21	.09	.020	[.03, .38]
Total Indirect Effect	.25	.05	< .001	[.15, .35]

Note. Standardized regression coefficients, robust standard errors that adjust for the interdependence of the dyad, and 5000 bootstrapped confidence intervals are reported. Medium is effects coded (–0.5 = texting, 0.5 = face-to-face), such that positive estimates indicate values are greater for face-to-face than texting conversations. Topics (–0.5 = small talk, 0.5 = intimate) and gender makeup of the dyad (–0.5 = mixed gender, 0.5 = same gender) are controlled for but not shown in the table. Closeness, enjoyment, and desire to affiliate were examined in separate models but are presented in the same table for brevity. CI = confidence interval; FtF = face-to-face; *SD* = self-disclosure; *PR* = perceived responsiveness.

one's partner to be perceived as responsive.[10] Altogether, these findings provide evidence that when examining the influence of conversation medium, self-disclosure is a key factor in the intimacy-development process.

Discussion

As emerging and evolving technologies change how people develop new relationships, it is important to understand how basic relationship processes occur through these channels. Guided by the Interpersonal Process Model of Intimacy (Reis & Shaver, 1988), the present research used a controlled dyadic experiment to examine the effectiveness of intimate conversation in promoting social connection in texting interactions, to compare this effectiveness to FtF interactions, and to evaluate the serial process of self-disclosure and perceived responsiveness in contributing to differences between these mediums.

Summary of results

In line with previous research using the Fast Friends Paradigm and our first hypothesis, we found that unacquainted dyads who had an intimate conversation, whether texting or FtF, self-disclosed more, perceived their interaction partner as more responsive, and experienced greater closeness and enjoyment than those who engaged in small talk. However, we did not find a difference in participants' desire to affiliate with their partner. These findings suggest that having an intimate conversation can bring two people closer together *for the moment*, but there may be other factors that compel people to continue this connection, such as the perceived similarity of the other person or the quality of one's current social network. Additionally, because our participants met as part of a research study instead of through an encounter in daily life, it is possible that their desire to affiliate was influenced more by the expectation that they would likely not encounter this person again, rather than the quality of the conversation.

Next, we compared social connection between FtF and texting interactions across conversation topics. In line with our second prediction, we found that unacquainted dyads who interacted FtF self-disclosed more, perceived their interaction partner as more responsive, experienced greater closeness and enjoyment, and had a greater desire to affiliate in the future than those who conversed over texting. These findings begin to suggest that texting conversations may foster less social connection than those FtF. However, it is important to consider that dyads in this study interacted for the same amount of time in both mediums, and texting dyads interacted synchronously instead of asynchronously, which is more common in real-world texting interactions. It is possible that participants in the texting condition self-disclosed less simply because they did not have enough time. Indeed, Social Information Processing Theory (Walther, 1992, 1996, 2011) posits that texting interactions need more time to reach the same level of information sharing as FtF interactions. With this additional time, the ability to engage in selective self-presentation via texting may lead to *hypersonal* interaction that is closer than FtF—something that our participants did not have the opportunity to do. However, because we measured self-disclosure as a matter of depth (i.e., "To what extent did you disclose information about your innermost self") rather than breadth or amount, participants in the texting condition may have been able to compensate for the limited time by disclosing personal aspects of themselves in fewer words than they normally would when speaking, by using more "we" than "I" statements (Slatcher et al., 2008), or by expressing themselves with emoticons or emojis.

Next, we examined how the boost in social connection from intimate conversation over texting compares to FtF. We hypothesized that the effect of intimate conversation on social connection would be stronger for FtF interactions compared to texting. Contrary to our prediction, intimate conversation was just as effective at promoting social connection in texting interactions as it was for FtF interactions. One possible explanation for this null finding is that this study is underpowered to detect a significant interaction effect because the sample size was determined by time constraints for data collection, rather than an a *priori* power analysis. However, a sensitivity power analysis of a simplified model not accounting for the interdependence of dyads indicated that our sample size could detect a small interaction effect ($\eta_p^2 = 0.02$), and most of the interaction effects we observed were

much smaller than this ($\eta_p^2 < 0.001$, $p > .411$), except for self-disclosure ($\eta_p^2 = 0.01$, $p = .054$). Thus, this study may have been underpowered to detect an interaction effect for self-disclosure, but it is likely that the effects for the other variables were too small to be meaningful, regardless of our power to detect them.

Another possible explanation for this null finding could be that having an intimate conversation is always better than small talk, regardless of medium. As noted above, this may be due to the adaptability of people—especially young adults like in our sample—to be able to effectively communicate their thoughts, feelings, and understanding verbally and nonverbally over text. Further, because texting participants had just as much time to communicate as FtF participants, it is possible that intimate texting conversations with more time may have led to a *greater* increase in social connection than for FtF, reaching a level of *hyperpersonal* communication (Walther, 1992, 1996, 2011)—something that could be examined in future research.

Finally, we investigated whether the differences in social connection we observed between texting and FtF interactions could be explained by the Interpersonal Process Model of Intimacy. To this aim, exploratory (i.e., not preregistered) mediation analyses revealed a significant indirect effect of conversation medium on closeness, enjoyment, and desire to affiliate through self-disclosure and responsiveness while controlling for conversation topics. Specifically, interacting via texting (vs. FtF) led people to self-disclose less, which in turn was associated with lower perceived responsiveness, which in turn was associated with lower closeness, enjoyment, and desire to affiliate. In other words, the texting medium hindered self-disclosure regardless of whether participants were using intimate or small talk prompts. In turn, lower self-disclosure may have resulted in fewer opportunities for partners to be perceived as responsive, ultimately leaving texters feeling less socially connected. Overall, these findings provide evidence that it is more difficult to feel socially connected over texting, and this may be driven by reductions in two key processes for building intimacy: self-disclosure and perceived responsiveness.

Theoretical and practical implications

As social interactions continue to transpire through technology, it is important to apply and adapt theoretical models of relationship processes in these new communication spaces. The present research contributes to this goal by demonstrating that intimate conversations comprised of reciprocal self-disclosure and responsiveness can foster social connection above and beyond small talk, and to the same degree as for FtF conversations. Because we included a small talk comparison group in our design, our findings expand on previous studies that had only compared intimate texting conversations to intimate FtF conversations (e.g., Mallen et al., 2003; Okdie et al., 2011; Sprecher, 2014, 2021b; Sprecher & Hampton, 2017). This method allowed us to demonstrate that the Fast Friends Paradigm is an effective tool for promoting social connection in text-based communication, which has implications for how people communicate with others when FtF conversation is not an option. For instance, distance may make it inconvenient or impossible to meet, personal safety may be of concern, or individual differences in preferred communication medium may favor texting or messaging. For situations in which texting

is the preferred or only option—such as when initiating a conversation on a dating app—people can benefit from knowing that discussing intimate topics will lead to a more fruitful conversation, and companies could strategically provide users with these prompts to help get the conversation started. In fact, at least one popular press article has already suggested using the 36 questions from the Fast Friends Paradigm as a conversation starter on dating apps (Mugayi, 2022), and now our findings provide evidence that this is an effective strategy.

Strengths, limitations, & future directions

One strength of the present study is that we operationalized text-based communication as text messaging on a smartphone, whereas previous studies have used instant messaging on a computer (e.g., Mallen et al., 2003; Okdie et al., 2011; Sprecher, 2014; Sprecher & Hampton, 2017). Text messaging via smartphones has become nearly ubiquitous (Duggan, 2013; Hall, 2023), making our methodology more representative of how people communicate with others in daily life. However, the smartphones used in this study were provided by the researcher to ensure participant anonymity and prevent them from getting distracted by other text conversations or apps. Thus, future research could build on these findings by allowing participants to interact over texting with their own smartphone, equipped with their favorite emojis, shortcuts, and distractions, to further emulate how this communication process occurs in daily life.

One potential limitation of our study design was the decision to permit equal time for both FtF and texting conversations. We made this decision so that any difference found between conditions would not be confounded by time, but we recognize that other research has suggested that texting conversations be given more time to match the level of information sharing in FtF interactions (e.g., Walther, 2011). Future research could address this limitation by allowing participants in the texting condition (or an additional texting condition) more time to "catch up" to their FtF counterparts.

Another limitation of this study is that the contrived conversation of the Fast Friends Paradigm—with the synchronous nature of the texting conversations—may limit the generalizability of these results to real-world situations, as people do not typically engage in long, structured conversations with strangers they have just met. Additionally, the participants in this study were predominantly young college students—a population that is comfortable engaging in text-based communication and is encouraged to socialize. Thus, future research could build on these findings to examine if people of various ages still experience boosts in social connection when they are prompted to have unstructured intimate conversations in daily life.

Conclusion

Text-based messaging is a prevalent form of communication in modern society, so it is important to understand how basic interpersonal processes unfold over this medium. Using the Fast Friends Paradigm, findings from this study suggest that in-person conversation is generally better for promoting social connection than texting, but when in-

person conversation is not an option, having an intimate conversation over texting is better than small talk. These findings have important implications for understanding how people can intentionally use text-based messaging to establish and sustain social relationships in their daily lives.

Author Note

Portions of these findings were presented as a poster at the 2021 Society for Personality and Social Psychology virtual conference.

Acknowledgements

We thank the research assistants in the Social Life and Motivation Lab at the University of Pittsburgh for their assistance with data collection, and Amanda L. Forest and Sophia Choukas-Bradley for feedback on earlier drafts of this manuscript.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Open research statement

As part of IARR's encouragement of open research practices, the author(s) have provided the following information: This research was pre-registered. The aspects of the research that were pre-registered were the hypotheses, analyses, and exclusion criteria. The registration was submitted to the Open Science Framework: https://doi.org/10.17605/OSF.IO/3CF6V. The data used in the research can be publicly posted. The data can be obtained at: https://osf.io/uv9ny/ or by emailing: cmleckfor@pitt.edu. The materials used in the research can be publicly posted. The materials can be obtained at: https://osf.io/uv9ny/ or by emailing: cmleckfor@pitt.edu.

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Data Availability Statement

The data, syntax, measures, and supplemental materials for this study are openly available at https://osf.io/uv9ny/

Supplemental Material

Supplemental material for this article is available online.

Notes

1. Both meta-analyses (Kim & Dindia, 2011; Ruppel et al., 2017) were not limited to interactions with unacquainted dyads.
2. An additional set of competing hypotheses was preregistered to compare social connection between the intimate/texting and small talk/FtF conditions (H4a/b). These results are reported in the Supplemental Materials for brevity.
3. Power analyses do not account for the interdependence within dyads.
4. Because participants were waiting in the same room together, it is possible that some dyads interacted before the study began. However, this possibility was consistent across conditions, thereby creating unsystematic (vs. systematic) variance.
5. Of texting dyads who consented to us saving their transcripts, ~68% of the conversations contained at least one emoji.
6. Additional measures of social connection were collected and included in the preregistration: perceived partner disclosure, perceived partner support, perceived partner instrumentality, positive affect, and negative affect. The pattern of results for these measures are like those reported here. However, because these measures are not traditionally used as indicators of post-interaction social connection, they are reported in the Supplemental Materials for brevity.
7. We collected data on gender, rather than sex, to be inclusive of participants whose gender does not align with their sex assigned at birth or a binary spectrum.
8. Descriptive statistics and results disaggregated by dyad gender makeup are reported in the Supplemental Materials.
9. Exploratory simple effect analyses comparing mediums within each topic are reported in the Supplemental Materials.
10. To rule out alternative explanations, we ran serial mediation models with perceived responsiveness predicting self-disclosure. The serial indirect effects for these models were *smaller* than when self-disclosure predicted perceived responsiveness, thereby suggesting that our initial examination better explains these data (see the Supplemental Materials for a full reporting of these models).

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