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The Social Function of Autobiographical Stories in the Personal and Virtual World: An Initial Investigation

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Abstract

Receiving another's autobiographical story may serve to elicit feelings of liking and empathy for the story sharer. Research has mostly examined social functions of autobiographical stories for in-person communications. The current experiment ($N = 60$) examined whether levels of liking, closeness, and empathy felt for a stranger (female confederate) after receiving her story depended on if (a) the story was received in-person or through instant message (IM), and (b) the story was positive or negative. Liking and having empathy for the stranger was higher in the in-person conditions compared to IM conditions. This effect was mediated by how engaged participants were with the story. Participants liked the stranger more after receiving the positive autobiographical story, but they felt more empathy toward her after the negative autobiographical story. The discussion considers parameters of the communication platform and people's perceptions of stories as explanations for the results. Limitations are considered.

Keywords: Autobiographical stories; Social function; Computer-mediated communication; In-person communication; Story valence

1. Introduction

Examining the uses of stories about autobiographical experiences in everyday life has a long history in cognitive science (Baddeley, 1987; Neisser, 1978). One use or function

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of autobiographical stories is to strengthen social bonds (Bruce, 1989; Nelson, 1993) by getting to know strangers (Harris, Rasmussen, & Berntsen, 2014; Webster, 1993), by enhancing closeness in established relationships (Waters, 2014), and by eliciting empathy (Pohl, Bender, & Lachmann, 2005). Past research from self-reports (Bluck & Alea, 2011; Bluck, Alea, Habermas, & Rubin, 2005), experiments (Alea & Bluck, 2007; Bluck, Baron, Ainsworth, Gesselman, & Gold, 2013), naturalistic observations (Demiray, Mischler, Martin, & Knight, 2017), and narrative analyses of conversations (Kulkofsky, Wang, & Koh, 2009; Pasupathi, Lucas, & Coombs, 2002) provide evidence for a social bonding function of autobiographical stories. Detailed, emotionally rich autobiographical stories about a specific experience (Pillemer, 1998) can provide social benefits for both the person receiving and the one sharing the story (Alea & Bluck, 2003). The focus of this study was on the story receiver because, although we often receive stories in daily life (Demiray et al., 2017), the social benefits are less well documented.

To our knowledge, work examining how receivers use and perceive stories typically involves in-person communication (Hirst & Echterhoff, 2012; Pasupathi, 2001) despite there also being diverse computer-mediated ways that people receive stories (e.g., Facebook, instant messaging, Twitter). Sometimes computer-mediated communication (CMC) platforms (Thurlow, Lengel, & Tomic, 2004) are akin to dyadic in-person conversations—with one receiver (Baym, Zhang, & Lin, 2004). At other times, CMC platforms allow people to communicate beyond the dyad, to groups of others who are passive receivers of what is shared (e.g., IM group chats, blog posts, support groups; Morehouse & Crandall, 2014; Rains & Brunner, 2015). Evidence suggests, despite some early work to the contrary (Kiesler, Siegel, & McGuire, 1984), that receiving personal, emotional stories online (Choi & Toma, 2014; Lin, Tov, & Qiu, 2014) can help facilitate social bonding. CMC users have larger social networks and feel more supported and less socially isolated than non-users (Hampton, Goulet, Rainie, & Purcell, 2011). Furthermore, the social benefits of receiving stories via CMC may be particularly strong among strangers (López-López, Ruiz-de-Maya, & Warlop, 2014).

Thus, in this study we bring together literature on the social bonding function of autobiographical, self-disclosure, and CMC to examine the effects of (a) CMC on social bonding from the receiver's point of view, (b) receiving communications from strangers, (c) autobiographical story-like communications (i.e., not pictures, tweets), and (d) valence of the communication. The first aim was to examine the extent to which participants would develop social bonds with a stranger after receiving her autobiographical story either in-person or via IM. The aim was not to determine if autobiographical stories serve a social bonding function (cf. Beike, Brandon, & Cole, 2016), but instead to examine which communication platform better enhances closeness, liking, and empathy for the person receiving the story. The second aim was to examine whether level of social bonding varies by valence (e.g., Gable & Reis, 2010).

1.1. Social bonding: Receiving stories in-person versus virtual communication

Self-disclosure, which ranges from sharing biographical information to autobiographical experiences, is a fundamental component of developing relationships with others

(Altman & Taylor, 1973; Collins & Miller, 1994). Although not a consensus (Sacco & Ismail, 2014), the anonymity and absence of nonverbal cues in the virtual world seem to enhance the frequency and content of self-disclosures, compared to in-person communications (Walther, 2011). People feel more confident and uncensored, which in turn can lead to enriched bonding online, particularly when relationships are developing (Tidwell & Walther, 2002).

Most research has examined social bonding in the virtual world from the discloser's perspective, though online activity also involves passively receiving information (e.g., reading Facebook posts; Burke & Kraut, 2014). We identified only one study comparing in-person to virtual communication specifically from the recipient's perspective following an intimate autobiographical self-disclosure. Jiang, Bazarova, and Hancock (2011) had participants receive a personal experience (e.g., a pre-scripted gaining weight in college story) from a confederate (stranger) either in-person or via IM. Intimate feelings toward the stranger were higher for IM, mirroring the literature's pattern of relational benefits for CMC over in-person communication. Thus, we hypothesized the main effect:

H1 Participants will like the stranger (female confederate) more, and feel closer to her, after receiving her autobiographical story via IM compared to in-person.

For empathy, however, CMC may be less effective (Carrier, Spradlin, Bunce, & Rosen, 2015; Konrath, 2012; Powell & Roberts, 2017). Little work approaches the question from the viewpoint of a receiver who does not know the person disclosing. In one study, Holtzman, DeClerck, Turcotte, Lisi, and Woodworth (2017; Study 2) had participants engage in a stressful task (i.e., 5 min speech) and a confederate provided supportive comments via IM or in-person. Although these comments were not autobiographical stories, participants who received statements in person were more comforted. Thus, we predicted the main effect:

H2 Participants will feel more empathy toward the stranger after receiving her autobiographical story in-person compared to via IM.

1.2. Social bonding: Receiving positive versus negative autobiographical stories

Positive autobiographical stories (Alea, Arneaud, & Ali, 2013; Rasmussen & Berntsen, 2009) and self-disclosures (Gable & Reis, 2010) are more likely than negative ones to enhance liking and closeness in-person and also in CMC (Orben & Dunbar, 2017; Rains & Brunner, 2015). One study (Hancock, Landrigan, & Silver, 2007) tasked participants with "getting to know" a stranger (another participant) via 30-min of IMing. Affective tone of the IM for one dyadic partner was manipulated: Half expressed positive and half expressed negative affect. The naïve receiver (i.e., unaware of the manipulation) reported liking the stranger more when they received positive compared to negative sentiments. However, negative communications seem better for eliciting empathy and compassion (Cuff, Brown, Taylor, & Howat, 2016; Powell & Roberts, 2017). One study found

receivers of emotional stories (e.g., sadness over missing family) were more likely to feel bad for and help a stranger when that person communicated in-person negative emotions (compared to not communicating negative emotions; Graham, Huang, Clark, & Helgeson, 2008). Thus, story valence main effects were hypothesized:

H3 and H4 Participants will report liking and feeling closer to the stranger in the positive story condition, but feel more empathy for the stranger in the negative story condition. No interaction effects were hypothesized though they were explored.

2. Method

2.1. Participants

Sixty undergraduates (M age = 21.00, SD = 1.79, 18–28 years old) were randomly assigned to in-person-positive story (n = 13, female n = 10), in-person-negative story (n = 15, female n = 10), IM-positive story (n = 15, female n = 6), IM-negative story (n = 17, females = 15).[1] Age did not vary by condition, $F < 1.00$; gender did, χ^2 (3) = 9.14, p = .027, and was controlled in analyses.[2] The ethnic distribution was 48.33% Afro-Trinidadian, 25.00% Indo-Trinidadian, and 26.67% mixed-ethnicity. Recruitment was through the university's psychology Facebook page and courses, for which credit was received. CMC was used at ceiling levels (1 = *monthly* to 6 = *several times a day*), all but four participants used IM, and 93.22% had been using it for years.

The sample size is adequate to test main effects, based on previous effect sizes. For example, Jiang et al. (2011; N = 79) found a large effect (Cohen's $d = 0.93$) for differences between in-person and IM conditions. Hancock et al. (2007; N = 40 dyads) found a large effect (Cohen's d = 1.33) between positive and negative IMs. Thus, we estimated the sample size using a large effect ($d = 0.80$, α-level = 0.05, 1-β = 0.80; Cohen, 1973; Simmons, Nelson, & Simonsohn, 2013). Cell size estimates for main effects = 20, which we exceed. Although we had no a priori interaction hypothesis, and there is not prior work to draw from, we estimated sample sizes for a medium ($f = 0.25$) and large ($f = 0.40$) interaction effect (α = 0.05, 1-β = 0.80). Sample size estimates ranged from 127 to 73, respectively. Thus, our sample is slightly below threshold for detection of a large interaction effect and perhaps underpowered (Simmons et al., 2013). We thus use null hypothesis testing (p-values) as well as estimation data (Cumming, 2014) to interpret results for the interaction, as well as all other results, for consistency. Tentative language is used when interpreting these findings.

2.2. Measures

2.2.1. Social bonding

A modified semantic-differential scale which uses single-word adjective descriptors (see words below) and a Likert-scale (Osgood, Suci, & Tannenbaum, 1978) to assess

feelings toward the stranger after receiving the story was administered. Responses range from 1 (*not at all*) to 5 (*completely*). Exploratory factor analysis (Promax rotation) suggested three factors (62.09% of variance). A 0.40 factor-loading criterion was used (Cliff & Hamburger, 1967), as it is suitable regardless of sample size (Stevens, 1992). The *liking subscale* (Cronbach's $\alpha = 0.70$) includes (loadings in parentheses): happiness (0.87), liking (0.75), and humor (0.516). The *compassionate empathy subscale* ($\alpha = 0.67$) includes interest (boredom reversed; 0.82), warmth (distance reversed 0.68), and sympathy (0.50). The *closeness* subscale includes understanding (0.69), comfort (tension reversed; −0.52), and closeness (0.46), but internal consistency was poor. Deleting the comfort item improved consistency ($\alpha = 0.63$). An intimacy item did not load.

2.2.2. Potential covariates: Story engagement and similar experience

An index assessing story engagement (modified from Talarico, LaBar, & Rubin, 2004) asked whether participants were reliving the stranger's experience, could hear and see it in their mind, experienced it as a coherent story, and whether they felt intense emotions. Responses range from 1 to 7. Principle axis factor analysis (Promax rotation) revealed one factor (59.59% of variance; $\alpha = 0.83$), and thus higher numbers are indicative of high emotional and perceptual engagement with the story. Having had a similar experience to the stranger was assessed (modified from Talarico et al., 2004) using a scale from *not at all* (1) to *clear as if now* (7) asking whether the story made them travel back in time and re-experience emotions associated with their own experience ($\alpha = 0.92$).

2.2.3. Manipulation checks: Story valence and equivalence

For valence, participants rated the story shared by the stranger from *negative* (1) to *positive* (7). Structural story equivalence across in-person and IM conditions used 7-point Likert–scales for rating the order (*confusing* to *comprehensible*), complexity (*simple* to *complex*), realism (*bizarre* to *realistic*), and length (*short* to *long*) of the story.

2.3. Procedure and story

An advanced-level female film student acted as confederate, sharing a scripted autobiographical story about university exam final results (Table 1). The topic seemed to be one that students would relate to, true-to-life, and could be shared in person or via IM. Emotion-laden words were altered to manipulate valence. Pauses in the in-person condition were mirrored in the IM condition by pauses in the typed message. To control for minor fluctuations in the script across conditions, participants received the stranger's story in groups, rather than having the confederate share the story individually 60+ times. Group self-disclosure (Orben & Dunbar, 2017; Rains & Brunner, 2015) is ecologically valid because people hear stories in-person (e.g., hearing an autobiographical story in a group at a party) and via CMC (e.g., reading someone's autobiographical experiences as part of an IM group) as part of groups in daily life.

In the in-person conditions, the confederate delivered the story. In the IM conditions, the story was delivered through a pre-recorded Skype IM screencast, with the

Table 1
Autobiographical story shared by confederate across conditions

Good day./I'd like to introduce myself./I'm Arielle Henry,/I work in town and I live in Barataria/I'm 25 and a Postgraduate student of the University of the West Indies./Right now I am doing a Postgraduate Diploma in Petroleum Management after getting a BSc in Petroleum Geoscience last year./Oh gosh, last year was REALLY special./So it was finally coming down to the end of my final year,/Graduation was approaching and I could just FEEL it. And let me tell you, I couldn't wait for that first REAL pay check./I had one more course to do in this BLASTED place and that final exam determined everything./And OH GOSH, I was REALLY frightened./My friends and I had already gotten accepted for this internship program for British Petroleum./And the best part was that we didn't have to leave home./You all know how Trinidad is great./ Boy, this opportunity was just the best./And the thing is, I had REALLY studied for this exam./I had no time for anyone./Mummy had always told me to be the best person you want to see in the future./So this was me doing just that!/I'm telling you, I burnt the midnight oil./The day had reached for that exam and, boy, I was READY./I was anxious because, let me tell you, this paper would determine my whole life./Oh gosh, I was REALLY AFRAID./After the exam a lot of time passed and I got more anxious./I had already imagined the sweet life, nice cars and vacation trips./But you see when I got that email, I could have died./They told me, "Dear sir/madam, I am **happy (sorry)** to inform you that you have been **accepted (denied)** for our internship program as a result of your **excellent (poor)** exam performance."/In proper English./My heart stopped. I just couldn't believe it. (**I felt really stupid**)./I ran home and told my mother after she used all her money for this./**All this work I did, I am finally seeing results!/(All this work I did was for what? Nothing!)**

Note. A slash (/) represents where the stranger paused in the in-person condition or where a new message would appear on the instant messenger screen. Words in capitals were emphasized by the stranger in all conditions. Bold and underlined words indicate differences between the positive and negative (in parentheses) condition. Original was in locale dialect.

confederate's image in the corner. To make participants believe IM typing was in real-time a "... *is typing*" message indicated the next line was being typed, and an audio-bling sounded as a text-line was received. Skype IM was chosen because it (a) allows participants to see the stranger; (b) is used for group chats; (c) has been used in previous research (Jiang et al., 2011; Sprecher, Treger, & Wondra, 2013); and (d) is a platform for sharing experiences. After story-sharing, participants completed, in order, the story valence and equivalence, engagement and similar experience, social bonding, and demographic measures. The procedure took 45 min.

3. Results

3.1. Preliminary analyses

3.1.1. Manipulation checks

The story valence manipulation worked well: participants in the positive condition (M = 5.89, SD = 1.29) reported the stranger's autobiographical story as more positive than those in the negative condition (M = 3.69, SD = 1.84), $t(58) = -5.31$ $p = .000$. This difference was large, $g = -1.36$, M diff = −2.21 [−3.04, −1.34].[3] A one-way MANOVA demonstrated that structural dimensions of the story (length, story order, complexity,

realism) were equivalent across conditions, $\Lambda = 0.87$, $F(4, 53) = 2.06$, $p = .099$.[4] The story was moderate in length ($M = 4.03$, $SD = 1.36$), and the ordering of events in the story was clear ($M = 5.97$, $SD = 1.46$), simple ($M = 2.55$, $SD = 1.86$), and highly realistic ($M = 6.16$, $SD = 1.42$).

3.1.2. Potential covariates

Story engagement ($M = 5.31$, $SD = 0.78$) and similar experience ($M = 4.36$, $SD = 1.73$) were higher in the in-person compared to IM conditions (story engagement: $M = 4.48$, $SD = 1.59$; similar experience: $M = 3.92$, $SD = 1.79$). Participants were more engaged with the negative ($M = 5.14$, $SD = 1.11$) compared to positive story ($M = 4.64$, $SD = 1.24$), with the opposite pattern for similar experience (positive: $M = 4.92$, $SD = 1.46$; negative: $M = 3.07$, $SD = 1.67$). However, the Ms for story engagement and similar experience were not significantly different across the study conditions in a MANOVA: type of communication $\Lambda = 0.89$, $F(2, 26) = 1.60$, $p = .222$; story valence $\Lambda = 0.91$, $F(2, 26) = 1.24$, $p = .305$, interaction $\Lambda = 0.81$, $F(2, 26) = 2.97$, $p = .069$.

Story engagement was positively related, with large effects sizes, to greater liking, $r(60) = .40$, closeness, $r(60) = .60$, and compassionate empathy, $r(60) = .48$, ps = 0.000. Furthermore, for the 31 participants who said that they had a similar experience to the stranger's story, there was a significant positive relation with closeness, $r(31) = .40$, $p = .027$, with a large effect, and a medium-sized relation with compassionate empathy, although this relation was not significant, $r(31) = .25$, $p = .179$. The relation with liking was small and non-significant, $r(31) = -.01$, $p = .96$. Despite these subtle differences in relations, for consistency, both story engagement and similar experience were covariates.

3.2. Primary analyses

The analyses were a series of 2 (type of communication) × 2 (story valence) MANCOVAS to examine whether social bonding varied depending on whether the story was told in-person or via IM, and whether the story was positive or negative. The outcome variables in the MANCOVA were the three social bonding subscales: liking, closeness, and compassionate empathy. Gender was always a covariate. Furthermore, analyses were run without and then with story engagement and similar experience as covariates, to examine their independent effects on the results. If results changed, then the covariate was further examined as a possible mediator in the respective analysis (Orben & Dunbar, 2017).

Multivariate results indicated that there were significant main effects for type of communication, $F(3, 53) = 2.92$, $p = .042$, and story valence, $F(3, 53) = 10.40$, $p = .000$, with 37.10% of variance in social bonding being accounted for by story valence ($\Lambda = 0.63$), and 14.20% being accounted for by type of communication ($\Lambda = 0.86$). The multivariate interaction was not significant, $F(3, 53) = 0.78$, $p = .51$, and only explained 4.20% of the variance ($\Lambda = 0.96$). Because the interaction effect was underpowered, these results are considered exploratory.[5]

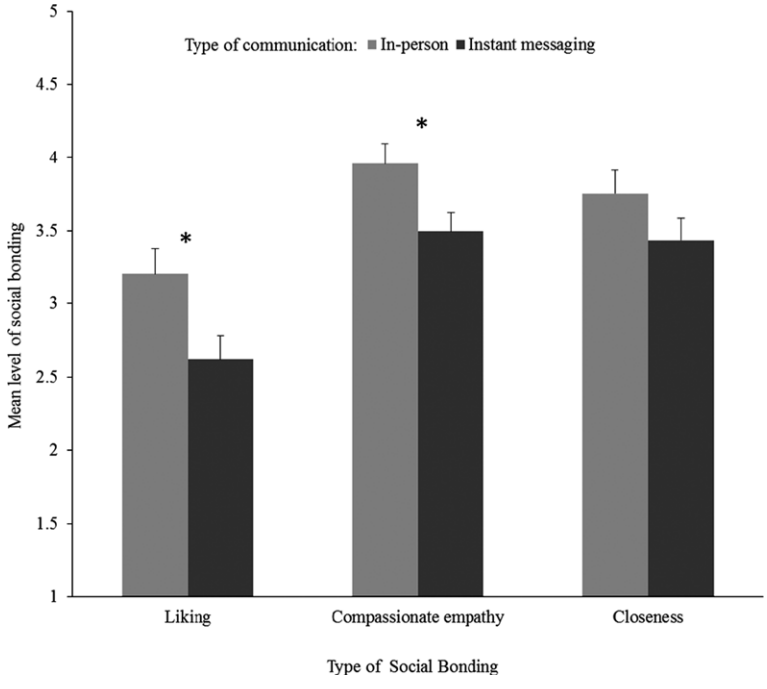

Fig. 1. Differences in social bonding between the in-person and IM conditions. Significant differences between types of communication are denoted with an asterisk (*).

3.2.1. Aim 1: Type of communication

There were significant univariate types of communication effects (Fig. 1) for liking, $F(1, 55) = 6.31$, $p = .02$, $\omega_p^2 = 0.09$, and compassionate empathy, $F(1, 55) = 5.83$, $p = .019$, $\omega_p^2 = 0.08$, with moderate effect sizes. Liking and compassionate empathy were higher in the in-person compared to IM condition, contradicting H1 but supporting H2. There were no closeness effects, $F(1, 55) = 2.10$, $p = .153$, $\omega_p^2 = 0.02$.[6] The liking, $F(1, 54) = 1.91$, $p = .093$, $\omega_p^2 = 0.02$, and compassionate empathy, $F(1, 54) = 1.22$, $p = .108$, $\omega_p^2 = 0.004$, effects, however, were no longer significant or meaningful in size when story engagement was a covariate. This is probably due to the mean level differences in story engagement by type of communication. Differences remained, however, when similar experience was co-varied for liking, $F(1, 25) = 11.71$, $p = .002$, $\omega_p^2 = 0.28$, and compassionate empathy, $F(1, 25) = 6.65$, $p = .016$, $\omega_p^2 = 0.17$). The effects, despite the sample size, were larger likely because having a similar experience to the stranger was not strongly related to liking or compassionate empathy.

As story engagement was potentially an indirect path, Hayes's PROCESS analyses (2013) were conducted: liking or compassionate empathy were outcomes, communication type was the independent variable, gender the covariate, and story engagement the mediator. Each analysis used 10,000 bootstrapped samples, and *unstandardized* regression coefficients (*coeff*) and 95% bootstrapped lower level and upper level confidence intervals are

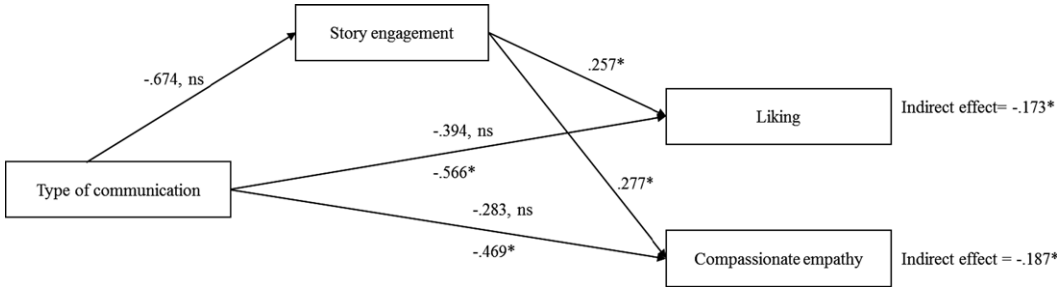

Fig. 2. Participants' engagement with the story as a mediator between type of communication and social bonding. Unstandardized regression coefficients are reported. Type of communication (0 = in-person, 1 = instant message) and total effects (i.e., without story engagement in the model) on social bonding are below the line, and direct effects (i.e., with story engagement in the model) are above the line. An asterisk (*) indicates significant effects.

reported (Hayes, 2013). There was a significant (CI entirely below zero) indirect effect via the receiver's engagement with the stranger's story (Fig. 2), between whether the story was received in-person or through IM, for both their liking of, *coeff* = −0.17, *SE* = 0.10 [−0.47, −0.03], and compassionate empathy for the stranger, *coeff* = −0.19, *SE* = 0.11 [−0.47, −0.03]. The indirect pathway is a combination of the relations between the participants' engagement with the story and the extent to which they felt liking and compassionate empathy toward the stranger, *and* the relation between the type of communication and the participants' engagement with the story. Participants who engaged with the story more reported liking the stranger more, *coeff* = 0.26, *SE* = 0.09 [0.08, 0.44] and feeling greater compassionate empathy for her, *coeff* = 0.28, *SE* = 0.09 [0.09, 0.47]. Participants were more engaged with the story in-person compared to by IM, *coeff* = −0.67, *SE* = 0.34 [−1.35, 0.00], though the upper level CI for this pathway was just above zero. However, indirect effects are not dependent on a statistically significant path between an independent variable (type of communication) and a mediator (Hayes, 2013), and changes in the total to direct effects support a full mediation scenario. Significant direct relations between type of communication and both liking and compassionate empathy become non-significant when story engagement is included in the mediation model (Fig. 2).

3.2.2. Aim 2: Story valence

Feeling closer to the stranger after receiving the story did not differ significantly by story valence, $F(1, 55) = 1.35$, $p = .250$, $\omega_p^2 = 0.006$ (Fig. 3), but there were significant differences in both liking, $F(1, 55) = 8.34$, $p = .006$, $\omega_p^2 = 0.11$, and compassionate empathy, $F(1, 55) = 13.02$, $p = .001$, $\omega_p^2 = 0.17$. Story receivers liked the stranger more after a positive compared to negative story (moderate-sized effect), partially supporting H3. The opposite pattern, with a larger effect, occurred for compassionate empathy. Supporting H4, participants felt more empathy for the stranger after the negative story. Despite the large positive relations between story engagement and social bonding (liking,

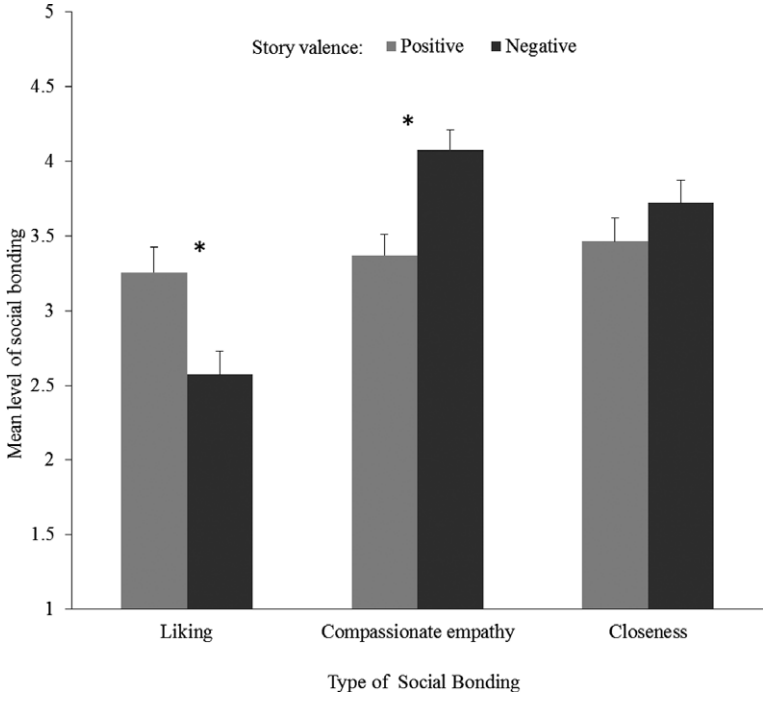

Fig. 3. Differences in social bonding between the positive and negative story conditions. Significant differences between story valence conditions are denoted with an asterisk (*).

compassionate empathy), including story engagement as a covariate in analyses did not change results: liking, $F(1, 52) = 13.77$, $p = .000$, and compassionate empathy, $F(1, 52) = 11.21$, $p = .001$. This was perhaps because there were not differences in story engagement by valence. In fact, both effects were large (liking: $\omega_p^2 = 0.19$; compassionate empathy $\omega_p^2 = 0.16$). Whether the participant had experienced something similar to the stranger did not affect the univariate effect for liking, $F(1, 25) = 11.62$, $p = .002$, $\omega_p^2 = 0.28$, despite the smaller sample size. This was probably because experiencing something similar to the stranger was unrelated to liking but was related to compassionate empathy. This may partially explain why the compassionate empathy effect became non-significant when experiencing something similar to the stranger was included as a covariate, $F(1, 25) = 2.87$ $p = .103$, and why the effect size decreased in magnitude, $\omega_p^2 = 0.06$.

Thus, follow-up mediation analyses were conducted for compassionate empathy using the same model stipulations as the ones described above. Valence was the predictor, gender the covariate, and similar experience to the stranger the mediator. The indirect pathway, however, was not significant, *coeff* = 0.041, *SE* = 0.101 [−0.08, 0.36], though this might be due to the small number of people who reported having a similar experience to the stranger ($n = 31$).

Table 2
Descriptive statistics by type of communication and story valence

	Story Valence					
	Positive			Negative		
Communication Type	*M* (*SE*)	*M*-diff	CI-diff	*M* (*SE*)	*M*-diff	CI-diff
Liking						
In-person	3.674 (0.248)	0.837	0.713	2.737 (0.230)	0.328	0.653
IM	2.837 (0.242)			2.409 (0.222)		
Compassionate empathy						
In-person	3.537 (0.206)	0.332	0.592	4.378 (0.191)	0.597	0.543
IM	3.205 (0.201)			3.781 (0.185)		
Closeness						
In-person	3.569 (0.234)	0.211	0.673	3.935 (0.217)	0.423	0.617
IM	3.358 (0.229)			3.512 (0.210)		

Note. Marginal means reported. Gender is covariate. *M*-diff is difference between the in-person and instant message (IM) conditions for each story valence condition separately, and corresponding CI (CI-diff).

3.2.3. Exploratory analyses: Type of communication by story valence

We had no hypotheses for the interaction, and it was not significant. As this may have been due to lack of power, we explored interaction effects (controlling for gender) post hoc. The pattern of results mostly mirrors the main effects (Table 2). Whether the story was positive or negative, and for all three social bonding outcome measures, the *M*s are higher when the story was received in-person compared to IM. Furthermore, the means for liking are greater when the story was positive compared to negative (regardless of in-person or IM), and the pattern was opposite for compassionate empathy (i.e., greater in negative story condition, regardless of type of communication). The reported *M*-differences and CIs support this interpretation. Thus, despite the potential for being underpowered, there does not appear to be an interaction.

4. Discussion

This is the first study that has examined the theoretical social bonding function of autobiographical stories (Alea & Bluck, 2003) being received via a virtual platform. The aims were to examine differences in liking, empathy, and closeness felt toward a stranger depending on whether the story was received in-person or via IM, and whether the story was positive or negative.

4.1. People liked and empathized with a stranger after receiving an in-person story

Participants liked a stranger more and felt more compassionate empathy toward her after receiving her autobiographical story in person compared to via IM. The latter

finding is in-line with H2 and previous work (Carrier et al., 2015; Holtzman et al., 2017; Powell & Roberts, 2017), as in-person autobiographical stories serve an empathy function (Bluck et al., 2013). However, our results contradicted H1. Existing findings (Derks, Fischer, & Bos, 2008; Jiang et al., 2011) and theory suggest that when people receive a CMC their interpersonal reaction may be hyperpersonal: An extreme impression forms in line with the original feeling but is heightened due to the relative absence of interpersonal cues (Walther, 2011). However, overly personal disclosures that violate appropriateness (Bazarova, 2012) can thwart strangers' bonding online (Baruh & Cemalcılar, 2015). Orben and Dunbar (2017) found passive receivers of highly intimate (compared to low or moderate) fictitious blog posts, felt less close to the blogger. Possibly, autobiographical stories that are engaging and emotional (Baron & Bluck, 2011), as in this study, cross the threshold of acceptable intimacy between strangers for an initial CMC.

It seems that the receiver's perceptions of the communication and of the sharer (Sprecher et al., 2013), not only the fixed properties of a platform (e.g., in-person, IM), also governs the extent to which social bonds are formed in CMC (Walther, 2011). This is consistent with our and other results (Beike et al., 2016; Orben & Dunbar, 2017). Story engagement, or to what extent participants relived the stranger's experience, could hear and see it in their mind, and felt their emotions, completely mediated the pathway between type of communication (in-person, IM) and how much participants liked the stranger and felt empathy for her.

4.2. Positive stories foster liking and negative stories elicit empathy for the receiver

H3 was supported and is consistent with the literature: participants who received a positive story from a stranger liked her more than when they received a negative story. The positivity bias exhibited when remembering one's own autobiographical experiences (Walker, Skowronski, & Thompson, 2003) seems to exist when sharing experiences with others in-person (Alea, 2010) or via CMC (Utz, 2015). Positivity in self-disclosures seems beneficial for developing relationships, irrespective of communication platform (Gable & Reis, 2010; Hancock et al., 2007).

Negative experiences also have a place in interpersonal relationships. We found, for example, consistent with H4, that receiving negative autobiographical stories resulted in more empathy toward a stranger than positive stories (regardless of platform). Negative autobiographical experiences elicit empathy from others (Bluck et al., 2013; Powell & Roberts, 2017). This is partially accounted for by the sharer and the receiver having had similar life experiences, again emphasizing the social-bonding function of autobiographical memory.

4.3. Limitations and directions

This initial investigation has limitations. The sample size was sufficient for main effects but not large, limiting examination of gender as a moderator and the interaction effect. The measure of closeness was only two items. This may have been why there

were no group differences in closeness, although there were some effects: being more engaged with the story and having a more similar experience to the stranger was associated with greater closeness. These issues need to be remedied to produce replicable findings. In addition, the study focused only on receiving the story: Participants were passive and the story was received in a group setting. It was not reciprocal, dyadic communication, diminishing ecological validity, nor did we measure any reactions from the story sharer. However, one-sided story sharing (Alea & Bluck, 2007) and receiving (Bluck et al., 2013) is a well-used methodology, and passive "listening" also occurs online (Burke & Kraut, 2014). The group format allowed for greater experimental control, and although not typical of the research in these areas, examining CMC from only the receivers' point-of-view seems like a future direction in the field (Rains & Brunner, 2015).

Future work needs to continue to tease apart the nuances involved in the diverse ways (in-person, CMC; dyadic, group; sharer, receiver's perspective) that people communicate today that may affect interpersonal relationships. Finding a mate (Rosen, Cheever, Cummings, & Felt, 2008) and receiving support during times of mourning (Feigelman, Gorman, Beal, & Jordan, 2008), for example, are just some of the ways that CMC has infiltrated our interpersonal lives. Moving forward, it may be prudent to consider that detailed, personal autobiographical stories, like those examined in the current work, may differ from general and brief self-informational disclosures in the extent to which they are used to form social bonds in the personal compared to virtual world.

4.4. Conclusion

As they go through their days, individuals hear and receive stories about others' lives in in-person conversation and through IM. Our findings show that in-person communication results in greater engagement, leading the receiver to both like and have more empathy for the person sharing. Other's stories can be positive or negative and this also affects the receiver: While positive stories lead to greater liking, negative stories draw more empathy from the listener. This research contributes to the ongoing conversation about the functions, adaptive socioemotional benefits, of autobiographical stories. How we tell and what we tell others may shape their views of us and their ability to respond prosocially.

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Notes

1. There were originally 62 participants, but two participants reported knowing the confederate and were dropped.

2. We did not attempt to counterbalance gender across conditions. However, analyses revealed no gender differences in any study variables, *t*s < 1.000.
3. 95% lower level and upper level CIs, respectively, are reported in brackets throughout. Hedges' *g* (reported as *g* throughout) is used as an unbiased effect size estimator to avoid overestimation and thus to be more conservative (Larkens, 2014): small = 0.20, medium = 0.50, large = 0.80.
4. For MANOVAS Wilk's lambda (Λ) is used as a measure of effect size (i.e., 1-partial eta squared; Tabachnick & Fidell, 2013): % of variance in the dependent variables that is not explained by the model.
5. Post hoc power analyses revealed, as expected, that the main effects for type of communication (1-β = 0.72) and valence (1-β = 0.90) were not underpowered, but the interaction effect was underpowered (1-β = 0.22).
6. Partial omega squared (ω_p^2) is used as an effect size assessment for ANOVAS throughout because it is unbiased and thus more conservative, and also allows for better comparisons with future studies, interpreted as small = 0.01, medium = 0.06, large = 0.14.

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