

Sexy and I know it: Attachment orientation and romantic confidence on dating apps

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Romantic confidence, or one's perception of their own romantic desirability, is central to relationship initiation (Özabacı & Eryılmaz, 2015). When attracting a potential partner, a person's displays of confidence is appealing because it can be indicative of important desirable qualities, such as intelligence or success. Romantic confidence can also influence mating aspirations (Kavanagh et al., 2010); for example, those who perceive themselves to have a low mate value are likely to avoid pursuing mates whom they perceive to be "out of their league." Additionally, romantic confidence is negatively related to depression and social anxiety (LaGreca & Lopez, 1998).

Attachment theory (Bowlby, 1969) is likely to explain some variation in people's romantic confidence and romantic relationship behaviors. Though previous studies have found that people's romantic self-concept may vary as a function of attachment orientation (e.g., Slotter & Gardner, 2012), none have examined these variables in an online dating context. Yet, online dating has become the most popular way to meet for couples in the United States (Rosenfeld et al., 2019; Wu & Ward, 2018). In general, online dating allows users to communicate with others in a way that minimizes the threat of direct rejection (Smith & Anderson, 2016). For instance, many dating apps contain a feature that allows users to identify only those who have expressed mutual interest in the form of a "match," which likely explains why individuals high in rejection sensitivity are more likely to use online dating platforms (Hance et al., 2018). Despite these features, the romantic rejection that is experienced in the online dating environment may still be associated with negative emotional and physiological outcomes (van der Veen et al., 2019). In a qualitative study, dating app users noted the importance of physical attractiveness and perceived similarity in assessing other users' profiles (Ward, 2017). Because attractiveness quickly becomes a central focus of the swiping process, it is not surprising that mobile dating app use is related to users' self-esteem (Strubel & Petrie, 2017).

Additionally, although some researchers refer to online dating as *relationship shopping* (Heino et al., 2010), only slightly more than half of dating app users succeed in meeting face to face with other users, and only a subsample of those actually find a romantic relationship on those apps (Timmermans & Courtois, 2018). As such, users often report on their difficulty finding matches or satisfying face-to-face en-

counters (Hobbs et al., 2017; Lefebvre, 2017). By examining romantic attachment in an online dating context, the current study explores the associations between attachment orientation and dating app users' romantic confidence, perceived partner availability, and relationship initiation behaviors on dating apps.

Attachment Orientation and Dating Apps

Attachment theory explains human bonding and attachment behaviors, whereby the type of care and comfort provided to an infant by their primary caregivers influences whether the infant comes to expect that care in the future (Bowlby, 1969; 1973). These responses, which characterize one's attachment dynamics, are likely to shape a person's expectations of current and potential romantic and sexual partners, and to influence the cognitive appraisals of interpersonal interactions. Researchers have conceptualized attachment as being measured along two continuous dimensions: anxiety and avoidance (Mikulincer & Shaver, 2007).

Individuals with an anxious attachment orientation exhibit a distrust for others, which is principally rooted in a fear of abandonment (Fraley & Shaver, 2000). They are generally concerned about their partners' availability and thus often seek reassurance about the stability of the relationship (Cozolino, 2014; Eastwick & Finkel, 2008). Though the association between attachment orientation and dating app use has received little attention, the tendency to seek reassurance from current or prospective partners is likely to be present in the context of online dating. For instance, previous research has found that attachment anxiety positively predicted people's reported likelihood of using dating apps (Chin et al., 2019) and using dating apps to find a romantic relationship (Timmermans & Alexopoulos, 2020). This likely speaks to anxious individuals' willingness to seek out potential partners and initiate relationships online, while managing their anticipation of rejection and abandonment. Because anxiously-attached individuals are more eager to commit to others (Morgan & Shaver, 1999), they may also view dating apps as a means of increasing their odds of securing a mate.

Lefebvre (2017) noted that online daters may use different swiping strategies, such as the *shotgun approach*, in which users swipe right on a large number of profiles to increase their potential for and variety in matches. In contrast, some reported being more selective in the swiping process to avoid matching with less desirable or lower quality partners. Thus, specific dating app behaviors may reflect an individual's working models of attachment, whereby those with higher levels of attachment anxiety who seek love and support from others are more likely to express interest in others by "swiping right" on candidates' profiles and initiate conversations with other users once a match is formed.

H1: Dating app users' attachment anxiety will be positively related to their perceived number of (a) right swipes and (b) self-initiated conversations.

Anxiously-attached individuals' relationship initiation strategies on dating apps may also be a reflection of their perceptions of the self in a romantic context. In previous studies, romantic confidence has been operationalized as the extent to which someone believes others will express romantic interest in them, for ex-

ample by joining them for a drink at a bar or by agreeing to a date (e.g., Aubrey & Taylor, 2009). Evidence suggests that people with higher levels of anxious attachment may exhibit decreased levels of romantic confidence (in other words, they may perceive themselves to be romantically undesirable). Anxious attachment is characterized by rejection sensitivity and perceiving a lack of desired closeness with others (Fraley & Shaver, 2000). In addition, anxious attachment is negatively related to self-esteem among adolescents (Lee & Hankin, 2009) and self-perceived attractiveness among adults (Schindler et al., 2010). Because of their negative view of the self, anxiously-attached individuals often seek reassurance from partners as they experience greater relationship uncertainty (Evraire et al., 2014). Although dating app users are presented with opportunities to engage with potential partners, more time spent on dating apps potentially translates to many unreciprocated matches or messages. This may be particularly salient to anxiously-attached individuals, who are frequently concerned about being abandoned and may internalize unreciprocated initiation attempts as personal rejection (Tidwell et al., 1996). Thus, we predict the following:

H2: Dating app users' attachment anxiety will be negatively related to their (a) romantic confidence on dating apps and (b) their perceived partner availability.

Individuals with an avoidant attachment orientation tend to maintain an emotional distance from others, and are generally uncomfortable with developing intimate relationships (Mikulincer & Shaver, 2003). Like those who exhibit anxious attachment, avoidantly-attached individuals distrust others; however, this distrust results in high levels of autonomy and low levels of disclosure and support-seeking. Because of an aversion to seek out and develop intimate relationships with others, attachment avoidance has been negatively related to reported likelihood of using dating apps (Chin et al., 2019). The rate of relationship formation that occurs via computer-mediated communication may also be of little interest to avoidantly-attached individuals. For example, the hyperpersonal communication model (Walther, 1996) assumes that people who communicate and develop relationships online may become more intimate than those that developed face to face. The paucity of communication cues allows for greater levels of self-disclosure (Joinson, 2001) and increased ability to manage one's self-presentation (McKenna & Bargh, 2000). Thus, relationships may develop more rapidly in an online context. This perhaps explains why avoidantly-attached individuals have expressed more negative views about communicating via Facebook or texting (Morey et al., 2013; Oldmeadow et al., 2013). Examining the association between dating app motives and avoidant attachment, researchers found that avoidant attachment was only positively linked to using a dating app while travelling (Timmermans & Alexopoulos, 2020). This is likely because using a dating app while travelling does not require prolonged intimacy. It is possible that, in the event that those with an avoidant attachment download and casually use dating apps, their participation reflects a low level of engagement and investment of time and effort in seeking a mate. Thus:

H3: Dating app users' attachment avoidance will be negatively related to their perceived number of (a) right swipes and (b) self-initiated conversations.

Though considered a type of insecure attachment, avoidantly-attached individuals tend to exhibit confidence and explicit self-esteem similar to securely-attached individuals (Bartholomew & Horowitz, 1991; Brennan & Morris, 1997). They possess a positive working model of the self, but a negative working model of others. To compensate for their negative views of others, they ground their self-worth in their own abilities and accomplishments (Brennan & Morris, 1997). Thus, although avoidantly-attached individuals prefer to maintain emotional distance from others, they may engage in positive self-evaluations and acknowledge the abundance of potential partners available to them.

H4: Dating app users' attachment avoidance will be positively related to their (a) romantic confidence on dating apps and (b) their perceived partner availability.

Method

Sample and Procedure

Data for this study were collected as part of another project examining dating app users' experiences (Alexopoulos & Timmermans, 2020). We recruited undergraduate participants from an east coast university ($n = 309$ or 55.0% of the recruited sample), and a non-student sample from Amazon Mechanical Turk ($n = 253$ or 45% of the recruited sample) to complete an online survey. Because we were only interested in people who were currently using dating apps, participants responded to a filter question indicating whether they were using a dating app at the moment of inquiry. Those who were not using a dating app ($n = 167$) were omitted from our analyses. The final sample of dating app users included 395 participants (55.9% male, $M_{\text{age}} = 26.76$, $SD = 8.33$) who completed the survey in full. This included 176 students (44.6% of the final sample, 38.0% male, $M_{\text{age}} = 21.91$, $SD = 3.43$), and 219 MTurk participants (55.4% of the final sample, 70.3% male, $M_{\text{age}} = 30.62$, $SD = 9.04$). Because participants recruited from MTurk tend to be older and more demographically diverse compared to college student populations (Hitlin, 2016; Huff & Tingley, 2015), we conducted a series of t -tests to determine whether our college sample and MTurk sample differed for our variables listed below. The two subsamples did not significantly differ for anxious attachment, $t(393) = 0.011$, $p = .991$, avoidant attachment, $t(393) = -0.420$, $p = .675$, perceived partner availability, $t(393) = -1.476$, $p = .141$, or romantic confidence, $t(393) = -0.759$, $p = .448$. They also did not significantly differ in their perceptions of their dating app behaviors, including number of likes/right swipes, $t(393) = -1.848$, $p = .065$, number of initiated conversations, $t(393) = -0.958$, $p = .339$, and number of matches, $t(393) = -0.907$, $p = .365$.

Participants reported to be heterosexual ($n = 318$, 80.5%), followed by bisexual ($n = 60$, 15.2%), and gay/lesbian ($n = 17$, 4.3%). They indicated their relationship status as single ($n = 144$, 36.5%), followed by casually dating ($n = 91$, 23%), seriously

dating ($n = 73$, 18.5%), married ($n = 56$, 14.2%), cohabiting ($n = 16$, 4.1%), engaged ($n = 11$, 2.8%), and divorced/separated ($n = 4$, 1.0%).

Measures

Attachment Orientation

Participants completed the 12-item short form of the Experiences in Close Relationships Scale (Wei et al., 2007). After being asked to think about how they normally operate in relationships, participants indicated on a scale of 1 (strongly disagree) to 7 (strongly agree) the extent to which they agreed with statements addressing their attachment anxiety (e.g., "I need a lot of reassurance that I am loved by my partner") ($M = 4.04$, $SD = 1.20$, $\alpha = .79$) and attachment avoidance (e.g., "I want to get close to my partner, but I keep pulling back") ($M = 3.35$, $SD = 1.02$, $\alpha = .69$).

Perceived Partner Availability

A modified version of James and colleagues' (1996) single-item measure of perceived partner availability was used. Participants were asked to think about their current relationship or their most recent romantic relationship. Then, they indicated on a scale of 1 (strongly disagree) to 7 (strongly agree) the extent to which they agreed with two statements about their ability to find a new partner, for example, "Though it might take a while, I could find another desirable partner if I wanted to or needed to." A second item was added to increase reliability: "I believe there are many people who would be happy with me as their partner" ($M = 5.20$, $SD = 1.34$, $\alpha = .75$).

Romantic Confidence on Dating Apps

Participants' romantic confidence was measured using items similar to those described in a previous study (Aubrey & Taylor, 2009); however, items were modified to match behaviors that would be enacted while using dating apps. Participants were asked to imagine that "later this evening you are using a dating app (for example, reading through others' profiles, searching for potential matches, etc.)." Then, they were asked to read eight statements and indicate the likelihood that other users would express interest in them on a scale ranging from 1 (not at all likely) to 7 (extremely likely). Sample items included, "Other people will be attracted to me on a dating app," and "I will receive many compliments from other people on a dating app" ($M = 4.86$, $SD = .93$, $\alpha = .78$).

Perceived Dating App Behaviors

Participants were asked to indicate how many dating app profiles they "like" or "swipe right on" out of every 10 profiles they see ($M = 3.86$, $SD = 2.38$). They were also asked to indicate how many users they match with out of every 10 profiles they swipe right on ($M = 3.62$, $SD = 2.39$), and how many conversations they start for every 10 users they match with ($M = 2.91$, $SD = 2.54$).

Results

Variable correlations are reported in Table 1. To test H1-4, we conducted hierarchical regression analyses. We controlled for participants' age, sex, sexual orientation, and relationship status. Standardized beta coefficients are reported in Table 2.

Table 1. *Variable Correlations, N = 395.*

	1	2	3	4	5	6	7
1. Attachment anxiety	-						
2. Attachment avoidance	.278***	-					
3. # right swipes	.138**	.049	-				
4. # initiated conversations	.249***	.149**	.068	-			
5. Romantic confidence	.203***	-.165**	-.080	.270***	-		
6. Perceived partner availability	.209***	-.139**	-.041	.156**	.505***	-	
7. # matches	.218***	.025	.248***	.554***	.295***	.158**	-

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Regression Analyses Summary for Attachment Orientation Predicting Romantic Confidence, Perceived Partner Availability, and Dating App Behaviors.

	# Right Swipes	# Self-Initiated Conversations	Romantic Confidence	Perceived Partner Availability
	β	β	β	β
Block 1				
Age	-.03	-.001	.06	.11
Sex	-.25**	.08	.11	-.03
Sexual Orientation	-.06	.13*	.10	.10
Relationship Status	.06	.14**	.04	-.03
Block 2				
Attachment Anxiety	.15**	.17*	.23**	.25**
Attachment Avoidance	-.02	.10	-.22**	-.21**
Adjusted R^2	.07	.10	.11	.09
F for change in R^2	5.74**	8.14**	8.81**	7.50**

Note: Standardized betas reported

Sex (male=0, female=1), sexual orientation (0 = heterosexual and 1 = non-heterosexual (lesbian, gay, and bisexual)), relationship status (0 = single and 1 = in committed relationship)
* $p < .05/4 = 0.0125$ (Bonferroni correction), ** $p < .01$

As expected, attachment anxiety positively predicted users' number of right swipes and self-initiated conversations, thereby providing support for H1. Contrary to our expectations for H2, dating app users' attachment anxiety positive-

ly predicted romantic confidence on dating apps and their perceived number of available partners.

Attachment avoidance was not significantly related to the number of right swipes or self-initiated conversations, although it suggested a positive trend for the latter. Thus, H3 was not supported. Contrary to our expectations for H4, dating app users' attachment avoidance negatively predicted romantic confidence on dating apps and perceived number of available partners.

The unexpected findings for H2 and H4 prompted us to examine whether participants' experiences with other users explained their positive vs. negative self-evaluations. We ran post-hoc regression analyses including participants' perceived number of matches as an additional control variable. Attachment anxiety and avoidance still significantly predicted romantic confidence and perceived partner availability (see Table 3).

Table 3. Regression Analyses Summary for Attachment Orientation Predicting Romantic Confidence and Perceived Partner Availability Controlling for Perceived Number of Matches.

	Romantic Confidence	Perceived Partner Availability
	β	β
Block 1		
Age	.07	.11*
Sex	.11*	-.03
Sexual Orientation	.09	.08
Relationship Status	.02	-.05
Perceived # Matches	.23**	.09
Block 2		
Attachment Anxiety	.23**	.30**
Attachment Avoidance	-.23**	-.23**
Adjusted R^2	.18	.13
F for change in R^2	13.06**	9.48**

Note: Standardized betas reported

Sex (male=0, female=1), sexual orientation (0 = heterosexual and 1 = non-heterosexual (lesbian, gay, and bisexual)), relationship status (0 = single and 1 = in committed relationship)
* $p < .05/2 = 0.025$ (Bonferroni correction), ** $p < .01$

Discussion

This study examined the extent to which dating app users' attachment orientation predicted their perceptions of themselves and their partner selection and initiation behaviors. Though attachment theory provides a useful framework for understanding people's relationship initiation strategies, previous research on attachment in the context of in-person interactions and online behaviors outside of the realm of dating apps only partially explained our findings. Rather, it seems that dating apps offer a unique opportunity to explore how insecurely-attached

individuals select and use technology to fulfill their relational needs. For example, contrary to our expectations, anxious attachment was positively associated with romantic confidence on dating apps. Given that anxiously-attached individuals are more likely to rely on external sources to determine their self-worth, they may also turn to mobile dating platforms in search of validation from others. Previous research has shown that using dating apps to boost one's ego is a common dating app motive (Courtois & Timmermans, 2017), and even more so for anxiously-attached individuals (Timmermans & Alexopoulos, 2020). This is also supported by our findings, given that dating app users' anxious attachment was positively related to their perceived partner availability. The abundance of potential partners unique to the dating app marketplace may explain why they are in favor of engaging with these platforms (Chin et al., 2019). Additionally, as dating apps allow users to pursue numerous relationship initiation attempts simultaneously (Lefebvre, 2017), the continued access to a larger dating pool may serve as a buffer from less satisfying conversations or even rejections.

However, unsuccessful dating app experiences may yield the opposite outcome. For example, in an experimental study, anxiously-attached individuals reported more negative self-evaluations after receiving negative feedback from a romantic partner (Carnelley et al., 2007). To account for this possibility, findings revealed that the positive association between anxious attachment and romantic confidence on dating apps persisted even after controlling for users' perceived number of matches, which suggests that certain features of the dating app experience provide comfort and validation to anxiously-attached users above and beyond the targeted attention from other users. Although attachment theory assumes that anxiously-attached individuals tend to have a negative view of the self and a positive view of others, mere exposure to the dating app environment may be enough to elicit an increase in their self-perceived mate value. This may be attributed to the plethora of dating possibilities, or the sense of control and optimism that comes with selective self-presentation. Users have the ability to present an authentic yet ideal version of themselves, maximizing their potential for perceived desirability (Ward, 2016). Thus, these features may mitigate anxiously-attached individuals' tendencies to view themselves as undesirable.

Although some suggest that dating apps can be beneficial for people struggling with social anxieties (McKenna et al., 2002), avoidant attachment was negatively associated with romantic confidence and perceived partner availability. We offer two potential explanations for this. First, avoidant individuals tend to employ deactivating strategies to cope with attachment, which involve asserting their independence from others in an effort to avoid relying on a potentially-absent attachment figure (Mikulincer, 1998). These deactivating strategies serve to desensitize avoidant individuals to their social environments (Srivastava & Beer, 2005). Because avoidantly-attached individuals tend to be less open to the possibility of forming close relationships, they react more negatively to others' responsiveness (Spielmann et al., 2013) and dislike others who exhibit flattery and qualities associated with anxious attachment (Brumbaugh et al., 2014). This suggests that in the dating app environment, avoidant individuals may underestimate the number of potential partners available to them. Second, their lower ratings of romantic confidence may be attributed to their infrequent use of dating apps (Chin et al., 2019),

wherein they would not experience the potential benefits of dating app use (e.g., access to relationship candidates, validation from others). Thus, although attachment theory posits that avoidant attachment is characterized by a positive view of the self, this positive view may not translate to avoidantly-attached individuals' perceptions of others' romantic interest in them.

A second goal of this study was to examine whether attachment orientation predicted selection and initiation behaviors on dating apps. Certain behaviors such as "liking"/swiping right on someone's profile or initiating a conversation with a matched user likely reflect a user's approach to developing sexual and romantic relationships online. For example, a person's number of right swipes may serve as a behavioral measure for their selectivity, which refers to the strictness with which people choose romantic or sexual partners. Some individuals exhibit lower levels of "choosiness" when they espouse negative self-evaluations or negative assessments of their mate-getting abilities (Buss & Shackelford, 2008). This is consistent with our finding that avoidant attachment was not significantly related to swiping or conversation initiating behaviors. The avoidance dimension reflects one's behavioral strategies specific to regulating attachment-related needs (Fraley & Shaver, 2000), and thus is not predictive of selection behaviors that promote developing relational attachments.

In contrast, anxious attachment positively predicted dating app users' perceived number of right swipes and self-initiated conversations with other users. This suggests a decreased level of selectivity and an increased willingness to reach out to other users. Anxious attachment has been found to be predictive of a fear of being single, which in turn is linked to lower standards when seeking a romantic partner (Spielmann et al., 2013; Spielmann et al., 2020) and thus could partly explain why those with higher scores on anxious attachment tend to be less selective on dating apps. Because anxious attachment is characterized by a dependence on others and a compulsion to seek proximity to others, and these qualities translate to their mobile phone use (Konok et al., 2016), it seems that their positive self-evaluations do not prohibit them from engaging in frequent attempts to satisfy their socioemotional needs. This is consistent with other studies on new media and attachment, in which anxious attachment is positively associated with reaching out to romantic and sexual interests, even while in an exclusive, committed relationship (Drouin et al., 2014).

Limitations

The current study is not without limitations. First, the cross-sectional design does not allow for determining the causal order of attachment orientation and dating app behaviors. Because attachment orientation is generally stable over time (see Fraley, 2002), it is unlikely that dating app users' behaviors and experiences influence their levels of avoidance and anxiety. However, future research should employ experimental and longitudinal methods to determine precisely which affordances of dating apps are predictive of users' self-evaluations. Second, memory bias may have prevented participants from accurately reporting their average number of right swipes, their average number of matches, and their average number of self-initiated conversations. Future research could employ an experience sampling approach as has been done by Courtois and Timmermans (2018) to get a more accurate measure

of dating app behavior. Third, the items measuring attachment avoidance yielded a relatively low level of reliability, which suggests that these findings related to avoidance and dating app behaviors should be interpreted with caution.

Finally, we want to note the variety of dating app features across different platforms. Accounting for all of them at the same time may not capture nuances in experiencing rejection, which is an important concept when studying the association between dating app use and anxious attachment. For instance, for the popular dating app Tinder, a match is required for users to be able to start a conversation with each other (David & Cambre, 2016). On Grindr, a popular dating app targeted to gay, bisexual, trans, and queer individuals, users can contact any other user within a certain radius. On more traditional dating websites, co-presence (i.e., both users have an account on this particular platform) is sufficient to connect and contact other users (MacKee, 2016). Because the swiping process on Tinder remains anonymous until both users swipe right and match with each other, users may be more likely to experience romantic rejection in the form of messages that remain unanswered on platforms that do not require matching such as Grindr and more traditional online dating websites (Tong & Walther, 2011). By accounting for these differences, future research could explore whether the association between anxious attachment and romantic confidence differs depending on the online dating platform used. Nevertheless, the current study provided insight on the link between attachment orientation and dating app users' perceptions of themselves and their partner selection and initiation behaviors.

References

- Alexopoulos, C., Timmermans, E., & McNallie, J. (2020). Swiping more, committing less: Unraveling the links among dating app use, dating app success, and intention to commit infidelity. *Computers in Human Behavior, 102*, 172-180. doi:10.1016/j.chb.2019.08.009
- Aubrey, J. S., & Taylor, L. D. (2009). The role of lad magazines in priming men's chronic and temporary appearance-related schemata: An investigation of longitudinal and experimental findings. *Human Communication Research, 35*, 28-58. doi:10.1111/j.1468-2958.2008.01337.x
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226-244. doi:10.1037/0022-3514.61.2.226
- Buss, D. M., & Shackelford, T. K. (2008). Attractive women want it all: Good genes, economic investment, parenting proclivities, and emotional commitment. *Evolutionary Psychology, 6*, 134-146. doi:10.1177/147470490800600116
- Brennan, K. A., & Morris, K. A. (1997). Attachment styles, self-esteem, and patterns of seeking feedback from romantic partners. *Personality and Social Psychology Bulletin, 23*, 23-31. doi:10.1177/0146167297231003
- Brumbaugh, C. C., Baren, A., & Agishtein, P. (2014). Attraction to attachment insecurity: Flattery, appearance, and status's role in mate preferences. *Personal Relationships, 21*, 288-308. doi:10.1111/pere.12032
- Chin, K., Edelstein, R. S., & Vernon, P. A. (2019). Attached to dating apps: Attachment orientations and preferences for dating apps. *Mobile Media & Communication, 7*, 41-59. doi:10.1177/2050157918770696

- Courtois, C., & Timmermans, E. (2018). Cracking the Tinder code: An experience sampling approach to the dynamics and impact of platform governing algorithms. *Journal of Computer-Mediated Communication*, 23, 1-16. doi:10.1093/jcmc/zmx001
- Cozolino, L. (2014). *The neuroscience of human relationships: Attachment and the developing social brain* (2nd ed.). New York, NY: W.W. Norton & Co.
- David, G., & Cambre, C. (2016). Screened intimacies: Tinder and the swipe logic. *Social Media + Society* 2, 1–11. doi:10.1177/2056305116641976.
- Drouin, M., Miller, D. A., & Dibble, J. L. (2014). Ignore your partners' current Facebook friends; beware the ones they add! *Computers in Human Behavior*, 35, 483-488. doi:10.1016/j.chb.2014.02.032
- Eastwick, P. W., & Finkel, E. J. (2008). The attachment system in fledgling relationships: An activating role for attachment anxiety. *Journal of Personality and Social Psychology*, 95, 628–647. doi:10.1037/0022-3514.95.3.628
- Evraire, L. E., Ludmer, J. A., & Dozois, D. J. (2014). The influence of priming attachment styles on excessive reassurance seeking and negative feedback seeking in depression. *Journal of Social and Clinical Psychology*, 33, 295-318. doi:10.1521/jscp.2014.33.4.295
- Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, 6, 123-151. doi:10.1207/S15327957PSPR0602_03
- Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology*, 4, 132-154. doi:10.1037/1089-2680.4.2.132
- Hance, M. A., Blackhart, G., & Dew, M. (2018). Free to be me: The relationship between the true self, rejection sensitivity, and use of online dating sites. *Journal of Social Psychology*, 158, 421-429. doi:10.1080/00224545.2017.1389684
- Heino, R. D., Ellison, N. B., & Gibbs, J. L. (2010). Relationshopping: Investigating the market metaphor in online dating. *Journal of Social and Personal Relationships*, 27, 427–447. doi:10.1177/0265407510361614
- Hitlin, P. (2016). Research in the crowdsourcing age: A case study. *Pew Research Center*. Retrieved from: <http://www.pewinternet.org/2016/07/11/research-in-the-crowdsourcing-age-a-case-study/>
- Hobbs, M., Owen, S., & Gerber, L. (2017). Liquid love? Dating apps, sex, relationships and the digital transformation of intimacy. *Journal of Sociology*, 53, 271–284. doi:10.1177/1440783316662718
- Huff, C., & Tingley, D. (2015). "Who are these people?" Evaluating the demographic characteristics and political preferences of MTurk survey respondents. *Research & Politics*, 2, 1-12. doi:10.1177/2053168015604648
- Joinson, A. N. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology*, 31, 177-192. doi:10.1002/ejsp.36
- Konok, V., Gígler, D., Bereczky, B. M., & Miklósi, Á. (2016). Humans' attachment to their mobile phones and its relationship with interpersonal attachment style. *Computers in Human Behavior*, 61, 537-547. doi:10.1016/j.chb.2016.03.062
- MacKee, F. (2016). Social media in gay London: Tinder as an alternative to hook-up apps. *Social Media + Society*, 2, 1–10. doi:10.1177/2056305116662186

- McKenna, K. Y., & Bargh, J. A. (2000). Plan 9 from cyberspace: The implications of the internet for personality and social psychology. *Personality and Social Psychology Review*, 5, 57-75. doi:10.1207/S15327957PSPR0401_6
- McKenna, K. Y., Green, A. S., & Gleason, M. E. (2002). Relationship formation on the Internet: What's the big attraction? *Journal of Social Issues*, 58, 9-31. doi:10.1111/1540-4560.00246
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. Guilford Press.
- Rosenfeld, M. J., Thomas, R. J., & Hausen, S. (2019). Disintermediating your friends: How online dating in the United States displaces other ways of meeting. *Proceedings of the National Academy of Sciences*, 116, 17753-17758. doi:10.1073/pnas.1908630116
- Schindler, I., Fagundes, C. P., & Murdock, K. W. (2010). Predictors of romantic relationship formation: Attachment style, prior relationships, and dating goals. *Personal Relationships*, 17, 97-105. doi:10.1111/j.1475-6811.2010.01255.x
- Slotter, E. B., & Gardner, W. L. (2012). How needing you changes me: The influence of attachment anxiety on self-concept malleability in romantic relationships. *Self and Identity*, 11, 386-408. doi:10.1080/15298868.2011.591538
- Smith, A., & Anderson, M. (2016, February 29). 5 facts about online dating. *Pew Research Center*. Retrieved from: <http://www.pewresearch.org/fact-tank/2016/02/29/5-facts-about-online-dating/>
- Spielmann, S. S., MacDonald, G., Maxwell, J. A., Joel, S., Peragine, D., Muise, A., & Impett, E. A. (2013). Settling for less out of fear of being single. *Journal of Personality and Social Psychology*, 105, 1049-1073. doi:10.1037/a0034628
- Spielmann, S. S., Maxwell, J. A., MacDonald, G., & Baratta, P. L. (2013). Don't get your hopes up: Avoidantly attached individuals perceive lower social reward when there is potential for intimacy. *Personality and Social Psychology Bulletin*, 39, 219-236. doi:10.1177/0146167212472541
- Spielmann, S. S., Maxwell, J. A., MacDonald, G., Peragine, D., & Impett, E. A. (2020). The predictive effects of fear of being single on physical attractiveness and less selective partner selection strategies. *Journal of Social and Personal Relationships*, 37, 100-123. doi:10.1177/0265407519856701
- Srivastava, S., & Beer, J. S. (2005). How self-evaluations relate to being liked by others: Integrating sociometer and attachment perspectives. *Journal of Personality and Social Psychology*, 89, 966-977. doi:10.1037/0022-3514.89.6.966
- Strubel, J., & Petrie, T. A. (2017). Love me Tinder: Body image and psychosocial functioning among men and women. *Body Image*, 21, 34-38. doi:10.1016/j.bodyim.2017.02.006
- Tidwell, M. C. O., Reis, H. T., & Shaver, P. R. (1996). Attachment, attractiveness, and social interaction: A diary study. *Journal of Personality and Social Psychology*, 71, 729-745. doi:10.1037/0022-3514.71.4.729
- Timmermans, E., & Alexopoulos, C. (2020). Anxiously searching for love (among other things): Attachment orientation and mobile dating application users' motives and outcomes. *Cyberpsychology, Behavior, and Social Networking*, 23, 447-452. doi:10.1089/cyber.2019.0542

- Timmermans, E., & De Caluwé, E. (2017). Development and validation of the Tinder Motives Scale (TMS). *Computers in Human Behavior, 70*, 341-350. doi:10.1016/j.chb.2017.01.028
- Tom Tong, S., & Walther, J. B. (2011). Just say “no thanks”: Romantic rejection in computer-mediated communication. *Journal of Social and Personal Relationships, 28*, 488-506. doi:10.1177/0265407510384895
- van der Veen, F. M., Burdzina, A., & Langeslag, S. J. E. (2019). Don't you want me, baby? Cardiac and electrocortical concomitants of romantic interest and rejection. *Biological Psychology, 146*, 107707. doi:10.1016/j.biopsycho.2019.05.007
- Ward, J. (2016). Swiping, matching, chatting: Self-presentation and self-disclosure on mobile dating apps. *Human IT: Journal for Information Technology Studies as a Human Science, 13*, 81-95.
- Ward, J. (2017). What are you doing on Tinder? Impression management on a matchmaking mobile app. *Information, Communication & Society, 20*, 1644-1659. doi:10.1080/1369118X.2016.1252412
- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*, 3-43. doi:10.1177/009365096023001001
- Wu, S., & Ward, J. (2018). The mediation of gay men's lives: A review on gay dating app studies. *Sociology Compass, 12*, e12560. doi:10.1111/soc4.12560