ACADEMIA

Accelerating the world's research.

Too close for comfort: Attachment insecurity and electronic intrusion in college students’ dating relationships

Paige Safyer, Lauren Reed

Computers in Human Behavior

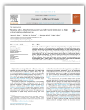
Cite this paper

Downloaded from Academia.edu

Get the citation in MLA, APA, or Chicago styles

Related papers

Download a PDF Pack of the best related papers

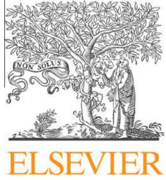


Keeping tabs: Attachment anxiety and electronic intrusion in high school dating relationships
L. Ward, Paige Safyer, Lauren Reed

Liking, Creeping, and Password Sharing: Romantic Jealousy Experience and Expression and Social Net…
Jennifer Bevan

Gender matters: Experiences and consequences of digital dating abuse victimization in adolescent d…
L. Ward, Lauren Reed

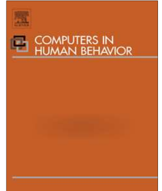
Computers in Human Behavior 50 (2015) 431–438



Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh



Too close for comfort: Attachment insecurity and electronic intrusion in college students' dating relationships

Lauren A. Reed [a,*], Richard M. Tolman [b], Paige Safyer [a]

[a] University of Michigan, School of Social Work, Department of Psychology, United States
[b] University of Michigan, School of Social Work, United States

ARTICLE INFO

Keywords:
New media
Social media
College students
Electronic victimization
Anxiety

ABSTRACT

Social media has become an important context for dating relationships among young adults. This study sought to explore how the ubiquitous and public nature of social media may interact with college students' individual characteristics to contribute to intrusiveness and invasion of privacy in dating relationships. A survey of 307 college students asked participants about their adult romantic attachment style and engagement in "electronic intrusion" (EI). EI included looking at a dating partner's private electronic information without permission, monitoring a partner's whereabouts using social media, and monitoring who a partner talks to or is friends with on social media. There were no gender differences in frequency of perpetrating EI. Results showed that level of attachment anxiety was positively associated with EI for women and men, and level of avoidance was negatively associated with EI for women. Results suggest that attachment style influences intrusive electronic dating behaviors, and social media may increase risk for anxiously attached college students to engage in EI for anxiety relief.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

The pervasive daily use of the Internet and cell phones has made social media an important relational context for youth and young adults (Subrahmanyam & Smahel, 2011; Subrahmanyam, Smahel, & Greenfield, 2006). Social media use among college students in particular is widespread, as a recent study of 437 college students found that 88% of women and 83.4% of men text messaged daily, 73.2% of women and 61.6% of men visited "personal profile sites" every day, and 30.1% of women and 37.2% of males engaged in daily instant messaging (Bennett, Guran, Ramos, & Margolin, 2011). A diary study of 92 college students found that students were using Facebook for about 30 minutes a day, mostly posting content to a wide audience (e.g., updating their Facebook "status"), but more often observing content rather than creating it (Pempek, Yermolayeva, & Calvert, 2009).

Whereas intimacy in close relationships was previously developed primarily through face-to-face communication, social media are now a significant space for relationship initiation, maintenance, and negotiation. This study explores the intersection of college students' developmental context and social media use by examining how the psychological factors that college students might bring to a relationship influence their electronic dating behaviors. Specifically, are levels of romantic relationship attachment anxiety or avoidance associated with likelihood to use social media to intrude into a dating partner's privacy and monitor their behaviors?

1.1. Social media and dating relationships

Social media play an important role in college students' dating interactions and communication. Young people use social media, especially social networking sites, to express romantic feelings for their partner, communicate with partners, and announce things to the public about their relationship (Pascoe, 2011; Subrahmanyam & Smahel, 2011). Social media communication among dating partners differs from face-to-face communication because it moves previously private dating interactions into public spaces, gives dating partners constant access to one another, provides the ability to monitor their partner's activities, and spread information instantly to entire social networks (Draucker & Martsolf, 2010; Melander, 2010).

Social media have had both positive and negative influences on dating relationships, depending on how and with whom one is communicating. Research has shown that the use of cell phones and texting was positively associated with relationship satisfaction and intimacy (Morey, Gentzler, Creasy, Oberhauser, & Westerman,

* Corresponding author.
E-mail address: reedla@umich.edu (L.A. Reed).

http://dx.doi.org/10.1016/j.chb.2015.03.050
0747-5632/© 2015 Elsevier Ltd. All rights reserved.

2013), and that texting helps adolescents feel close to their social networks and romantic partners (Pettigrew, 2009). Instant messaging was also found to be negatively associated with loneliness (van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008). However, a study of 308 college students found that Facebook uniquely contributed to jealousy in romantic relationships (Muise, Christofides, & Desmarais, 2009) and mobile phones were found to be a particular source of conflict for some young couples as they try to navigate being "perpetually connected" by their phones and managing communication rules and boundaries (Duran, Kelly, & Rotaru, 2011).

1.2. The role of gender in social media use

Although both young women and men are charged with navigating digital boundaries in dating relationships, there is preliminary evidence that women and men experience the digital social world differently (e.g., Muscanell, Guadagno, Rice, & Murphy, 2013; Kimbrough, Guadagno, Muscanell, & Dill, 2013). Muscanell and Guadagno (2012) found that motivations for using social media differ by sex; women tend to use these technologies to maintain social relationships, whereas men often use social media to build new relationships and for career purposes. Studies suggest that women are using social media more frequently than men (e.g., Kimbrough et al., 2013).

Research also indicates that women may experience more jealousy and distress from relationship issues on social media. In an experimental study with 266 college students, women reported more jealousy than men when hypothetically imagining viewing pictures of their partner with another person on social media (Muscanell et al., 2013). Another study found that although men spent more time than women looking at their partner's Facebook profiles than women, women reported higher levels of Facebook use and Facebook jealousy (Marshall, Bejanyan, Di Castro, & Lee, 2013). This gendered experienced may be relevant to understanding how individual characteristics influence digital communication in relationships.

1.3. Electronic intrusion in dating relationships

The ease and pervasiveness of sharing and searching for personal information via social media, coupled with the growing social expectation of immediate and constant communication, contribute to a blurring of digital boundaries between dating partners that may put college students at risk for involvement in several types of problematic digital dating behaviors (Bennett et al., 2011; Melander, 2010; Reed, Tolman, & Ward, in press; Zweig, Dank, Yahner, & Lachman, 2013). These behaviors, which have been called "digital dating abuse" and "electronic victimization," can include monitoring someone's activities and whereabouts, controlling who they talk to and are friends with, name-calling, threats and hostility, spreading embarrassing and sexual photos with others, and pressuring for sexual behavior (Bennett et al., 2011; Reed et al., in press). Our previous study found that among a sample of 365 college students, 68.8% reported at least one digital dating abuse victimization behavior in the past year, and 62.6% reported one or more perpetration behavior in the past year (Reed et al., in press). For a comprehensive review of the emerging literature on the role of social media in dating violence among adolescents and young adults, see Stonard, Bowen, Lawrence, and Price (2014).

The most common form of these behaviors are what we term "electronic intrusion" (EI), or the use of social media to intrude into the privacy of a dating partner and monitor their whereabouts and activities (Bennett et al., 2011; Reed et al., in press). One third of college students have reported being stalked through the Internet (Spitzberg & Hoobler, 2002) and 73.5% of a college student sample experienced "electronic intrusiveness" in the past year from a dating partner (Bennett et al., 2011). In a survey study of 306 college students, Reed et al. (in press) found that EI was common: 37.2% of participants monitored a partners' whereabouts and activities, 36.7% monitored who a dating partner talk to and is friends with, and 42.8% looked at a dating partners' private digital information using social media.

While frequent messages and social media monitoring may be welcomed and "normative" behavior for some dating partners, a mismatch of desires for electronic boundaries or monitoring may make one or both partners feel uncomfortable or controlled. Such boundary violations may be part of a constellation of electronic dating behaviors that exert power and control over a dating partner. For some young adults, these intrusive behaviors may be driven by what Muise et al. (2009) discussed as a "feedback loop" of Facebook jealousy that occurs among college students. In this loop, spending time on Facebook increases anxiety about a dating relationship which then leads to more time on Facebook searching for additional information. In this study, we sought to extend these findings to multiple social media platforms, and to investigate whether the likelihood of experiencing this loop and engaging in EI behaviors varies by psychological factors.

The experience of EI may also be influenced by gender. One study found that men reported more electronic intrusiveness from their dating partners in the past year than women (Bennett et al., 2011). As previously discussed, thinking about relationship issues or infidelity on social media has been found to evoke greater jealousy and emotional distress from women than men (Muscanell et al., 2013). If women are experiencing more emotional distress from digital interactions with dating partners, monitoring and "checking up" on a partner could be a means of reassurance or response to this distress. Additionally, Bennett et al. (2011) found that men reported electronic intrusiveness to be the least distressing type of electronic victimization in dating relationships. Therefore, women report perpetrating more electronic intrusion than men, but also find victimization of these behaviors more distressing than men. The current study will address how romantic attachment style might affect the likelihood for women and men to engage in EI in their dating relationships.

1.4. Romantic attachment style and dating relationships

Attachment theory provides a framework for understanding the development of relational patterns across the lifespan (Bowlby, 1969). Based on the qualities of the caregiver-infant relationship, distinct attachment classifications emerge that shape the infant's expectations of close relationships (Ainsworth, Blehar, Waters, & Wall, 1978). Infants categorized as securely attached are thought to have experienced sensitive and responsive caregiving, and learn to expect that their caregivers will comfort them in times of distress. In contrast, insecurely attached infants are raised by inconsistent or unavailable caregivers, and discover that they are unable to rely on their caregivers for comfort (Johnson et al., 2010). These infants develop dysfunctional regulation schemas in an attempt to reduce their anxiety, resulting in anxious or avoidant attachments (Izard & Kobak, 1991).

These varying experiences with primary caregivers during infancy lead to the creation of internal working models, which become the way in which an individual cognitively interprets intimacy throughout the lifespan (Bowlby, 1979, 1980). The internal working model provides a bridge from the relational patterns experienced in infancy to comparable expectations and behaviors present in adult romantic relationships (Hazan & Shaver, 1987). In adulthood, individuals with insecure attachment patterns re-enact their experience of feeling unloved and undervalued with their

romantic partners (Brennan, Clark, & Shaver, 1998). Hazan and Shaver (1987) used self-report questionnaires to measure adult individual's attachment insecurity on two dimensions: anxiety and avoidance. Hazan and Shaver (1987) characterized individuals with an anxious attachment style as quick to fall in love but constantly worrying that their partner does not feel the same. In contrast, in their conceptualization, avoidant adults distanced themselves from potential partners in an attempt to soothe their apprehension about depending on another person.

As posited by Hazan and Shaver (1987), research on adult attachment among college students finds that attachment anxiety or avoidance orientations influence the characteristics and quality of intimate relationships. Insecure attachment styles tend to be associated with negative relationship characteristics and lower satisfaction with relationships (Bartholomew & Horowitz, 1991; Mikulincer & Erev, 1991). College students with an avoidant attachment orientation may attempt to alleviate anxiety about intimacy in relationships by engaging in behaviors that create distance and avoid closeness (Gentzler & Kerns, 2004). For example, those reporting avoidant attachment give romantic partners less emotional support (Collins & Feeney, 2000; Feeney & Collins, 2001). In a study of college-age dating partners that used diary methods, anxiously attached partners escalated conflict more than others, perceived it to be more severe, and were more distressed by relationship conflict (Campbell, Simpson, Boldry, & Kashy, 2005). This body of research indicates that insecure attachment styles are associated with negative relationship characteristics and experiences. However, this research has only begun to consider whether social media communication exacerbates or ameliorates the negative impacts of insecure attachment styles on college students' dating relationships.

1.5. Romantic attachment and social media use

The emerging literature on the role of attachment style in social media use demonstrates how social media use may vary for individuals with secure or insecure attachment styles. Oldmeadow, Quinn, and Kowert (2013) studied 617 adults and found that those with higher levels of attachment anxiety also reported more frequency of Facebook use, were more likely to use Facebook when they were experiencing negative emotions, and worried about the perception of others on Facebook. Individuals reporting high levels of attachment avoidance used Facebook less often and held less positive attitudes about Facebook use than other adults. Oldmeadow et al. (2013) concluded that Facebook use was directly associated with adult attachment orientation and is most often used by anxiously attached individuals when they feel alone. In another study of attachment orientation and social relationships among college students, secure attachment was associated with increased feelings of interpersonal competency, whereas high levels of Facebook use was associated with competency in initiating social relationships among college students (Jenkins-Guarnieri, Wright, & Johnson, 2013). This literature indicates that anxious college students are more likely to use social media than others, and may feel less competent about digital social relationships and comparing themselves to peers.

A few studies have extended this literature to explore the influence of attachment orientation on digital communication in dating relationships specifically, a close intimate relationship in which attachment style may be even more relevant. Morey et al. (2013) assessed cell phone and social networking usage by college students in dating relationships, finding that attachment avoidance was associated with less cell phone use and texting, and was positively associated with email use. The authors proposed that avoidant individuals might prefer certain types of digital communication that require less intimacy than cell phone calling, texting, or face-to-face interaction. This study also found that for those reporting high levels of attachment anxiety, greater frequency of Facebook use was associated with increased feelings of intimacy and closeness. Marshall et al. (2013) demonstrated that attachment anxiety was positively associated with relationship jealousy due to Facebook, and monitoring a partner's Facebook profile among adults. Avoidant attachment was negatively associated with both Facebook jealousy and monitoring a partner's profile. Trust in the relationship partially mediated these associations. Therefore, this literature suggests that social media use within college students' dating relationships varies by attachment style.

1.6. The current study

The current study sought to investigate the association between romantic attachment insecurity (anxiety and avoidance) and perpetration of electronic intrusion (EI) behaviors with dating partners using social media. Does the link between attachment insecurity and negative dating experience extend to the social media relationship context? Are these associations different for women and men? We expanded on the findings of Muise et al. (2009) and Marshall et al. (2013), going beyond these studies' outcomes of emotional jealousy and social media surveillance on Facebook to look more broadly at intrusive digital dating behaviors on all social media platforms. Although much of this early research on social media communication between dating partners focused on a single media platform (e.g., Facebook), platforms are rapidly changing and patterns of use are evolving. Dating partners are using multiple forms of social media to communicate, and because our primary interest is in the association between attachment orientation and intrusive social media behaviors broadly, we chose to be more inclusive than previous studies.

The primary research question for the current study was: Is attachment insecurity (anxiety or avoidance) associated with the perpetration of electronic intrusion behaviors with dating partners among college women and men? We predicted that (1) women would report more EI perpetration than men, (2) attachment anxiety would be positively associated with electronic intrusion (EI) of a dating partner, and (3) attachment avoidance would be negatively associated with EI.

2. Method

2.1. Participants

The overall sample consisted of 365 college students (57% female) enrolled in an undergraduate introductory psychology course at a large university in the Midwestern United States. Participants were given course credit for their participation. Participants ranged in age from 17 to 22 ($M = 18.66$), with the majority being 17–19 years of age (87.9%). The majority of participants identified their ethnicity as White (72.1%), while others identified as Asian (14.8%), Black (6.8%), or Hispanic/Latino(a) (3.8%).

Most participants had dating experience (88.2%). Because we were interested in assessing digital dating behaviors during the past year, our final sample only included those who have had a dating partner during the past year. Participants with no dating experience ever in the past ($N = 45$), no dating partners in the past year ($N = 76$), and those who had dating experience but chose to not fill out the digital dating behaviors measure ($N = 14$) were excluded from analysis, resulting in a final sample of 230 participants. The following analyses were conducted with this smaller sample. Of this sample of 230 participants, 44.8% were currently in a relationship at the time of taking the survey. Nearly half (47.6%) of

participants currently in a dating relationship had been in this relationship for one year or more. Participants also reported the number of dating relationships they have had in the past year. Most participants (81.3%) had only one dating relationship in the past year, while 14.8% reported having had two dating partners in the past year. Therefore, the majority of participants were reporting on behavior in one relationship when answering questions about dating behaviors in the past year.

Participants were asked to report on their sexual behavior, indicating whether the people they "date or hook up" are "all female," "mostly female," "both male and female," "mostly male," "all male," or "I do not date or hook up," almost all participants reported exclusively heterosexual dating/hooking up behavior (97.8%). All participants had access to social media, with all participants reporting that they own a laptop and have access to a cell phone. Use of social networking sites was common in this sample, with 99.1% reporting that they have a Facebook account, and 25.8% reporting having a Twitter account.

2.2. Measures

2.2.1. Romantic attachment style

Romantic attachment style was measured using the Experiences in Close Relationships scale-Short Form (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007). This measure, adapted from the original version by Brennan et al. (1998), is widely used in research with college students to yield continuous attachment anxiety and avoidance scores rather than attachment style categories.

This 12-item measure was used to compute scores on two dimensions of attachment orientation: anxiety and avoidance. The avoidance dimension refers to how much a person distances himself/herself from relationship partners, lacks trust for relationship partners, and attempts to maintain emotional distance from others (Shaver & Fraley, 2008). The anxiety dimension reflects the extent of dependency on relationship partners and anxiety about separation from and availability of a relationship partner (Shaver & Fraley, 2008). Response options range from "1" meaning "Strongly disagree" to "7" meaning "Strongly agree." Example items include "I need a lot of reassurance that I am loved by my partner" for the anxiety subscale and "It helps to turn to my partner in times of need" for avoidance (reverse coded). See Table 1 for Chronbach's alphas of anxiety and avoidance subscales.

2.2.2. Electronic intrusion

The current study utilized the 3-item electronic intrusion (EI) perpetration subscale ($\alpha = .74$) and the 3-item electronic intrusion victimization subscale ($\alpha = .71$) from a larger 38-item measure assessing victimization and perpetration of several types of potentially harmful digital dating behaviors using the Internet and cell phones (Reed et al., in press). The five-point responses ranged from "0 times" to "More than 5 times." Scores on the three items were summed to create two subscales, each with a possible range of 0–15. These items asked participants to report how often *in the past year* they did or experienced the following behaviors: "I monitored who my dating partner(s) talk to and who he/she is friends with using the Internet or a cell phone," "I looked at my dating partner's private information on a computer or cell phone without his/her permission (like his/her personal email, instant messages, text history, calls log, etc.)," and "I monitored my dating partner's whereabouts using the Internet or a cell phone (checking his/her Facebook "status," calling or texting repeatedly to ask where he/she was, etc.)." The victimization subscale used the same three behaviors, but was worded differently to reflect victimization.

2.2.3. Media measures

We asked participants several questions about their social networking site usage, including whether they had a Facebook account (Yes/No), whether they have a Twitter account (Yes/No), and if participants have access to a computer/laptop (Yes/No) and cell phone (Yes/No).

We also adapted a commonly used method measure of traditional media use to measure social media use for this study (e.g., Calzo & Ward, 2009; Ward, Epstein, Caruthers, & Merriwether, 2011). Participants were prompted with "How much do you use social networking sites (Facebook, Twitter, Myspace, etc.)" and asked the following item: "How many hours in a typical weekday do you use social networking sites?" Participants were asked to circle one response, from "0" to "10+" hours. The same question was asked for a typical Saturday and a typical Sunday. The responses from these three items were summed (with the response to the item about a typical weekday multiplied by 5) to create a "weekly hours spent social networking" variable that ranged from 0 to 70.

2.3. Procedure

Participants read and signed a written consent form prior to participation. Participants under the age of 18 ($N = 9$) received parental permission to participate in the undergraduate psychology subject pool. Because there were only nine participants under the age of 18, and all participants were currently college students and presumably share similar social experiences, these nine participants were not excluded from the sample. Surveys were administered in paper-and-pencil form to participants seated in groups of approximately 10 people with clipboards for added privacy. The survey took most participants about 40 minutes to complete. A researcher was present to provide appropriate support and mental health resources if needed. Participants placed their surveys in a brown envelope before returning it to the experimenter to further ensure anonymity. Participants received course credit for their participation and were free to refuse or end their participation at any time.

3. Results

3.1. Preliminary analyses

To investigate gender differences for each variable of interest, we performed independent samples *t*-tests. No significant gender differences emerged for the key variables, including frequency of victimization and perpetration of electronic intrusion in the past year. See Table 1 for the zero-order correlations between continuous variables of interest, both for the overall sample and for men and women separately. Zero-order correlations were also conducted between the variables of interest and several demographic variables including age, family income, ethnicity, religiosity, and spending formative years outside of the U.S. The demographic variables significantly associated with variables of interest and covariates were added to regression models as demographic controls.

3.2. Regression analyses predicting electronic intrusion perpetration

To examine the contribution of romantic attachment anxiety and avoidance to the perpetration of EI behaviors, hierarchical multiple regressions were performed for women and men in the sample. We chose to perform separate analyses for women and men rather than examining sex as a moderator because previous research has shown sex differences in digital communication and the impact of EI behaviors (Bennett et al., 2011; Blais, Craig, Pepler, & Connolly, 2008; Kimbrough et al., 2013; Muscanell & Guadagno, 2012; Reed et al., in press). Because the experience of

Table 1
Zero-order correlations between variables of interest with descriptive statistics.

	1	2	3	4	5	α	Mean (Std. Dev.)
1. Attachment anxiety scale						.73	22.17 (6.53)
2. Attachment avoidance scale	.03					.80	16.61 (6.14)
Women	.05						
Men	−.10						
3. Electronic intrusion victimization	.10	−.01				.71	3.04 (3.58)
Women	.14	−.06					
Men	.06	.06					
4. Electronic intrusion perpetration	.32***	−.10	.62***			.74	3.24 (3.70)
Women	.33***	−.16	.60***				
Men	.30**	.01	.68***				
5. Hours per week spent social networking	.15*	.03	.06	.15*		N/A	20.49 (14.95)
Women	.07	−.07	.05	.13			
Men	.26*	.20	.07	.16			

EI perpetration, and digital dating more broadly, may be qualitatively different for women and men, analyses were run separately rather than including gender as a moderator in a single model. Before the hierarchical multiple regressions were conducted, the variables were tested for normality and the independent variables were tested for collinearity. Results of the variation inflation factor (all less than 1.059), and collinearity tolerance (all greater than .945) suggest that there are not significant issues with collinearity in this model.

In step 1, we entered the demographic variables "total family income," "identify as Black," "identify as Asian," and "identify as Latina/Hispanic" as controls because they were found to be significantly correlated with other variables in the model for women or men. The race/ethnicity identification variables were entered into the model as dummy codes. For example, participants either did not identify as Asian (coded as "0") or did identify as Asian (coded as "1"). Higher total family income per year was associated with less frequent reporting of EI for men, $r(93) = -.24$, $p = .023$. Identifying as Black was associated with more frequent reporting of EI victimization for men, $r(93) = .27$, $p = .009$. Among men in our sample, attachment avoidance scores were associated with identifying as Asian, $r(93) = .21$, $p = .043$. Higher total family income per year was associated with lower attachment avoidance scores for women, $r(134) = -.30$, $p < .000$. Also for women, identifying as Hispanic/Latina was associated with more hours spent per week social networking, $r(133) = .20$, $p = .022$. Therefore, these demographic variables were entered in the regression model as demographic controls.

Based on the zero-order correlation results, we entered three possible covariates on step 2 of the analyses for men and women. "Hours spent per week social networking" was entered as a covariate because higher anxious attachment scores were associated with more hours spent per week social networking. Higher scores on the electronic intrusion victimization scale were associated with higher electronic intrusion perpetration, indicating that participants who reported perpetration were also likely to report victimization. To control for this association, we entered electronic intrusion victimization as a covariate. In step 3 for both models, we entered the hypothesized independent variables of attachment anxiety and attachment avoidance scores.

For women, no demographic variables entered on step 1 were significant predictors of EI (see Table 2). In step 2, electronic intrusion victimization (EIV) was a significant predictor of EI. In step 3, EIV and both attachment anxiety and avoidance were significant predictors of EI perpetration. More frequent EIV was associated with more frequent reporting of EI. A higher level of attachment anxiety was associated with more frequent perpetration of EI; conversely, a higher level of attachment avoidance was associated with less frequent perpetration of EI (see Table 2).

The model to predict men's electronic intrusion perpetration was similar to that of women for attachment anxiety, but not for attachment avoidance (see Table 2). No demographic correlates were significant predictors in step 1. In step 2, EIV was a significant predictor of EI perpetration. In step 3, EIV and attachment anxiety were significant predictors of EI perpetration. Higher frequency of EIV was associated with more reports of EI, and higher levels of attachment anxiety were associated with more EI perpetration. Unlike the model for women, attachment avoidance was not a significant predictor of EI for men. For college women and men, attachment anxiety is associated with electronic intrusion

Table 2
Hierarchical multiple regressions predicting electronic intrusion perpetration for women and men.

	Women			Men		
	Step 1 β	Step 2 β	Step 3 β	Step 1 β	Step 2 β	Step 3 β
Income	.039	.064	.038	−.313	−.183	−.130
Identifies as Asian	.954	1.184	1.170	−.057	−.248	−.241
Identifies as Black	1.649	1.227	1.109	3.54	−.134	−.213
Identifies as Latino(a)/Hispanic	−3.149	−1.903	−1.677	−.989	.589	.138
Hours SN		.028	.021		.023	.011
EIV		.615***	.577***		.620***	.625***
Att anxiety			.134**			.135**
Att avoidance			−.086*			−.019
Adj. R^2	.014	.353	.419	.046	.425	.470
F change	1.477	34.192***	8.095***	2.070	28.643***	4.493*

Note. Hours SN = hours spent per week social networking, EIV = electronic intrusion victimization, Att anxiety = attachment anxiety score, Att avoidance = attachment avoidance score.
* $p < .05$,
** $p < .01$,
*** $p < .001$.

perpetration in dating relationships, even after controlling for demographics, social networking use, and victimization of electronic intrusion behaviors.

4. Discussion

We hypothesized that women would report higher levels of EI perpetration, attachment anxiety would be positively associated with EI, and attachment avoidance would be negatively associated with EI. Results largely supported these hypotheses. We found that even when controlling for demographics, hours spent social networking, and reports of EI victimization, attachment insecurity significantly predicted EI perpetration for both women and men. For both women and men, higher levels of attachment anxiety were associated with more frequent reports of EI perpetration. Higher levels of attachment avoidance, however, were negatively associated with reports of EI perpetration for women only. There were no significant gender difference in reporting EI perpetration for women and men.

Previous literature suggested that women use social media more often and experience more jealousy and negative emotions associated with social media and their dating relationships (Kimbrough et al., 2013; Muise et al., 2009; Muscanell et al., 2013). However, we found no significant gender differences in reports of hours spent social networking or electronic intrusion victimization or perpetration among our college sample. The association between attachment anxiety and EI also showed a similar pattern for women and men. Our study found, in contrast to previous research, that other psychological factors beyond gender influenced the likelihood to engage in EI. The current study differed from past work because we examined patterns of social media behaviors in dating relationships (e.g., looking at a dating partner's private digital information) rather than self-reports of emotional reactions (e.g., jealousy from Facebook), and asked about social media use broadly rather than about a specific platform. The lack of gender differences in the current study highlights the importance of utilizing a variety of behavioral and emotional measures of the experience of social media use in dating relationships, as our results do not support a conclusion that women are more jealous and intrusive in their digital relationships than men.

Consistent with previous literature finding that attachment insecurity was associated with negative experiences in dating relationships, we found that this association holds for the social media relationship context for intrusive electronic dating behaviors. Our findings contribute to growing evidence that social media is an important social relational context for college students, and psychological factors and "off-line" relational patterns are often reproduced through the use of social media.

Our findings support that attachment anxiety is an influential psychological factor in engaging in electronic intrusion for both women and men. The nature of social media and the changing norms around digital boundaries and amount of contact expected between dating partners may make electronic dating especially difficult to navigate for anxiously attached partners. With increasing use of social media, anxiously attached individuals now have more information and access about their partners' whereabouts, activities, social interactions, and private information. Additionally, it has become more normative to remain in almost perpetual contact with dating partners through a variety of modalities for social media interaction (e.g., texting, Twitter, Facebook). Our results suggest that while this expectation of constant contact may be an issue for all college students, the increased information and awareness of a partner's activities may be particularly distressing for more anxiously attached college students.

Partially consistent with our hypothesis, we found that attachment avoidance was negatively associated with EI for women but not for men. There is little research on attachment and social media use among college students, and even less on how avoidant individuals may experience digital dating communication. We hypothesized that attachment avoidance would be negatively associated with EI because these individuals might avoid communicating via social media in order to maintain distance and discourage intimacy. Our results show that when controlling for hours spent using social networking and electronic intrusion victimization, avoidance was a significant negative predictor of EI for women. This study focused on hours spent using social networking as a covariate that may influence EI perpetration, but other measures of social media use including motivation and investment in social media could further elucidate the relationships between attachment avoidance and EI for men.

The methods of this study are unique because both victimization and perpetration of electronic intrusion were included. Electronic intrusion victimization was utilized as a control in our analyses, as other research has found overlap in reports of digital dating abuse and electronic aggression victimization and perpetration (e.g., Reed et al., in press). Thus, it is unsurprising that we also found a strong positive association between electronic intrusion victimization and perpetration.

4.1. Limitations

Although this study extended research on the influence of romantic attachment on social media behaviors in relationships among college students, there are limitations that should be considered in interpreting these results and their implications. This study utilized self-report survey measures of all key constructs including romantic attachment style and electronic intrusion behaviors; therefore, this method may introduce bias and increase shared method variance in our results. Although self-report measures are widely used to assess digital dating behaviors, future research should also consider gathering data from other sources including participants' partners, parents, and peers, and utilize multiple methods including qualitative interviews and analyses of logged social media usage transcripts. The measure of electronic intrusion was created for this study and is one of the first attempts to capture the most commonly reported type of potentially problematic digital dating behaviors. The full digital dating abuse measure, from which the EI measure is drawn, has been shown to be associated with other measures of psychological and physical dating violence (Reed et al., in press). These data are cross-sectional and correlational, thus, we cannot conclude that attachment style causes young adults to engage in EI. Although electronic intrusion victimization was used as a control, it was also the strongest predictor of EI perpetration. To interpret the co-occurrence of victimization and perpetration, this study could benefit from information about the emotional experience of these EI behaviors, the relational context in which these behaviors occurred, and dyadic data from each couple. We do not know whether the EI behaviors reported occurred within one or many dating relationships during the past year, or the attachment style of the participants' dating partners. However, because over 80% of participants reported having only one dating partner in the previous year, most responses correspond to a single dating relationship.

4.2. Implications and future directions

Despite these limitations, this study is an important contribution to understanding the dynamics of social media communication in college students' dating relationships. How might higher levels of anxious attachment influence the experience of dating in the digital age? Muise et al. (2009) posited that Facebook creates a "feedback loop" of jealousy in which information seen on

Facebook invokes jealousy in a dating partner, this jealousy spurs further Facebook surveillance, and the loop continues. Adding the theoretical framework of attachment to this "feedback loop" model might illuminate individual psychological differences in the influence of social media on relationship jealousy, anxiety, and intrusive digital dating behaviors. Our study also suggests that this phenomenon could influence the use of social media more broadly.

Therefore, we propose that attachment anxiety may contribute to the likelihood to perpetrate electronic intrusion through a "cycle of anxiety" for social media use in relationships. The cycle includes three phases: A social media trigger, anxiety, and electronic intrusion to attempt to relieve anxiety. The cycle begins with a social media trigger. This trigger could be a range of social media information or behaviors including delayed responses to text messages, pictures on Facebook of a partner at a party, or public messages from others posting or "tweeting" on a partner's social media profile. This trigger causes anxiety, possibly leading to the college student wondering if their partner is cheating on them, or wondering if their partner has romantic feelings for other people. This individual may then engage in electronic intrusion to attempt to calm this anxiety. For example, they may send their partner repeated messages asking where they are and who they are with, or may look at their partner's text messages from the night before without permission. Due to relational schemas associated with attachment anxiety, this new knowledge gained through monitoring and looking at private information is more likely to be interpreted in a way that perpetuates more relationship anxiety instead of providing relief or soothing the individual. Therefore, this new information is instead another social media trigger that perpetuates the cycle.

For individuals with higher levels of attachment anxiety, EI behaviors may function as a catalyst for perpetuating relationship anxiety and conflict. It is likely that for most college students with high levels of attachment anxiety, EI behaviors are not intended to harm their partner but are motivated by a desire to increase intimacy and ensure fidelity. While the motive may not be to cause emotional distress in their partners, these EI behaviors can nonetheless have that effect. If these behaviors become a repeated pattern, the EI behaviors may function to exert control over a partner, cause discomfort and fear in the victim, and – despite initial motives – become a tactic of emotional abuse.

This "cycle of anxiety" warrants further attention to the experience of electronic dating and social media use among anxiously attached individuals. As research on social media use among college students develops, more attention is being paid to the impact of social media use on mental health. Recent research has suggested that Facebook use decreases well-being and life satisfaction among young adults both in the short term and over time (Kross et al., 2013). If social networking decreases well-being for young adults in general, anxiously attached individuals may be even more at risk for negative mental health outcomes. These individual should be aware of the ways in which social media acts as a trigger for their anxiety and taught methods for calming this anxiety that do not involve electronic intrusion. Furthermore, social media use could be a significant point of intervention for teaching healthy dating relationship behaviors and treatment for anxiety for college students broadly, but especially for more anxious college women and men. As we have also discussed, due to the risk of EI behaviors escalating to the level of emotional abuse, recognizing this cycle and intervening in these behaviors could also be a form of digital dating abuse prevention.

References

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Lawrence Erlbaum.

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.

Bennett, D. C., Guran, E. L., Ramos, M. C., & Margolin, G. (2011). College students' electronic victimization in friendships and dating relationships: Anticipated distress and associations with risky behaviors. *Violence and Victims, 26*, 410–429.

Blais, J. J., Craig, W. M., Pepler, D., & Connolly, J. (2008). Adolescents online: The importance of internet activity choices to salient relationships. *Journal of Youth and Adolescence, 37*, 522–536.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.

Bowlby, John. (1979). *The making and breaking of affectional bonds*. London: Tavistock.

Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss: sadness and depression*. New York: Basic Books.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment. *Attachment Theory and Close Relationships*, 46–76.

Calzo, J. P., & Ward, L. M. (2009). Media exposure and viewers' attitudes towards homosexuality: Evidence for mainstreaming or resonance? *Journal of Broadcast and Electronic Media, 53*, 280–299.

Campbell, L., Simpson, J. A., Boldry, J., & Kashy, D. A. (2005). Perceptions of conflict and support in romantic relationships: the role of attachment anxiety. *Journal of Personality and Social Psychology, 88*, 510–531.

Collins, N. L., & Feeney, B. C. (2000). A safe haven: an attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of personality and social psychology, 78*, 1053–1073.

Draucker, C. B., & Martsolf, D. S. (2010). The role of electronic communication technology in adolescent dating violence. *Journal of Child and Adolescent Psychiatric Nursing, 23*, 133–142.

Duran, R. L., Kelly, L., & Rotaru, T. (2011). Mobile phones in romantic relationships and the dialectic of autonomy versus connection. *Communication Quarterly, 59*, 19–36. http://dx.doi.org/10.1080/01463373.2011.541336.

Feeney, B. C., & Collins, N. L. (2001). Predictors of caregiving in adult intimate relationships: an attachment theoretical perspective. *Journal of Personality and Social Psychology, 80*, 972–994.

Gentzler, A. L., & Kerns, K. A. (2004). Associations between insecure attachment and sexual experiences. *Personal Relationships, 11*, 249–265.

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511–524.

Izard, C. E., & Kobak, R. R. (1991). Emotions system functioning and emotion regulation. In J. Garber & K. Dodge (Eds.), *The development of affect regulation* (pp. 303–321). Cambridge, NY: Cambridge University Press.

Jenkins-Guarnieri, M. A., Wright, S. L., & Johnson, B. D. (2013). The interrelationships among attachment style, personality traits, interpersonal competency, and Facebook use. *Psychology of Popular Media Culture, 2*, 117–131.

Johnson, S. C., Dweck, C. S., Chen, F. S., Stern, H. L., Ok, S. J., & Barth, M. (2010). At the intersection of social and cognitive development: Internal working models of attachment in infancy. *Cognitive Science, 34*, 807–825.

Kimbrough, A. M., Guadagno, R. E., Muscanell, N. L., & Dill, J. (2013). Gender differences in mediated communication: Women connect more than do men. *Computers in Human Behavior, 29*, 896–900.

Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., et al. (2013). Facebook use predicts declines in subjective well-being in young adults. *PloS One, 8*, e69841.

Marshall, T. C., Bejanyan, K., Di Castro, G., & Lee, R. A. (2013). Attachment styles as predictors of Facebook-related jealousy and surveillance in romantic relationships. *Personal Relationships, 20*, 1–22.

Melander, L. A. (2010). College students' perceptions of intimate partner cyber harassment. *Cyberpsychology, behavior, and social networking, 13*, 263–268.

Mikulincer, M., & Erev, I. (1991). Attachment style and the structure of romantic love. *British Journal of Social Psychology, 30*, 273–291.

Morey, J. N., Gentzler, A. L., Creasy, B., Oberhauser, A. M., & Westerman, D. (2013). Young adults' use of communication technology within their romantic relationships and associations with attachment style. *Computers in Human Behavior, 29*, 1771–1778.

Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted: Does facebook bring out the green-eyed monster of jealousy? *Cyberpsychology & Behavior, 12*, 441–444.

Muscanell, N. L., & Guadagno, R. E. (2012). Make new friends or keep the old: Gender and personality differences in social networking use. *Computers in Human Behavior, 28*, 107–112.

Muscanell, N. L., Guadagno, R. E., Rice, L., & Murphy, S. (2013). Don't it make your eyes green? An analysis of Facebook use and romantic jealousy. *Cyberpsychology, Behavior, and Social Networking, 16*, 1–6.

Oldmeadow, J. A., Quinn, S., & Kowert, R. (2013). Attachment style, social skills, and Facebook use amongst adults. *Computers in Human Behavior, 29*, 1142–1149.

Pascoe, C. J. (2011). *Dude, You're a fag: Masculinity and sexuality in high school*. With a New Preface: Univ of California Press.

Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology, 30*, 227–238.

Pettigrew, J. (2009). Text messaging and connectedness within close interpersonal relationships. *Marriage & Family Review, 45*, 697–716.

Reed, L. A., Tolman, R. M., Ward, & L. M. (in press). Snooping and Sexting: Digital media as a context for dating aggression and abuse among college students. *Violence Against Women*.

Shaver, P. R., & Fraley, R. C. (2008). Attachment, loss, and grief: Bowlby's views and current controversies. In J. Cassidy & P. R. Shaver (Eds.). *Handbook of attachment: Theory, research, and clinical applications* (2nd ed.). New York: Guilford.

Spitzberg, B. H., & Hoobler, G. (2002). Cyberstalking and the technologies of interpersonal terrorism. *New Media and Society, 4*, 71–92.

Stonard, K. E., Bowen, E., Lawrence, T. R., & Price, S. A. (2014). The relevance of technology to the nature, prevalence and impact of adolescent dating violence and abuse: A research synthesis. *Aggression and Violent Behavior*.

Subrahmanyam, K., & Smahel, D. (2011). *Digital youth: The role of media in development*. New York, NY: Springer.

Subrahmanyam, K., Smahel, D., & Greenfield, P. (2006). Connecting developmental constructions to the internet: Identity presentation and sexual exploration in online teen chat rooms. *Developmental Psychology, 42*, 395–406.

van den Eijnden, R. J., Meerkerk, G. J., Vermulst, A. A., Spijkerman, R., & Engels, R. C. (2008). Online communication, compulsive internet use, and psychosocial well-being among adolescents: A longitudinal study. *Developmental Psychology, 44*, 655.

Ward, L. M., Epstein, M., Caruthers, A., & Merriwether, A. (2011). Men's media use, sexual cognitions, and sexual risk behavior. *Developmental Psychology, 47*, 592–602.

Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The experiences in close relationship scale (ECR)-short form: Reliability, validity, and factor structure. *Journal of Personality Assessment, 88*, 187–204.

Zweig, J. M., Dank, M., Yahner, J., & Lachman, P. (2013a). The rate of cyber dating abuse among teens and how it relates to other forms of dating violence. *Journal of Youth and Adolescence, 42*, 1063–1077.