

Running Head: SEXUAL NOSTALGIA

## **Sexual Nostalgia as a Response to Unmet Sexual and Relational Needs:**

### **The Role of Attachment Avoidance**

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## Abstract

Romantic relationships help people meet needs for connection and emotional and sexual fulfillment. In the current research, we investigate an unexplored response to feeling sexually and relationally unfulfilled: reflecting on positive sexual experiences with past partners (or *sexual nostalgia*). Across three studies, people low in attachment avoidance (i.e., comfortable with closeness) who were a) single or b) sexually or relationally dissatisfied reported greater sexual nostalgia, whereas people high in attachment avoidance (i.e., value autonomy) did not calibrate their feelings of sexual nostalgia based on their current relationship status or satisfaction. Sexual fantasies about past partners (i.e., sexual nostalgia) were distinct from other types of sexual fantasies (Study 1) and the effects could not be attributed to general nostalgia (Study 2) or sexual desire (Study 3). Chronic sexual nostalgia detracted from satisfaction over time. The findings have implications for theories of nostalgia and attachment and for managing unfulfilled needs in relationships.

Keywords: nostalgia, attachment, satisfaction, sexuality, relationships

Romantic relationships are a key source of happiness and help people meet fundamental needs for emotional support, personal growth and sexual connection (e.g., Aron & Aron, 1996; Baumeister & Leary, 1995; Diener & Seligman, 2002; Muise, Kim, McNulty & Impett, 2016). However, romantic partnerships are also difficult to maintain—divorce rates are between 40% and 50% in North America (Amato, 2010; Kelly, 2015)—and even among couples who stay together, satisfaction and sexual desire tend to decline over time, often after the first year (Klusmann, 2002; McNulty, Wenner, & Fisher, 2016; Schmiedeberg, & Schröder, 2016). Therefore, people are likely to experience times in their lives when they feel that their relationship and sexual needs are unfulfilled. One unexplored response to feeling unfulfilled is the extent to which people reflect on positive sexual memories from their past.

Previous research on nostalgia—sentimental longing for past experiences (Wildschut, Sedikides & Arndt, 2006)—suggests that when people experience loneliness or social disconnection, they are more likely to reflect on positive social experiences from their past (Zhou, Sedikides, Wildschut, & Gao, 2008). In the current research we extend theories of nostalgia to sexuality and investigate whether reflection on positive sexual experiences with past partners—which we term *sexual nostalgia*—is heightened during times when sexual or relational needs are unfulfilled. People who are *low in attachment avoidance*—those who are comfortable with closeness and view relationship partners as responsive (Mikulincer & Shaver, 2003)—are more likely to use nostalgia as a social resource to increase perceptions of social connection during times of rejection or loneliness (Wildschut et al., 2010). Across three studies, we test the prediction that when people have unmet sexual or relationship needs (i.e., times when they do not have a

romantic or sexual partner or when they report lower sexual or relationship satisfaction), they will report greater sexual nostalgia. We expect this association to differ based on attachment avoidance such that people low in attachment avoidance will report higher sexual nostalgia when they are single or feeling dissatisfied with their relationship but that people high in avoidance, who value autonomy, will not calibrate their feelings of sexual nostalgia based on their current fulfillment.

### **Nostalgic Memories**

Nostalgia is defined as sentimental longing for or wistful reflection on past memories (e.g., Wildschut et al., 2006) and is a highly common experience (Boym, 2001). When people bring to mind nostalgic experiences, their narratives often form a story in which they feel a connection with close others or experience a meaningful event from the past (Wildschut, Sedikides, Arndt, & Routledge, 2006). One trigger of nostalgic memories is feelings of social disconnection and loneliness (Wildschut et al., 2006; Wildschut, Sedikides, Routledge, Arndt & Cordaro, 2010; Zhou, Sedikides, Wildschut, & Gao, 2008). Some evidence suggests that nostalgia helps people restore positive self-perceptions in response to social threats or disconnection (for a review see Sedikides, Wildschut, Arndt, & Routledge, 2008) and cope with distress and create a sense of social connection (Hertz, 1990) and social efficacy (Abeyta, Routledge & Juhl, 2015) when they feel rejected or isolated. In other words, people use memories of social experiences from the past to quell current social deficits.

However, past research suggests that not everyone draws on nostalgia to the same extent when feeling disconnected. Individual differences in attachment orientation influence the extent to which people draw on nostalgia in response to social deficits.

According to attachment theory (e.g., Bowlby, 1982; Brennan, Clark, & Shaver, 1998; Mikulincer & Shaver, 2003), how people respond to relationship distress is informed by two underlying dimensions: attachment anxiety and attachment avoidance. The former reflects the extent to which a person fears rejection and abandonment and the latter the extent to which a person values independence and is uncomfortable with closeness.

People high (compared to low) in attachment avoidance tend to view others as unresponsive and are less likely to rely on relationship partners in times of need (Collins & Feeney, 2000; Fraley & Shaver, 1998; Simpson, Rholes, & Nelligan, 1992). Given this, previous research has shown that attachment avoidance is an important factor in shaping nostalgic experiences. When people low in attachment avoidance reported feeling lonely or socially disconnected, they reflected on nostalgic memories to restore their social connectedness, whereas people high in avoidance did not draw on nostalgia in response to social disconnection (Wildschut et al., 2010). It is not the case that avoidant people do not experience nostalgia; overall, they report experiencing nostalgia as often or more often than people low in avoidance. However, feelings of loneliness or disconnection do not tend to trigger nostalgic feelings for avoidant people as they do for those low in avoidance (Wildschut, 2010), possibly because highly avoidant people are more chronically lonely and therefore, loneliness does not act as a trigger for nostalgic memories. Highly avoidant people may also respond differently to nostalgia. In one study when nostalgia was induced, people low in attachment avoidance were more interested in connecting with a romantic partner, but this was not the case for highly avoidant people (Juhl, Sand, & Routledge, 2012). In sum, research on nostalgia suggests that people, particularly those low in

attachment avoidance, may draw on nostalgia to create feelings of social connection when lonely or disconnected.

Demonstrating that nostalgia might be helpful for restoring positive views of the self and others, experimental work has found that when people recalled a nostalgic (compared to an ordinary) event, they report more social connection, positive affect and self-esteem, and these benefits were largely conferred regardless of attachment orientation (Wildschut et al., 2010). There is evidence that nostalgia can, at least momentarily, enhance people's self-perceptions leading to positive self-regard and greater perceived competence navigating social relationships (Wildschut et al., 2006). However, recent research suggests that when nostalgia is experienced naturally in daily life, it is more often negatively associated with well-being and nostalgia-prone people tend to report lower overall well-being than those who are less nostalgia-prone (Newman, Sachs, Stone, & Schwarz, 2019). Therefore, it seems that although inducing nostalgic memories may be positive, chronic nostalgia may detract from well-being.

### **Nostalgia for Past Sexual Experiences**

In the current research we investigate *sexual* nostalgia—or reflection on positive sexual memories with a past partner. Sexuality is a key contributor to relationship satisfaction and well-being (e.g., Muise, Schimmack, & Impett, 2016), and, given that most romantic relationships are monogamous (Hauptert, Gesselman, Moors, Fisher, & Garcia, 2017), sexuality is often something that distinguishes romantic partners from other close relationships. Therefore, sexual memories may serve as a powerful source of connection that are distinct from nostalgic memories more generally. No previous research to our knowledge has investigated sexual nostalgia; however, research has investigated sexual

fantasies, which are defined as a form of sexual mental imagery and can, but do not exclusively, involve memories of past sexual experiences (e.g., Birnbaum, Svitelman, Bar-Shalom & Porat, 2008; Leitenberg & Henning, 1995).

Similar to general nostalgia, sexual fantasies may serve the function of providing feelings of connection. People in longer, as opposed to shorter, relationships reported more frequent sexual fantasies about people other than their romantic partner (although not necessarily a past partner; Hicks & Leitenberg, 2001), possibly because sexual desire tends to decline with increasing relationship duration (e.g., Klusmann, 2002). Sexual fantasies about people other than a current partner were also more common when people reported lower sexual and relationship satisfaction (Trudel, 2002). In one study, people in relationships were more likely to report sexual fantasies on days when they reported a negative relationship event compared to days without such an event (Birnbaum, Mikulincer, & Gillath, 2011), suggesting that people may use sexual fantasies to cope with relationship dissatisfaction.

People also seem to use sexual fantasies to restore positive perceptions of the self and the partner in response to a relationship threat. In a sexual or relational threat condition (compared to no threat), people were more likely to report fantasies that involved self-enhancement (e.g., perceiving the self as sexually powerful) and attachment-related themes (e.g., perceiving the self and others as affectionate and pleasing; Birnbaum et al., 2008). It is possible that in response to an unfulfilling relationship, people use sexual fantasy to restore perceptions of the self and others. The occurrence and content of sexual fantasies also differed based on attachment orientation. People higher in attachment avoidance tend to report less romantic-themed fantasies, whereas those high in

attachment anxiety tend to report more romantic and submissive fantasies (Birnbaum, 2007). In daily life, people's fantasies also represent attachment-related views of the self. Anxious people were more likely to represent themselves as helpless in their sexual fantasies, whereas avoidant people were less likely to be helpless and less likely to desire intimacy (Birnbaum et al., 2011). These attachment-related themes were most strongly represented in people's fantasies on days when they reported a negative relationship experience (Birnbaum et al., 2011).

Past work on sexual fantasies has not explored fantasies about past partners specifically and we suspect that reflecting on sexual experiences with past partners might provide unique opportunities for feeling connected and desired. Sexual fantasies can serve as a source of sexual novelty and help ignite desire (Mizrahi, Kanat-Maymon, & Birnbaum, 2018), and when fantasies involve a past partner, they may also serve as a source of familiarity and connection. Therefore, featuring a past partner in a sexual fantasy may allow people to draw on real past experiences of intimacy, rather than imagined ones, and this may provide sexual and relational affirmation during times when a person is unfulfilled. Past research has found that declines in relationship quality over time are associated with increased longing for an ex-partner, above and beyond general perceptions of the quality of alternatives to a relationship (Spielmann, Joel, MacDonald, & Kogan, 2012). These findings suggest that unfulfilled needs in a current relationship can lead to thoughts of an ex-partner, which might offer unique feelings of connection (compared to other relationship alternatives), possibly because thoughts of ex-partners are nostalgic. However, it is possible that it could be painful to reflect on sexual experiences with past partners, especially if there is regret about a missed opportunity



(Joel, Plaks, & MacDonald, 2019) or a longing to be with that person again (Spielmann, MacDonald & Wilson, 2009), and attachment to an ex-partner could overwhelm any benefits of sexual nostalgia. No research to our knowledge has investigated sexual fantasies involving past partners specifically and whether reflection on past sexual experiences may be a response to unmet sexual or relational needs.

### **The Current Research**

Based on research on general nostalgia (Wildschut et al., 2010), we expect that people low in attachment avoidance will calibrate their feelings of sexual nostalgia based on their current relationship status or satisfaction, whereas people high in attachment avoidance will not. For people low in attachment avoidance, who are comfortable relying on others when distressed (e.g., Collins & Feeney, 2000), nostalgic experiences with past partners might provide feelings of connection when their needs are not being met. In contrast, people high in attachment avoidance tend to view others as unresponsive and do not like to rely on others in times of need (Lavy, Mikulincer, & Shaver, 2010). We thought it was possible that overall people high in attachment avoidance might draw on sexual nostalgia more than less avoidant people. Past partners have less potential for intimacy than current partners (Spielmann, Maxwell, MacDonald, & Baratta, 2012) and may be a less threatening way for avoidant people to experience connection. Sexual aspects of nostalgia might also potentially allow avoidant people to focus on less emotional aspects of connection. However, we did not expect that avoidant people would calibrate their feelings of sexual nostalgia based on their current level of fulfillment.

Across three studies, we investigate if during times when people report unfulfilled sexual or relational needs—that is, when people are not in a relationship or are feeling

dissatisfied in a current relationship—they will report higher sexual nostalgia and also examine whether this association differs based on attachment avoidance. We also test whether the associations are similar for other types of sexual fantasies (Study 1) and aim to rule out the possibility that the associations can be attributed to general nostalgia or attachment to an ex-partner (Study 2), or to current feelings of sexual desire (Study 3). Finally, we also test how chronic feelings of sexual nostalgia when in a romantic relationship are associated with satisfaction over time (Study 3). The data and syntax for all studies are available here:

[https://osf.io/5g8yk/?view\\_only=c8fc5c0b8ffe407c8ba50f737d5b80f3](https://osf.io/5g8yk/?view_only=c8fc5c0b8ffe407c8ba50f737d5b80f3). Survey items for all studies are available in the supplement materials.

## **Study 1**

In Study 1, we first test whether fantasies about past partners can be distinguished from other types of sexual fantasies. Next, we code participants' open-ended responses about their experiences with sexual nostalgia to gather descriptive information about the circumstances in which people experience sexual nostalgia. Finally, we test our prediction that people low in attachment avoidance are more likely to experience sexual nostalgia when they report unmet sexual or relational needs.

## **Method**

### **Participants and Procedures**

Participants were recruited through Amazon's Mechanical Turk (MTurk)<sup>1</sup>, had to be living in the United States, previously involved in a sexual relationship and pass an

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<sup>1</sup> The data were collected in 2013 before recent concerns about data contamination by bots on MTurk (e.g., <https://www.maxhuibai.com/blog/evidence-that-responses-from-repeating-gps-are-random>)

attention check embedded in the survey. Forty-five participants (10%) did not pass the attention check; their data were not included. In the final sample ( $N=416$ ), participants (202 men; 212 women; 2 did not report gender) ranged in age from 18 to 72 years ( $M=31$  years,  $SD=11$  years). The sample size gives us over 90% power to detect a small effect ( $f^2=.03$ ) with an alpha of .05 and five predictors in the model. Most participants (82%) identified as heterosexual. 101 participants were single or casually dating multiple people (26%); the remaining participants were casually dating one person (10%), seriously dating one person (23%), cohabitating (8%), engaged (5%) or married (28%). Participants who were in a relationship had been in their current relationship between 1 month and 46 years ( $M=5.5$  years,  $SD=6.5$  years). Each participant was paid \$.60 for completing the 20-minute online survey.

## Measures

We assessed *common themes in participants' sexual fantasies* using Birnbaum's (2007) Sexual Fantasy Checklist. The original scale consists of 20 sexual fantasy items asking participants to rate their experience with commonly reported sexual themes in their fantasies. We added two additional items to the checklist to capture fantasies about previous partners. Participants rated each item on the degree to which they had experienced the following types of sexual fantasies from 1=*never* to 5=*very often*;  $M=2.50$ ,  $SD=.60$ ;  $\alpha=.84$ ).

We also asked participants about their feelings of *sexual nostalgia* by adapting two items assessing general nostalgia (Wildschut, et al., 2010): "Generally speaking, how often do you bring to mind experiences about previous sexual partners from your past that you feel you miss?" (1=*very rarely*; 7=*very frequently*;  $M=3.13$ ;  $SD=1.86$ )" and "Specifically, how

often do you bring to mind these past sexual experiences that you miss? (1=*once or twice a year*; 2=*once every couple of months*, 3=*once or twice a month*, 4=*approximately once a week*, 5 =*approximately twice a week*, 6= *three to four times a week*, 7=*at least once a day*;  $M=2.60$ ;  $SD=1.64$ ).” These items were highly correlated ( $r=.83$ ,  $p < .001$ ;  $M=2.89$ ;  $SD=1.24$ ).

We assessed participants’ attachment styles using the Experiences in Close Relationships-Revised (ECR-R) scale (Fraley, Waller & Brennan, 2000). On a scale from 1=*strongly disagree* to 7=*strongly agree*, participants indicated their agreement with 18 items assessing their **attachment anxiety** ( $M=3.15$ ,  $SD=1.22$ ,  $\alpha=.91$ ) and 18 items assessing their **attachment avoidance** ( $M=2.87$ ,  $SD=1.21$ ,  $\alpha=.95$ ).

For participants in relationships, we measured their **relationship quality** using the 18-item Perceived Relationship Quality Component (PRQC) inventory (Fletcher, Simpson & Thomas, 2000), which assesses relationship satisfaction, commitment, trust, love, intimacy and passion on a 7-point scale from 1=*not at all* to 7=*extremely* ( $M=5.70$ ,  $SD=1.29$ ,  $\alpha=.98$ ). We also assessed their **sexual satisfaction** with their romantic partner using the Global Measure of Sexual Satisfaction (GMSEX; Byers, 2005), which asks participants to rate their sexual relationship with their partners on five 7-point bipolar dimensions (e.g., bad-good,  $M=5.83$ ,  $SD=1.38$ ,  $\alpha=.97$ ).

Finally, if participants could recall a fantasy about a past partner (69%) we asked them **an open-ended question about past partner sexual fantasies**: “Next, we want you to describe the circumstances under which you might find yourself missing previous sexual experiences or partners. Please respond in the space provided in as much detail as possible. When do you bring to mind these past sexual experiences that you miss? What

seems to trigger your memory of the experiences? That is, under which circumstances do you think of these past sexual experiences that you miss?"

## **Results**

### **Distinguishing Fantasies about an Ex-Partner from Other Types of Fantasies**

Our first goal in Study 1 was to test whether fantasies about an ex-partner are a distinct type of sexual fantasy. We conducted an exploratory factor analysis (EFA) on the items from the Sexual Fantasy Checklist (including the two items we added about past partner fantasies). See supplementary materials for details about this analysis.

Table 1 displays the final four-factor model. Most importantly, the two items we added about fantasies involving a past partner loaded together on their own factor—past partner fantasies ( $M=2.56$ ,  $SD=1.29$ ,  $r=.80$ )—which provides evidence that fantasies about ex-partners are a distinct type of sexual fantasy. Three other factors emerged, which largely mirrored the subscales identified in Birnbaum (2007; although the dominant and dissociative factors did not emerge in our data): romantic fantasies ( $M=3.66$ ,  $SD=1.08$ ,  $\alpha=.89$ ), submissive fantasies ( $M=2.11$ ,  $SD=1.16$ ,  $\alpha=.90$ ) and group/emotionless fantasies ( $M=2.25$ ,  $SD=.98$ ,  $\alpha=.79$ ). Past partner fantasies were not significantly correlated with romantic fantasies ( $r=.004$ ,  $p=.94$ ) or submissive fantasies ( $r=.04$ ,  $p=.44$ ), and were positively correlated with group/emotionless fantasies ( $r=.45$ ,  $p<.001$ )."

### **Descriptions of Sexually Nostalgic Experiences**

Using thematic analyses (see supplementary materials for details), five themes were identified in participants' open-ended responses about the circumstances under which they feel sexually nostalgic. Themes are summarized in Table 2. In the first theme (mentioned by 40% of participants), participants discussed sexual nostalgia as a reflection

of their current relationship or state of mind. Participants described that when they are happy with their current relationship or situation (i.e., being single), they are less inclined to feel sexually nostalgic, and similarly, that when they do feel sexually nostalgic, it is often due to loneliness or dissatisfaction with their current relationship. In the second theme (20%), sexual nostalgia was closely linked to nostalgic sentiment or reminiscing.

Participants described certain smells, places, songs or other external factors that reminded them of past sexual experiences or partners. In the third theme (13%), participants described missing sexual variety, novelty or a certain sexual experience that they were no longer having in their current relationship, but had with a past partner (e.g., a past partner enjoyed certain sexual activities, was sexually adventurous, or was of a different gender than a current partner). In the fourth theme (9%), sexual nostalgia or fantasies about an ex-partner were linked to sexual arousal. Participants mentioned ex-partners appearing in their sexual fantasies, using previous sexual experiences for arousal or when masturbating or as a substitute for pornography. In the fifth theme (8%), participants linked feelings of sexual nostalgia to having continued contact with an ex-partner or longing to get back together with an ex-partner. Sixteen percent of responses did not fit into any theme. We ran a series of logistic regression analyses to test whether attachment avoidance predicted a greater likelihood of endorsing each of the themes. There were no significant effects, suggesting that avoidance was not associated with greater endorsement of any of the identified themes, although it is important to note that some of the themes were only present in a minority of participants' responses.

### **Testing Our Key Predictions**

Sexual nostalgia was highly correlated with the past partner fantasy subscale ( $r=.86, p < .001$ ) and all of the effects replicated across both measures, therefore we combined the sexual nostalgia items and the ex-partner fantasy items into a composite ( $\alpha=.89$ ) and refer to this as sexual nostalgia. In all models, we controlled for attachment anxiety (and its interaction with relationship status/satisfaction) and all predictors are centered around the grand mean. When we tested attachment avoidance and anxiety as predictors of sexual nostalgia, both people higher in avoidance ( $\beta=.21, t=4.14, p < .001$ ) and people higher in anxiety ( $\beta=.14, t=2.85, p = .01$ ) reported higher sexual nostalgia.

Consistent with our predictions, being single (coded as 0) compared to being in a relationship (coded as 1) was associated with higher levels of sexual nostalgia ( $\beta=-.26, t=-5.47, p < .001$ ) and this association was moderated by attachment avoidance ( $\beta=.22, t=2.32, p=.02$ ). As Figure 1 depicts, single participants low in attachment avoidance reported significantly higher sexual nostalgia than those in a relationship ( $\beta=-.56, t=-3.91, p < .001$ ), whereas single participants high in avoidance did not differ in sexual nostalgia from those who were partnered ( $\beta= -.01, t=-.03, p=.98$ ).

Next, with the subset of participants who reported currently being in a relationship ( $N=307$ ), we tested whether relationship quality and sexual satisfaction were associated with sexual nostalgia. Consistent with our predictions, lower relationship quality and sexual satisfaction were associated with greater sexual nostalgia ( $\beta=-.17, t=-2.42, p=.02$ ;  $\beta=-.15, t=-2.41, p=.02$ , respectively), and both of these effects were moderated by attachment avoidance ( $\beta=.11, t=-2.30, p=.02$ ;  $\beta=.18, t=-2.75, p=.006$ , respectively). As Figure 2 depicts, for people low in attachment avoidance, lower relationship quality was associated with significantly higher sexual nostalgia ( $\beta=-.54, t=-3.05, p=.002$ ), whereas for

people high in avoidance, relationship quality was not significantly associated with sexual nostalgia ( $\beta=.09$ ,  $t=.70$ ,  $p=.48$ ; see Figure 2). Similarly, people low in avoidance reported significantly higher levels of sexual nostalgia when they reported lower sexual satisfaction ( $\beta=-.55$ ,  $t=-3.54$ ,  $p < .001$ ), whereas for people high in avoidance, sexual satisfaction was not significantly associated with sexual nostalgia ( $\beta=.18$ ,  $t=1.26$ ,  $p=.21$ ). Across analyses, attachment anxiety or gender did not moderate any of the associations (see supplementary materials for information about three-way interactions with anxiety across studies).

### **Ruling Out Alternative Explanations**

We re-ran all analyses with the other types of sexual fantasies (i.e., romantic, submissive, group/emotionless) as outcomes to determine whether the pattern of results is unique to fantasies about an ex-partner. We did not see the same pattern of results with the other types of sexual fantasies. There were no significant moderations between avoidance and relationship status, relationship quality or sexual satisfaction when other types of fantasies were the outcome. Overall, these findings suggest that fantasies about an ex-partner may provide something unique in response to unmet sexual or relational needs for people low in avoidance.

### **Study 2**

Our main goals in Study 2 were to replicate the findings from Study 1 and to test whether emotional and sexual need fulfillment (across both people who are single and relationships) is associated with greater sexual nostalgia and whether this is moderated by attachment avoidance. We also aimed to rule out additional alternative explanations for the effects.



## Participants and Procedures

Participants in Study 2 were recruited following the same criteria as Study 1. Seventy-four participants (16%) did not pass an attention check embedded within the survey, therefore their data were not included. In the final sample ( $N=378$ ), participants (182 men; 194 women; 2 did not report gender) ranged in age from 18 to 75 years ( $M=31$  years,  $SD=11$  years). We have over 90% power to detect a small effect ( $f^2=.03$ ) with an alpha of .05 and five predictors in the model. The majority (86.5%) of participants identified as heterosexual. Sixty-nine participants were single or casually dating multiple people (19%); the remaining participants were casually dating one person (10%), seriously dating one person (28%), cohabitating (7%), engaged (9%), or married (27%). Participants who were in a relationship had been in their current relationship for between 1 month and 55 years ( $M=5$  years,  $SD=6.5$  years).

## Measures

In this study, we assessed **sexual nostalgia** with three face valid items developed from the open-ended responses in Study 1, including: "I reminisce about (think about, reflect on) sexual experiences with partners from my past." Participants responded to each statement on a scale from 1=*strongly disagree* to 7=*strongly agree* ( $M=3.91$ ,  $SD=1.95$ ,  $\alpha=.91$ ). The measure sexual nostalgia used in Study 2, was highly correlated with the 2-item measure used in Study 1 ( $r=.93$ ). As in Study 1, we used the ECR-R scale (Fraley et al., 2000) to assess **attachment anxiety** ( $M=3.07$ ,  $SD=1.43$ ,  $\alpha=.95$ ) and **attachment avoidance** ( $M=2.78$ ,  $SD=1.31$ ,  $\alpha=.96$ ). Participants who reported currently being in a relationship, reported their **relationship quality** using PRQC (Fletcher et al., 2000;  $M=5.75$ ,  $SD=1.23$ ,

$\alpha=.97$ ) and their *sexual satisfaction* using the GMSEX (Byers, 2005;  $M=5.70$ ,  $SD=1.53$ ,  $\alpha=.97$ ).

In Study 2, in order to compare associations between need fulfillment and sexual nostalgia across both people who are single and people in relationships, we also created items to assess the degree to which participants were currently emotionally and sexually fulfilled (i.e., either with being single or in their current relationship). People who reported not being in a current relationship responded to items about *emotional fulfillment* (e.g., “In my life, I get all of my social needs met;”  $M=3.81$ ,  $SD=1.42$ ,  $\alpha=.87$ ) and *sexual fulfillment* (e.g., “Everything I would like to do sexually I can do;”  $M=3.78$ ,  $SD=1.59$ ,  $\alpha=.72$ ). People who reported being in a current relationship responded to slightly different items about *emotional fulfillment* (e.g., “There is nothing I want socially that I cannot get in my relationship;”  $M=5.28$ ,  $SD=1.59$ ,  $\alpha=.88$ ) and *sexual fulfillment*: “Everything I would like to do sexually I can do with my partner;”  $M=4.65$ ,  $SD=1.85$ ,  $\alpha=.89$ ).

Finally, we asked participants two items to assess *general nostalgia* from Wildschut et al. (2010) ( $M=4.18$ ,  $SD=1.85$ ). We also assessed the extent to which participants had *accepted their past relationship ending* using the 6-item Acceptance of Marital Termination scale (Kitson, 1982). Items were rated on a 4-point scale (1=*not at all*, 2=*slightly*, 3=*somewhat*, 4=*very much*)” ( $M=2.15$ ,  $SD=.44$ ,  $\alpha=.84$ ) and were worded more generally so they could be answered about non-marital past partners.

## Results

In Study 2, attachment avoidance was not associated with sexual nostalgia ( $\beta= .03$ ,  $t=.53$ ,  $p=.59$ ), but attachment anxiety was associated with higher sexual nostalgia ( $\beta=.23$ ,  $t=4.33$ ,  $p< .001$ ). However, as in Study 1, being single (coded as 0) compared to being in a

relationship (coded as 1) was associated with higher levels of sexual nostalgia ( $\beta=-.32, t=-5.29, p < .001$ ) and this effect was moderated by attachment avoidance ( $\beta=.79, t=3.02, p=.003$ ). As Figure 3 depicts, single people low in avoidance were significantly more sexually nostalgic than were those in a relationship ( $\beta=-.50, t=-5.07, p < .001$ ), whereas this effect was attenuated, although still significant, for people high in avoidance ( $\beta=-.57, t=-2.17, p=.03$ ).

Next, we tested whether relationship quality and sexual satisfaction in participants' current relationship ( $N=309$ ) were associated with feelings of sexual nostalgia. When people reported lower levels of relationship satisfaction, they reported feeling more sexually nostalgic for past partners ( $\beta=-.26, t=-3.31, p=.001$ ) and this association was moderated by attachment avoidance ( $\beta=.13, t=2.06, p=.04$ ). As depicted in Figure 4, for people low in avoidance, lower relationship quality was associated with feeling more sexually nostalgic ( $\beta=-.39, t=-3.41, p=.001$ ), but for people high in avoidance, sexual nostalgia did not significantly differ based on participants' reported relationship quality ( $\beta=-.14, t=-1.72, p=.09$ ). Next, lower sexual satisfaction was marginally associated with higher sexual nostalgia ( $\beta=-.13, t=-1.94, p=.05$ ), but this association was not significantly moderated by attachment avoidance ( $\beta=.10, t=1.66, p=.10$ ). However, given that the moderation was trending in the predicted direction, we tested the simple effects. People low in attachment avoidance reported significantly higher sexual nostalgia when they were less sexually satisfied ( $\beta=-.22, t=-2.40, p=.02$ ), whereas people high in avoidance did not calibrate their feelings of sexual nostalgia based on their sexual satisfaction ( $\beta=-.03, t=-.34, p=.73$ ).

In Study 2, we also assessed the degree to which people felt emotionally and sexually fulfilled being single or in their current relationship as an additional way to assess unmet sexual and relational needs. None of the effects that follow were significantly moderated by relationship status ( $p_s > .14$ ), therefore, in these analyses we combined people who reported being in a current relationship and those who were not in a relationship. People who reported feeling less emotionally and sexually fulfilled reported higher sexual nostalgia ( $\beta = -.31, t = -5.22, p < .001$ ;  $\beta = -.27, t = -5.26, p < .001$ , respectively), and both of these effects were moderated by attachment avoidance ( $\beta = .14, t = 2.59, p = .01$ ;  $\beta = .13, t = 2.47, p = .01$ , respectively). For people low in attachment avoidance, feeling emotionally and sexually unfulfilled were associated with greater sexual nostalgia ( $\beta = -.46, t = -5.44, p < .001$ ;  $\beta = -.43, t = -5.76, p < .001$  respectively), whereas for people high in avoidance, this effect was attenuated, but still significant for emotional need fulfillment ( $\beta = -.20, t = -2.07, p = .04$ ), and not significant for sexual need fulfillment ( $\beta = -.14, t = -1.72, p = .09$ ). Figure 5 depicts the results for emotional need fulfillment and the pattern is the same for sexual need fulfillment. There were no significant moderations by attachment anxiety or gender.

### **Ruling Out Alternative Explanations**

Although sexual nostalgia was significantly correlated with general feelings of nostalgia ( $r = .34, p < .001$ ), the pattern of results remained largely the same after controlling for general nostalgia. With one exception—the interaction between attachment avoidance and relationship status (single versus in a relationship) which was reduced to non-significant ( $p = .09$ )—all of the significant findings reported above remain significant after controlling for general nostalgia. We ran subsequent models where we replaced sexual

nostalgia with general nostalgia to test whether the effects replicate with a more general measure of nostalgic sentiment; none of the findings replicate for general nostalgia. These findings suggest that there is something unique about sexual nostalgia that people may seek out when their emotional or sexual needs are unfulfilled.

Next, to rule out the possibility that our effects are accounted for by people's desire to get back together with their ex-partner, we re-ran all of our analyses controlling for break-up acceptance. All of the significant effects reported above—with the exception of the interaction between relationship status and avoidance, which was reduced to non-significance ( $p=.09$ )—remained significant after controlling for break-up acceptance, suggesting that longing a past relationship is not driving the effects.

### **Study 3**

In Study 3, given that feelings of sexual nostalgia can be triggered (see open-ended responses in Study 1) and likely fluctuate day-to-day (as general nostalgia does; Newman et al., 2019), we used an ecologically valid 4-week dyadic daily experience study to test whether daily changes in relationship and sexual satisfaction are associated with sexual nostalgia and whether these associations are moderated by attachment avoidance. Our key predictions were that on days when people report lower sexual and relationship satisfaction (compared to their average), they will report higher sexual nostalgia, and that these associations will be moderated by attachment avoidance, such that people lower in avoidance will report higher sexual nostalgia when they are less satisfied, but that people higher in avoidance will not calibrate their feelings of sexual nostalgia based on their satisfaction. We also extend the findings in our previous studies by testing how chronic

sexual nostalgia (aggregated over the diary study) predicts sexual and relationship satisfaction over time.

### **Participants and Procedure**

To be eligible for the study, participants had to be at least 18 years of age, involved in a relationship of at least two years, and living together. Both members of each couple were required to participate. Participants were recruited through advertisements posted on Kijiji. Interested individuals were contacted via e-mail to confirm their eligibility and underwent a phone screening by a trained research assistant who verified the relationship and reviewed study procedures. Participants were instructed to complete their surveys every evening, to not discuss their surveys with their partner, and that if they missed a day, they should leave that particular survey blank. Each participant was initially sent a background survey in which they provided demographic information and completed a set of questionnaires. Then, the day after completing the background survey, participants completed 28 daily surveys. Only daily surveys completed before the next morning were treated as valid. In total, participants completed 4,693 daily surveys, an average of 23.9 (out of 28) days per person. Main effects were tested at the daily level and moderations involved a cross-level interaction between attachment (measured at background) and satisfaction (measured each day). To test the effects of sexual nostalgia over time, couples also completed a follow-up survey three months after the daily experience study. Each participant received up to \$75 in store gift cards for completing the background, daily and follow-up surveys.

We aimed to recruit at least 100 couples based on recommendations by Kenny, Kashy and Cook (2006) and initially recruited 104 couples (N=208). However, six couples

were excluded because one or both partners did not complete the background survey. We retained 98 couples (N=196) for the final analyses (94 mixed-sex couples, 4 same-sex couples). Post-hoc power analyses using an online application for calculating power curves for multi-level studies (Kleiman, 2019) indicated that with 196 participants and 4,693 days, we had 99% power to detect a small effect. Most participants were married (55%) or cohabitating (44%) and Caucasian (65%). Participants ranged in age from 21 to 61 ( $M=33$  years,  $SD=8$  years) and had been in their current relationship between 2 to 25 years ( $M=8$  years,  $SD=5$  years).

## Measures

In the background survey, participants reported basic demographic information (i.e., gender, age, ethnicity, relationship length), as well as their attachment style using ECR-S measure (Wei et al., 2007), which includes 6 items for **attachment anxiety** ( $M=3.32$ ,  $SD=1.10$ ) and 6 items for **attachment avoidance** ( $M=2.34$ ,  $SD=.98$ ). At both background and the three-month follow-up survey, participants reported on their **relationship satisfaction** (3 items from the PRQC; Fletcher et al., 2000; background:  $M=5.89$ ,  $SD=1.05$ ,  $\alpha=.94$ ; follow-up:  $M=5.73$ ,  $SD=1.38$ ,  $\alpha=.98$ ) and **sexual satisfaction** (GMSEX; Byers, 2005; background:  $M=5.49$ ,  $SD=1.23$ ,  $\alpha=.95$ ; follow-up:  $M=5.36$ ,  $SD=1.38$ ,  $\alpha=.96$ ).

In the daily surveys, we used measures with only a few items or a single item to increase efficiency and minimize participant attrition (Bolger, Davis, & Rafaeli, 2003). All items were rated on a 7-point scale. Each day we assessed **relationship satisfaction** with one item ("Today with regards to my relationship, I felt satisfied;  $M=5.65$ ,  $SD=1.45$ ), **sexual satisfaction** with the GMSEX (Byers, 2005) adapted for the daily context ( $M=4.95$ ,  $SD=1.63$ ,  $\alpha=.98$ ), **sexual nostalgia** with one face valid item ("Today I reminisced about

(thought about, reflected on) sexual experiences with partners from my past;"  $M=2.08$ ,  $SD=1.71$ ), and *sexual desire* with one item "Today I felt a great deal of sexual desire for my partner;"  $M=4.10$ ,  $SD=1.90$ ; Muise et al., 2018)

## **Data Analyses**

Analyses were conducted using multi-level modeling with mixed models in SPSS 23 to account for the non-independence in the data. We tested a two-level cross model to account for the fact that both partners are completing the daily surveys on the same days (Kenny, Kashy, & Cook, 2006) with random intercepts for each partner. Background predictors (i.e., attachment avoidance) were grand-mean centered such that they represent between-person differences. Daily predictors (i.e., sexual and relationship satisfaction) were person-mean centered and aggregated to partition their within- and between- variance. In all models, both person-mean centered variables and aggregates were entered as predictors (Raudenbush, Bryk, Cheong, & Congdon, 2004) but we will focus on the within-person effects, which represent daily deviations from a person's own mean. In all models, we control for the previous day's sexual nostalgia, so that the effects represent changes in sexual nostalgia from the previous day. Moderations are cross-level interactions between attachment and daily (person-mean centered) satisfaction; all main effects are included in the model and although our key predictions are about attachment avoidance, we control for attachment anxiety and interactions with anxiety, as well as the interactions with the aggregated versions of the daily variables in all analyses. We probe significant interactions by calculating the simple slope effects using one standard deviation value below and above the mean of attachment avoidance (Aiken, West, & Reno, 1991).

## **Results**



## Daily Analyses

People higher in attachment avoidance reported higher daily sexual nostalgia ( $b=.32, SE=.08, t(183.76)=-3.95, p<.001$ ) and there was no significant association between attachment anxiety and daily sexual nostalgia ( $b=.01, SE=.07, t(187.51)=.16, p=.87$ ). The tests of our key predictions revealed that after accounting for how sexually nostalgic a person felt on the previous day, on days when participants reported lower relationship satisfaction, they reported higher sexual nostalgia ( $b=-.05, SE=.01, t(3641.06)=-3.90, p < .001$ ), and this was significantly moderated by attachment avoidance ( $b=.05, SE=.01, t(3941.15)=3.88, p < .001$ ). On days when people low in avoidance reported lower relationship satisfaction, they reported significantly higher sexual nostalgia ( $b=-.11, SE=.02, t(3708.20)=-5.65, p<.001$ ), whereas the association between daily relationship satisfaction and sexual nostalgia was not significant for people high in avoidance ( $b=-.01, SE=.01, t(3841.15)=-.50, p=.62$ ).

Similarly, on days when participants reported lower sexual satisfaction, they reported higher sexual nostalgia ( $b=-.05, SE=.01, t(3562.69)=-3.87, p<.001$ ). This association was significantly moderated by attachment avoidance ( $b=.06, SE=.01, t(3782.61)=4.33, p<.001$ ). On days when participants low in avoidance reported lower sexual satisfaction, they reported significantly higher sexual nostalgia ( $b=-.11, SE=.02, t(3695.55)=-5.79, p < .001$ ), whereas the association between daily sexual satisfaction and sexual nostalgia was not significant for people high in avoidance ( $b =.01, SE=.02, t(3739.44)=.43, p=.66$ ). None of the moderations with attachment anxiety were significant.

Finally, it is possible that daily feelings of sexual desire for a partner are associated with both sexual and relationship satisfaction as well as sexual nostalgia. Therefore, we re-

ran all the analyses controlling for sexual desire and all of the effects remained significant. In this study, gender did significantly moderate our key effects of interest, such that the moderating effect of avoidance on the association between sexual/relationship satisfaction and sexual nostalgia were only significant for men ( $b=.10$ ,  $SE=.02$ ,  $t(1763)=4.62$ ,  $p < .001$ ;  $b=.07$ ,  $SE=.02$ ,  $t(1755.47)=3.53$ ,  $p < .001$ , respectively) but not for women ( $b=.01$ ,  $SE=.02$ ,  $t(2020.12)=.53$ ,  $p=.60$ ;  $b=.02$ ,  $SE=.01$ ,  $t(2032.38)=1.37$ ,  $p=.17$ ).

### **Overtime Analyses**

After accounting for how satisfied participants felt at background, people who reported more sexual nostalgia over the course of the 4-week diary study felt less satisfied with their sex lives and relationships three months later ( $b=-.20$ ,  $SE=.07$ ,  $t(130.75)=-2.84$ ,  $p=.01$ ;  $b=-.28$ ,  $SE=.07$ ,  $t(145.69)=-4.24$ ,  $p<.001$ ). These results suggest that people who feel more chronically nostalgic for their past sexual relationships report declines in their current sexual and relationship satisfaction. These associations were not moderated by attachment avoidance ( $ps < .28$ ), however there was an unexpected moderation between sexual nostalgia and attachment anxiety predicting relationship satisfaction at follow-up ( $b=.12$ ,  $SE=.06$ ,  $t(116.68)=2.03$ ,  $p=.04$ ). For people low in anxiety, higher sexual nostalgia over the course of the diary was associated with lower relationship satisfaction three months later ( $b=-.30$ ,  $SE=.09$ ,  $t(98.35)=-3.44$ ,  $p=.001$ ), but for people high in anxiety, there was no significant association between sexual nostalgia and relationship satisfaction over time ( $b=-.02$ ,  $SE=.11$ ,  $t(125.73)=-.18$ ,  $p=.86$ ).

### **Testing an Alternative Explanation**

We also assessed feelings of sexual nostalgia for an earlier time in the current relationship with one item: "Today, I missed sexual experiences I had at an earlier time in

my relationship with my current partner” (rated on a 7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*;  $M=2.53$ ,  $SD=1.87$ ). The item was correlated with sexual nostalgia for a past partner at  $r=.18$ ,  $p<.001$ . However, daily relationship and sexual satisfaction were not associated with sexual nostalgia for an earlier time in the current relationship, and these associations were not moderated by attachment avoidance.

### **Discussion**

Given that romantic relationships are difficult to maintain and that couples often report declines in their desire and satisfaction over time (e.g., McNulty et al., 2016), it is likely that that most people will encounter times in their lives when they feel they have unfulfilled sexual and relational needs. In the current research, we explored whether reflecting on or reminiscing about past sexual partners (which we termed sexual nostalgia) is one response to having unfulfilled sexual or relational needs. Study 1 revealed that sexual nostalgia involves sexual memories or sexual fantasies about a past partner and provided evidence that fantasies about past partners are distinct from other types of sexual fantasies. In participants’ descriptions of past partner sexual fantasies, the most commonly reported theme was that people tend to draw on these fantasies when feeling lonely or dissatisfied in a current relationship. The data across all three studies converged with this theme from the qualitative data and indicated that when people are single or feeling dissatisfied with their sex life or relationship, they reported more sexual nostalgia (however, in Study 3 the effects were driven by men). Also, consistent with past research on general nostalgia and attachment theory (e.g., Wildschut et al., 2010), people low in attachment avoidance—those who are comfortable with closeness—calibrated their feelings of sexual nostalgia based on their current feelings of fulfillment, whereas those

high in avoidance did not. That is, people low in avoidance reported greater sexual nostalgia when they were single, or feeling unfulfilled in their current relationship, but for people high in avoidance, their feelings of sexual nostalgia did not differ based on their current fulfillment.

### **Extending Nostalgia to the Sexual Domain**

Previous research has found that nostalgia is often triggered by negative feelings, such as loneliness and disconnection, and drawn on as a way to restore positive self-regard and social connection (Wildschut et al., 2006). We extended past work on nostalgia to sexuality to test whether sexual nostalgia is heightened in response to low sexual and relational fulfillment. The current findings do not simply mirror past work on nostalgia in the sexual domain but indicate that reminiscing about past sexual experiences is a unique way that people might cope with feeling dissatisfied in their current relationship or situation. In Study 2, we demonstrated that sexual nostalgia is distinct from general nostalgia and that people do not draw on general nostalgia in response to a lack of fulfillment in their relationship or sex life. The associations with sexual nostalgia for a past partner also seem to be distinct from reminiscing about an earlier time in the current relationship—the function, if any, of reflecting on nostalgic sexual experiences with a current partner is an interesting avenue for future research.

One reason why nostalgic memories are thought to be powerful for restoring social connection when threatened or lonely is because they affirm that a person is loved and accepted and momentarily make a valuable past experience part of one's present (Sedikides et al., 2008). Our findings from Study 1 that fantasies about past partners are distinct from other types of sexual fantasies suggest that fantasizing about a past partner

might provide something unique when feeling dissatisfied that other sexual fantasies cannot provide. Sexual fantasies in general can serve a compensatory function (e.g., Birnbaum, 2007); women in longer (compared to shorter) marriages are more likely to fantasize about a person other than their spouse (Pelletier & Herold, 1988), which may compensate for lower relationship satisfaction or sexual boredom (Trudel, 2002). Given that fantasies about past partners are based on real experiences, these types of fantasies might have the unique ability to validate one's sense of their sexual self and their desirability. Past research on general nostalgia has shown that feelings of nostalgia can lead people to connect with their authentic self (Baldwin, Beirnet, & Landau, 2015), and in this sense, sexual nostalgia might lead people to feel sexually authentic. In addition, feelings of disconnection from a specific close other can be tempered by substituting another connection (Baumeister & Leary, 1995), and in the context of romantic and sexual relationships, past partners might be the most appropriate substitute on which to reflect.

Although there is evidence that reflecting on nostalgic experiences leads to positive self-regard, feelings of love and protection (Wildschut et al, 2006), and feeling that one's life is meaningful (Routledge, Arndt, Sedikides, & Wildschut, 2008), nostalgic memories also give rise to negative emotions. When people wrote about a nostalgic event (compared to an ordinary event) the narratives included themes of both happiness and sadness (Wildschut, Stephan, Sedikides, Routledge, & Arndt, 2008), although in past experimental studies, evoked nostalgic memories tended to be more positively valenced (Wildschut et al., 2006). Recent work has found that nostalgic memories that occur naturally in daily life are associated with mixed emotions but may be more imbued with negative as opposed to positive feelings (Newman et al., 2019). People who were more chronically nostalgic

reported lower well-being (Newman et al., 2019). These findings converge with the current findings on sexual nostalgia. In Study 3, people who reported more sexual nostalgia over the course of the 28-day diary study felt less satisfied with their sex lives and relationships three months later. It is possible that brief reflection on positive past sexual experiences may help people manage a current lack of fulfillment, but chronically reflecting on past sexual experiences may detract from their current relationship. More research is needed to consider the costs and benefits of sexual nostalgia for feelings of satisfaction and overall well-being.

### **Attachment Avoidance and Sexual Nostalgia**

The current findings that people low in attachment avoidance calibrate their sexual nostalgia based on their current feelings of fulfillment or satisfaction, but people high in avoidance do not, are consistent with past research. Avoidant people do not tend to seek support from others when distressed or rejected (e.g., Mikulincer & Shaver, 2008) and often view their partners as unresponsive. Therefore, avoidant people may not see past partners as sources of connection and comfort. It was not the case, however, that avoidant people did not draw on sexual nostalgia. In Studies 1 and 3, people higher (compared to lower) in avoidance reported higher overall levels of sexual nostalgia. Avoidant people seem to draw on sexual nostalgia even when they are satisfied in a current relationship, possibly suggesting a more chronic need to distance themselves from closeness and intimacy in relationship. In fact, people low in avoidance who were satisfied in their relationship are the people who did not draw on sexually nostalgia, possibly as a cognitive strategy to avoid reflecting on alternatives to their current relationship.

The attachment system and the sexual system are inextricably linked as romantic partners serve as both attachment figures and sexual partners (Birnbaum, 2010). Therefore, memories of past sexual partners might provide both feelings of connection and sexual desirability, especially for people who are low in attachment avoidance. Securely attached individuals view sex as a way to express intimacy, feel confident and fulfill needs for connection (e.g., Birnbaum, 2016), and as such, memories of past sexual experiences might provide a powerful source to boost feelings of connection and restore sexual confidence when feeling unfulfilled. People high in attachment avoidance, however, do not use sex to achieve emotional intimacy in relationships and tend to distance themselves from romantic or emotional motives for sex (Birnbaum, 2016). Given that sexual fantasies can represent attachment-related wishes, such as avoidant people seeing themselves as less helpless and intimate in their fantasies (Birnbaum et al., 2011), people may use fantasies or memories of past partners to meet their attachment-related needs. The current findings suggest just that—when people low in attachment avoidance feel that their sexual or relational needs are unmet, they are more likely to reflect on past sexual relationships, possibly to temporarily meet those needs.

### **Limitations and Future Directions**

The current research provides novel insight into one strategy people use when their sexual and relational needs are unfulfilled, but many questions remain. Although we have evidence across three studies that people low in attachment avoidance draw on sexual nostalgia when single or dissatisfied, we do not yet know what feelings of sexual nostalgia provide in the moment. Given that the daily effects in Study 3 were driven by men, it is possible that men might draw on past experiences in response to daily changes

in satisfaction, whereas women might draw on sexual nostalgia only when feeling chronically unfulfilled. Related to this, we do not know the function of sexual nostalgia for people high in attachment avoidance, who, overall reported higher levels of sexual nostalgia, and draw on sexual nostalgia even when satisfied. It is also likely that it is healthy for people to be able to fulfill some emotional and social needs outside of their romantic relationship (i.e., there might be some limitations to how we assessed emotional need fulfillment in Study 2), and if needs are being met in other close relationships, unmet needs in a current romantic relationship might not trigger nostalgia or might not detract from satisfaction. Future work might consider when and for whom sexual nostalgia is functional for helping people manage unfulfilled needs and when sexual nostalgia be harmful for relationships.

Our theoretical predictions suggest that sexual nostalgia occurs in response to unmet sexual or relational needs, but it is also possible that sexual nostalgia might lead to feeling dissatisfied or unfulfilled. When people described sexual fantasies about past partners in Study 1, one theme that emerged was that those fantasies could be triggered by visiting a certain place, smelling a type of perfume or cologne, or hearing a certain song (much like general nostalgic memories). If sexual nostalgia is triggered externally, reflecting on a past sexual experience might lead to feeling less satisfied in a current relationship. In Study 3, we have evidence that chronic sexual nostalgia in a relationship can detract from satisfaction over time. Past research on general thoughts about an ex-partner found that declines in satisfaction over time were linked to longing for an ex-partner but also, that longing for an ex-partner detracted from a satisfaction in a current relationship (Spielmann et al., 2012). Therefore, it is possible that feelings of



dissatisfaction might lead to greater sexual nostalgia, but that more chronic nostalgia also detracts from satisfaction. Future work might consider the trajectory of sexual nostalgia and relationship and sexual satisfaction over time to tease this apart.

## **Conclusion**

Romantic partners help people meet important needs for connection and sexual fulfillment. In the current research, we explored a novel response to a lack of sexual and relational fulfillment—reflecting on sexual experiences with past partners. Across three studies, people comfortable with closeness (i.e., low in attachment avoidance) reported higher sexual nostalgia when single or when dissatisfied in a current relationship. Sexual memories or fantasies about past partners were shown to be distinct from other types of sexual fantasies and from general nostalgia, and the findings suggest that sexual nostalgia might provide unique opportunities for restoring feelings of connection and sexual desirability when unfulfilled. Future work might consider when and how sexual nostalgia is beneficial for the self and relationships and when it might detract from well-being.

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**Table 1**

*Factor Analyses of the Sexual Fantasy Inventory (Study 1)*

<b>Item</b>	<b><u>Factor Loadings</u></b>			
	<b>Past Partner</b>	<b>Romantic</b>	<b>Submissive</b>	<b>Group/Emotionless</b>
Having sex with someone who I have had sex with in the past (but who is not my current partner).	<b>.95</b>	-0.01	-0.01	-0.01
Having sex with an ex-partner.	<b>.81</b>	.02	.01	.06
Experience romantic feelings while having sex.	-0.01	<b>.83</b>	-0.01	.02
Kissing passionately.	.04	<b>.78</b>	.02	.00
Feeling affection and emotional connection while having sex.	.02	<b>.97</b>	-0.004	-0.004
Being forced to surrender.	-0.01	-0.01	<b>.97</b>	-0.04
Being hurt and sexually victimized.	.004	-0.01	<b>.59</b>	.15
Being passive and submissive while having sex.	-0.01	.04	<b>.79</b>	.002
Being overpowered.	.004	-0.01	<b>.94</b>	-0.04
Having sex with more than one person at the same time.	-0.10	.06	-0.05	<b>.94</b>
Having anal intercourse.	.04	-0.08	.01	<b>.54</b>
Participating in an orgy.	-0.12	.05	.03	<b>.78</b>
Having sex with an anonymous stranger.	.16	-0.09	.03	<b>.51</b>

Having emotionless sex.	.16	-.19	.04	<b>.42</b>
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**Items removed from factor analysis:**

Exerting dominance and control over my partner.

Having sex with my current partner.

Having sex with a vague faceless person.

Having sex without making eye contact.

Having sex with someone I know but who is not my current partner.

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**Items in the final model that did not load above .4 onto any factor in final model:**

Having sex with an imaginary lover.

Taking the initiative and dominant role while having sex.

Raping or humiliating a woman or man.

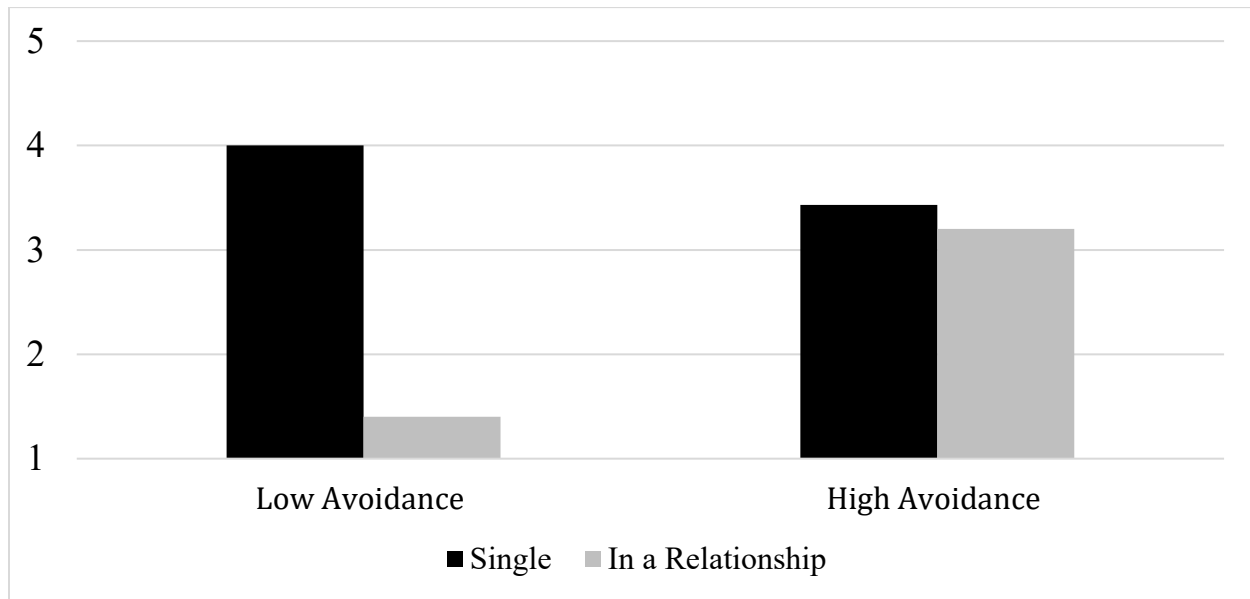
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**Table 2***Frequencies and Examples of Themes from Participants' Open-Ended Responses (Study 1)*

Themes	Percent Reported	Examples
Reflection of relationship or state of mind	40%	"I usually think about my previous partners when I am lonely, or not around friends." "I don't really miss them because I am pleased with the partner I have."
Nostalgic sentiment or reminiscing	20%	"Certain colognes and smells bring those memories back. Places we have been or places I think that person would have liked to go." "Anytime when I'm reminded of something about her. Like if I smell the same kind of perfume or lotion she used. Or a song or tv show she liked."
Sexual variety	13%	"I miss sexual experiences with the ex I previously mentioned the most because she was adventurous." "The times when I find myself missing previous sexual experiences with my ex are when I miss having sex with women, as I am now in a relationship with a man."
Arousal	9%	"When I am aroused, I can't imagine having sex with someone I haven't met yet. So I default to previous partners."
Longing for ex-partner	8%	"I just miss the love I felt. I am in a relationship again but it is just not the same."

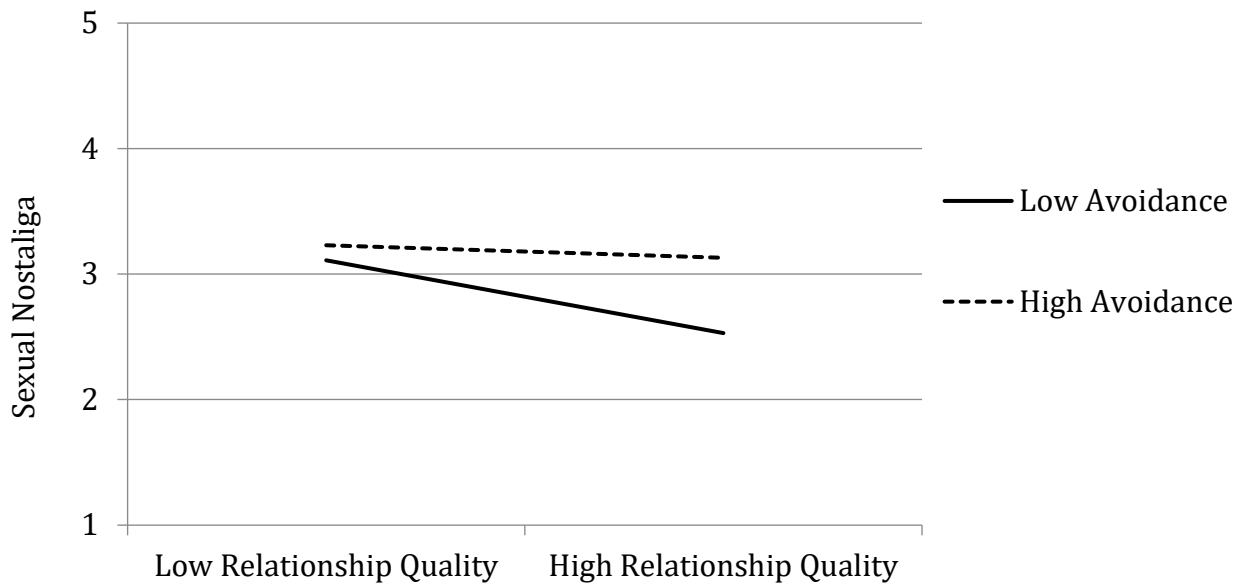
**Figure 1**

*Attachment avoidance moderates the association between relationship status and sexual nostalgia (Study 1)*



**Figure 2**

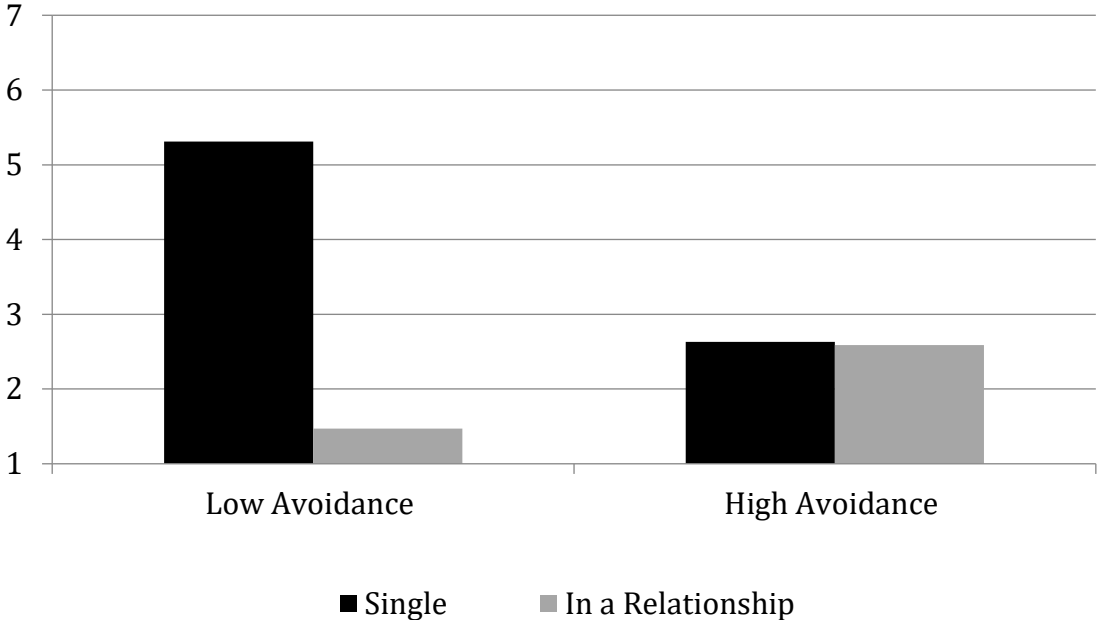
*Attachment avoidance moderates the association between relationship satisfaction and sexual nostalgia (Study 1)*



*Note:* High and low relationship satisfaction was tested at one standard deviation above and below the mean. The pattern of results is the same for sexual satisfaction.

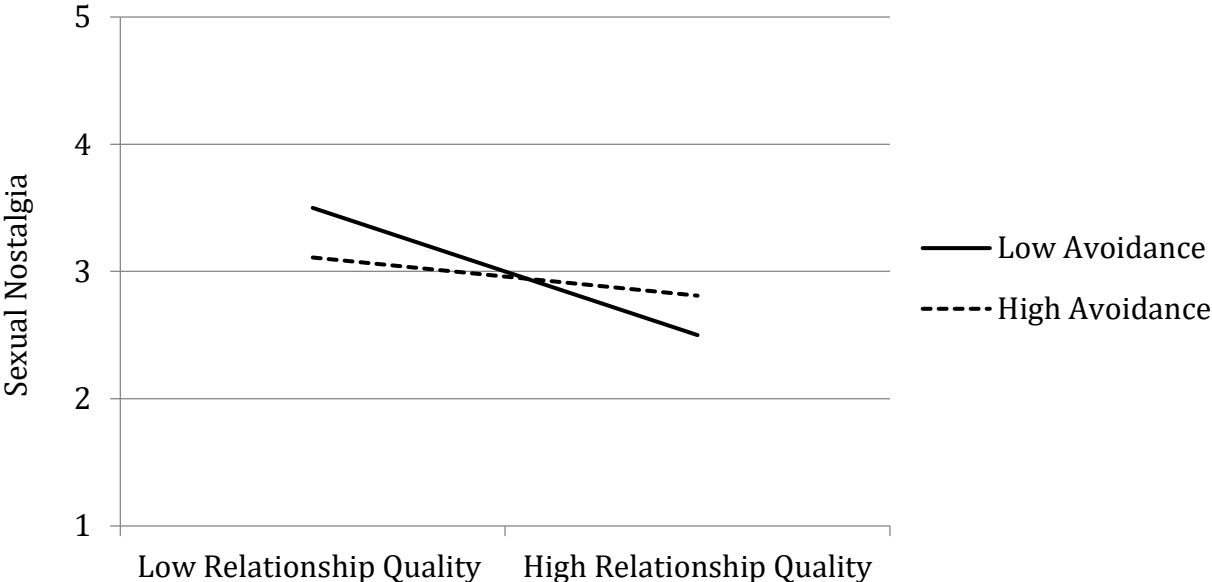
**Figure 3**

*Attachment avoidance moderates the association between relationship status and sexual nostalgia (Study 2)*



**Figure 4**

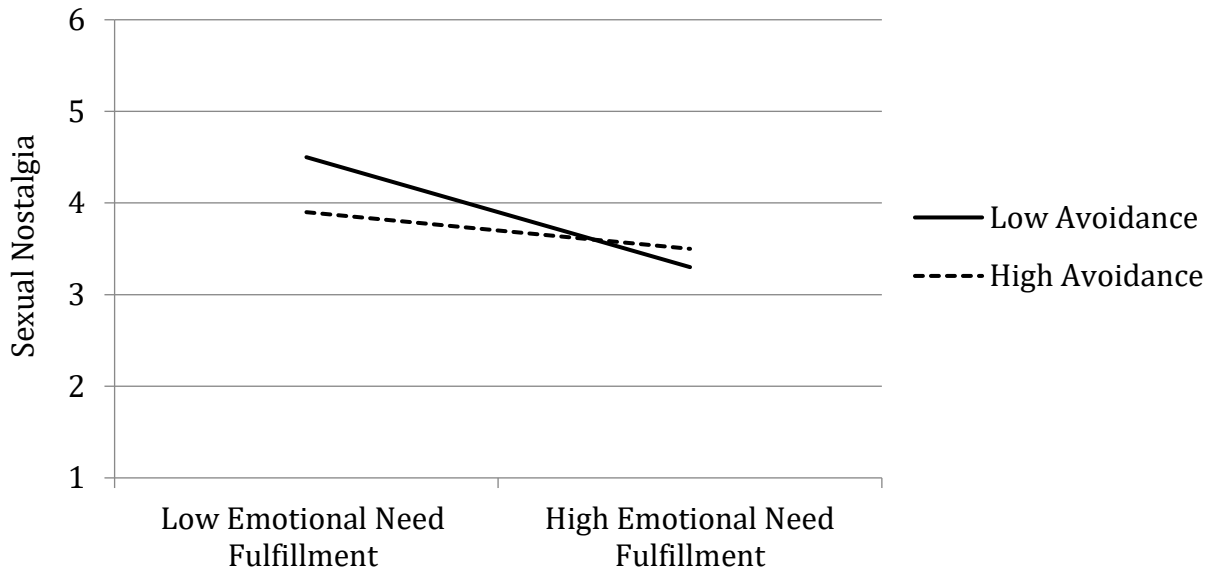
*Attachment avoidance moderates the association between relationship quality and sexual nostalgia (Study 2)*





**Figure 5**

*Attachment avoidance moderates the association between emotional need fulfillment and sexual nostalgia (Study 2)*



Note: The pattern is the same for sexual need fulfillment.