Article

JSPR

Journal of Social and Personal Relationships
2020, Vol. 37(1) 100–123

DOI: 10.1177/0265407519856701
journals.sagepub.com/home/spr
SAGE

The predictive effects of fear of being single on physical attractiveness and less selective partner selection strategies

Stephanie S. Spielmann[1], Jessica A. Maxwell[2], Geoff MacDonald[3], Diana Peragine[4], and Emily A. Impett[4]

Abstract

Fear of being single (FOBS) tends to predict settling for less when seeking a romantic partner. The present research sought to examine whether this is due, at least in part, to lower physical attractiveness among those who fear being single. In a photo-rating study (Study 1, $N = 122$) and a speed-dating study (Study 2, $N = 171$), participants completed the FOBS Scale, rated perceptions of their own physical attractiveness, and were then rated on physical attractiveness by a team of raters. In Studies 1 and 2, FOBS was not significantly associated with judge-rated physical attractiveness as a bivariate association or in hierarchical regressions accounting for anxious and avoidant attachments, gender, and smiling. There were mixed findings in both studies regarding the association between FOBS and self-rated physical attractiveness in bivariate versus multivariate analyses. However, the tendency of those with stronger FOBS to be less selective during speed dating was not explained by either their judge-rated or their self-rated physical attractiveness.

Keywords

Fear of being single, physical attractiveness, selectivity, speed dating

[1] Wayne State University, USA
[2] Florida State University, USA
[3] University of Toronto, Canada
[4] University of Toronto Mississauga, Canada

Corresponding author:
Stephanie S. Spielmann, Department of Psychology, Wayne State University, 5057 Woodward Avenue, Detroit, MI 48202, USA.
Email: spielmann@wayne.edu

Fear of being single (FOBS)—defined as concern, anxiety, or distress regarding the current or prospective experience of being without a romantic partner—tends to be associated with "settling for less" in relationships. For both men and women, stronger FOBS predicts greater romantic interest in dating prospects who are less responsive and physically attractive, and, once in a relationship, a lower likelihood of initiating breakups with dissatisfying partners (Spielmann, MacDonald, et al., 2013). Those with stronger FOBS also tend to adopt a less selective matching strategy when speed dating by expressing interest in a larger number of people (Spielmann, MacDonald, et al., 2013). The present research explores whether perceptions of physical attractiveness—either as perceived by others or the self—are associated with FOBS and predict settling for less among those who fear being single.

Fear of being single

Concerns about being without a romantic partner may manifest as a trait-like individual difference known as FOBS. Prior research supporting its trait-like properties has demonstrated that FOBS varies much more between than within people. For instance, a variance components analysis on daily fluctuations in FOBS over a 27-day experience sampling study suggested that 73.1% of the variance was between participants, and only 26.9% was within participants (Spielmann, MacDonald, Joel, & Impett, 2016). However, as nearly 27% variation within people suggests, FOBS can also vary based on current experience and context. For instance, FOBS increases immediately following a breakup, regardless of who initiated the breakup decision (Spielmann et al., 2016). Furthermore, preliminary studies suggest that FOBS can be experimentally primed (unpublished data; Spielmann & Cantarella, 2019). Additionally, consuming more romantic media (e.g., films/television in the romantic comedy and drama genres) is associated with stronger FOBS, particularly for single women (Timmermans, Coenen, & Van den Bulck, 2019).

As an individual difference measure, FOBS aligns with several other constructs commonly used in research on relationships. For instance, Spielmann, MacDonald, et al. (2013) demonstrated that FOBS was positively associated with—though distinct from—neuroticism (John & Srivastava, 1999), romantic avoidance goals (adapted from Elliot, Gable, & Mapes, 2006), and a variety of constructs assessing interpersonal sensitivities, such as rejection sensitivity (Downey & Feldman, 1996), loneliness (Russell, Peplau, & Cutrona, 1980), and hurt feelings proneness (Leary & Springer, 2001).

However, perhaps, the most important theoretical and empirical distinction is between FOBS and attachment style. Anxiously attached individuals—those who are characteristically clingy and needy in their relationships—resemble those with stronger FOBS such that they are both insecure about their worthiness of love and whether a partner will be there when they need them (Mikulincer & Shaver, 2007). In this sense, people high in FOBS and anxious attachment likely share similarities in their working models of self, such that they generally possess negative self-views. Indeed, FOBS and anxious attachment typically tend to be strongly, positively correlated (e.g., $r = .51$; Spielmann, MacDonald, Maxwell, Joel, Peragine, Muise, & Impett (2013)). However, FOBS and anxious attachment load onto separate factors and do not have substantial cross-loading of items across factors

(Spielmann, MacDonald, et al., 2013). Therefore, despite their strong correlation, FOBS and anxious attachment appear to be distinct relational constructs that tap into unique insecurities. Furthermore, research has consistently demonstrated unique predictive effects of FOBS on relationship behavior above and beyond the effects of anxious attachment (Spielmann, MacDonald, et al., 2013; Spielmann et al., 2016).

Although anxious attachment and FOBS may align in terms of negative working models of self, it is less clear how FOBS maps onto working models of other. Unfortunately, the broader antecedents, or factors contributing to FOBS, generally remain unknown. However, different antecedents could conceivably contribute to more positive or negative working models of other. If, for instance, FOBS arises from chronic desires for a partner to provide safety and security (akin to anxious attachment), then those who fear being single may hold positive working models of other, such that they hold romantic partners in high regard and their fears represent worries of not attaining this ideal. On the other hand, if FOBS develops from perceptions that partners are generally unwilling to commit, are unreliable, or unfaithful, and successful relationships are therefore difficult to attain, FOBS may be characterized by negative working models of other. Negative working models of other, particularly with regard to perceptions of partners as unreliable, are a key feature of avoidant attachment (Mikulincer & Shaver, 2007). Avoidant individuals generally prefer to maintain independence and avoid vulnerability in order to prevent being hurt or disappointed (Spielmann, Maxwell, MacDonald, & Baratta, 2013). Because it remains unknown exactly what working models of self and other those who fear being single tend to hold, greater distinction among FOBS, anxious attachment, and avoidant attachment is warranted.

FOBS and less selective partner selection strategies

Several studies in Spielmann, MacDonald, et al.'s (2013) research illustrate that those with stronger FOBS engage in less selective mate-selection strategies. For instance, in simulated online dating paradigms (Studies 5 and 6) in which participants viewed dating profiles varying in responsiveness and physical attractiveness, those with stronger FOBS expressed greater romantic interest than their less fearful counterparts in the unresponsive and unattractive profiles. Moreover, among those who feared being single, romantic interest was relatively equally directed toward the responsive versus unresponsive targets and attractive versus unattractive targets, suggesting a lack of selectivity. Importantly, those with stronger FOBS recognized that the profiles varied in responsiveness and attractiveness and that they would be less likely to have a lasting relationship with the unresponsive (vs. responsive) target. Despite recognizing that certain targets were less desirable, those who feared being single wanted to date them anyway. Another example of less selective dating strategies was documented among speed daters (Study 7). Compared to less fearful participants, those with stronger FOBS expressed a desire to match with a greater number of dates. While this strategy does not necessarily mean they are settling for lower quality partners (as perhaps, many of the speed-dating participants would be high-quality partners), it does reflect a less selective approach to finding a match compared to those who do not fear being single.

Interestingly, some research suggests that those who fear being single may not need to adopt less selective strategies to find a partner. For instance, during speed dating, daters with stronger FOBS were selected for matches by fellow speed daters just as frequently as their less fearful counterparts (Spielmann, MacDonald, et al., 2013; Study 7). In other words, FOBS did not hinder ability to garner others' romantic interest.

To date, the mechanisms explaining *why* those with stronger FOBS are less selective remain unknown. By objective metrics, those who fear being single seem to have relative success at attracting partners. Furthermore, they seem to acknowledge that their less selective strategies are potentially matching them with targets who are less responsive, less attractive, and less likely to foster lasting relationships. While there are likely multiple mechanisms contributing to less selective dating strategies among those who fear being single involving both intra- and interpersonal factors, the present research explores the role of physical attractiveness as one possible contributor.

FOBS and physical attractiveness

In the present research, we conducted an exploratory test of the association between FOBS and physical attractiveness and tested whether physical attractiveness helps to explain less selective dating strategies of those who fear being single. The association between FOBS and physical attractiveness has not previously been explored, and there may be compelling reasons to expect that they would or would not be associated.

One possible outcome of our exploratory analysis is that stronger FOBS will be associated with lower physical attractiveness. Physical attractiveness, particularly as judged by others, is important for attracting mates. In a classic study, physical attractiveness (as rated by others) was the strongest predictor of others' liking and desire to pursue a second date among those setup on randomly selected blind dates (Walster, Aronson, Abrahams, & Rottmann, 1966). Similarly, studies on mate selection consistently find a preference for more physically attractive dates, among both men and women (Eastwick, Luchies, Finkel, & Hunt, 2014). In the modern dating landscape where a photo on an online profile can make a meaningful difference in being contacted by prospective dates (Fiore, Taylor, Mendelsohn, & Hearst, 2008; Hitsch, Hortaçsu, & Ariely, 2010), it is possible that less physically attractive people may be particularly prone to concerns about their ability to attract a romantic partner—in other words, less attractive people may be prone to FOBS.

The matching hypothesis suggests that daters tend to select partners who are similar to them in attractiveness (Walster et al., 1966). The matching hypothesis might suggest that lower attractiveness ought not to be associated with FOBS, because less attractive daters should still garner the romantic interest of their fellow less attractive daters. However, while the matching hypothesis has been well-supported in contexts of attraction and similarity among partners in established relationships (Feingold, 1988), some research on initial partner "selection" suggests that daters initially approach others who are more physically attractive than themselves. For instance, participants in Walster, Aronson, Abrahams, and Rottmann's (1966) study of randomly assigned blind dates expressed greater interest in more attractive dates regardless of their own level of attractiveness. Furthermore, studies of popular online dating websites found that, although

attractiveness between targets is typically positively correlated and successful reciprocation of romantic interest is predicted by similarity in attractiveness between targets, daters are more likely to initiate contact with those who are more attractive than themselves (Lee, Loewenstein, Ariely, Hong, & Young, 2008; Shaw Taylor, Fiore, Mendelsohn, & Cheshire, 2011). Similarly, a speed-dating study found that—while the target's physical attractiveness was a significant, positive predictor of romantic interest during the event—daters' *similarity* in physical attractiveness (as rated by others) was not a significant predictor of romantic interest (Luo & Zhang, 2009). Therefore, while the matching hypothesis may indeed predict successfully finding a partner among less attractive daters, less attractive daters may still regularly experience greater romantic rejection or unrequited interest than their more attractive counterparts. Such rejection may take its toll: mating sociometer theory suggests that romantic rejection should reduce state self-esteem, which may in turn lower one's sense of mate value, or perceived ability to attain high-quality partners (Kavanagh, Robins, & Ellis, 2010). Indeed, Kavanagh et al. found that those who were rejected by opposite-sex targets reported lower mating aspirations than those who were accepted, and this effect was mediated by declines in state self-esteem. It is possible, therefore, that being viewed as less attractive to others may increase the frequency of experiencing romantic rejection or unrequited interest, which may in turn induce concerns about one's mate value and ability to attract a desirable partner. In fact, less attractive daters do tend to recognize their relatively limited pool of prospective partners and consequently set lower standards for a romantic partner (Buss & Shackelford, 2008). Because we see a similar pattern of settling for less among those with stronger FOBS, perhaps their willingness to settle for less is in part explained by physical attractiveness.

On the other hand, our exploratory test of the association between FOBS and physical attractiveness may reveal that there is no meaningful association between the two. That is, perhaps the antecedents of FOBS are independent of attractiveness levels, or the contributions of attractiveness to FOBS are so small as to be irrelevant. Indeed, there are not generally strong associations between physical attractiveness and personality dynamics or relational insecurities. For instance, meta-analyses suggest that physical attractiveness is largely independent of personality (Feingold, 1992). Furthermore, anxious attachment is not typically associated with physical attractiveness (McClure, Lydon, Baccus, & Baldwin, 2010; Poulsen, Holman, Busby, & Carroll, 2013; Tidwell, Reis, & Shaver, 1996), despite anxiously attached individuals generally being viewed as undesirable during mate selection (McClure & Lydon, 2014). Taken together, there may not be reason to expect that FOBS is associated with lower attractiveness to the extent that it is considered a trait-like individual difference.

FOBS and self-perceptions of attractiveness

In addition to how others judge physical attractiveness, one's own perceptions of attractiveness may also impact relationship decisions. That is, *feeling* unattractive may induce lower confidence in one's ability to find a mate. For instance, Buote (2010) found that experimentally manipulating women's self-perceptions of physical attractiveness led those made to feel less attractive to decrease their sense of mate value and set lower

relationship standards. While self-perceptions of physical attractiveness are often positively correlated with others' ratings of attractiveness (Feingold, 1992; Montoya, 2008; Weeden & Sabini, 2007), this is not always the case (Brewer, Archer, & Manning, 2007; Wiederman & Hurst, 1998). Furthermore, regardless of the correlation between self- and other-rated attractiveness, there are unique predictive effects of self-rated attractiveness above and beyond other-rated attractiveness within relational and sexual contexts, such as sociosexuality, evaluating others' physical attractiveness, and expectations of romantic rejection (Montoya, 2008; Weeden & Sabini, 2007). In other words, how one feels about their attractiveness should matter above and beyond others' evaluations of attractiveness. Therefore, we also explored in the present research whether FOBS was associated with lower self-rated attractiveness and whether lower self-rated attractiveness predicted settling for less during partner selection.

Present research

The present research involved two studies. In Study 1, participants completed the FOBS Scale (Spielmann, MacDonald, et al., 2013), reported their self-perceived physical attractiveness and had a photograph taken which was rated for physical attractiveness by independent coders. In Study 2, speed daters completed the FOBS Scale and reported their self-perceived attractiveness, then their physical attractiveness was rated by coders. Importantly, in Study 2, we also collected data on how selective participants were in their partner choices and how desirable they were to fellow daters while speed dating in order to test whether self- or judge-rated attractiveness served to explain previous findings that FOBS predicts being less selective—but not necessarily less desirable—in partner selection contexts (Spielmann, MacDonald, et al., 2013).

Study 1

Method

Participants and procedure. Data collection for Study 1 took place in 2013, during the university's final exam period. Research assistants approached students on campus to complete a survey and be photographed. Participants selected a candy bar or CAD$2 coffee card as compensation. We excluded data from one participant for only partially completing the survey and from one outlier greater than 3 *SD* below the mean on self-rated attractiveness. The final sample included 122 participants (75 women), aged 18–32 ($M = 21.55$ and $SD = 3.48$). Fifty-five participants were single, 20 were casually dating, and 44 were in a serious relationship, engaged, or married (three did not report their relationship status). Self-reported ethnicity was not assessed in either study. We determined sample size based on convenience during predetermined data collection periods in public spaces on campus. A sensitivity analysis in G*Power 3.1 suggests that we had 80% power to detect a correlation (ρ) of .25 (Table 2) and a small-to-medium effect size of Cohen's f^2 of .065 for a regression coefficient in a model with eight predictors (Table 3).

Measures. Mean, *SD*, range, and reliability statistics for Studies 1 and 2 are presented in Table 1. Participants completed the *FOBS* Scale (Spielmann, MacDonald, et al., 2013), responding to items such as "I feel anxious when I think about being single forever," on a scale from 1 (*not at all true*) to 5 (*very true*), and completed a measure of *anxious attachment* and *avoidant attachment* using the Experiences in Close Relationships-Revised Scale (Fraley, Waller, & Brennan, 2000), responding to items such as "I worry a lot about my relationships," (anxious attachment) and "I get uncomfortable when a romantic partner wants to be very close," (avoidant attachment) on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

The research assistant took a photograph (including shoulders and above) of each participant. *Judge-rated physical attractiveness* ratings were obtained by aggregating independent ratings from 10 research assistants (5 male and 5 female) who were blind to survey responses. The number of raters was determined based on available research assistants. The number of raters in both studies is consistent with recommendations for stability in attractiveness ratings (Hehman, Xie, Ofosu, & Nespoli, 2018). Using a common approach for assessing general perceptions of attractiveness (Meltzer, McNulty, Jackson, & Karney, 2014), raters were asked the single item, "How physically attractive would you rate this person?" on a scale from 1 (*not at all attractive*) to 9 (*very attractive*). Although participants received no instructions regarding whether or not to smile, two coders rated whether the participant was *smiling in the photo* ($N_{yes} = 102$ and $N_{no} = 20$). Raters were not given instructions on what to classify as a smile but simply indicated whether they perceived the target to be smiling. Cohen's κ for smiling ratings was .85 and disagreements were resolved by the second author. *Self-rated physical attractiveness* was obtained with the survey question, "Overall, how physically attractive would you rate yourself?" on a scale from 1 (*not at all attractive*) to 9 (*very attractive*).

Data analyses

We imputed missing data in Studies 1 and 2 using the expectation maximization algorithm in SPSS 25. This imputation method for missing data provides unbiased parameter estimates and improves statistical power of analyses (Enders, 2001). However, results remained the same even if missing data were not imputed. In both Studies 1 and 2, we first conducted bivariate correlations among all variables for descriptive purposes and to test the simple association between FOBS and self- and judge-rated attractiveness (see Table 2). In order to lend further support to possible null effects in our exploratory analyses regarding the association between FOBS and physical attractiveness, we used SPSS to generate a Bayes Factor for the bivariate correlations with default uniform priors ($c = 0$).[1] The Bayes Factor provides a continuous metric of the extent to which data are more congruent with the null hypothesis (no correlation between variables) compared to the alternative hypothesis. Bayes factors between 3 and 10 reflect moderate support for the *null* hypothesis (note this is not the default direction in some other software), and Bayes factors between 10 and 30 reflect strong support for the null (Jeffreys, 1961).

In both Studies 1 and 2, we next conducted two separate hierarchical regression models: one with judge-rated attractiveness and one with self-rated attractiveness as the dependent variable (see Table 3). Our goal was to test the unique association between FOBS and

Table 1. Descriptive statistics for Studies 1 and 2.

	Study 1				Study 2				Comparison between Studies 1 and 2 (when applicable)		
	M	*SD*	Range	Reliability	*M*	*SD*	Range	Reliability	F (1,291)	p	η_p^2
FOBS	2.47	0.96	1.00–4.83	$\alpha = .80$	2.70	1.10	1.00–5.00	$\alpha = .87$	3.23	.07	.011
Anxious attachment	3.23	1.03	1.11–6.00	$\alpha = .91$	3.83	1.10	1.17–6.50	$\alpha = .75$	—	—	—
Avoidant attachment	3.02	1.07	1.00–6.22	$\alpha = .94$	3.29	0.96	1.17–6.00	$\alpha = .70$	—	—	—
Self-rated physical attractiveness	6.07	1.53	2.00–9.00	—	6.30	1.58	3.00–10.00	—	—	—	—
Judge-rated physical attractiveness	4.61	1.29	1.80–7.60	ICC (2, k) = .93	4.20	1.20	1.91–7.32	ICC (2, k) = .95[a]	7.72	.006	.026
Selectivity	—	—	—	—	0.49	0.25	0.00–1.00	—	—	—	—
Desirability	—	—	—	—	0.48	0.22	0.00–1.00	—	—	—	—

Note. FOBS = fear of being single; ICC = intraclass correlation correlation; SD = standard deviation.

[a]Due to a programming error, photos from three participants in Study 2 were rated by only 10 raters. While the attractiveness ratings of these photos are used in final analyses, they were not included when assessing overall interrater reliability. However, a separate reliability analysis on these three photos also showed strong interrater reliability (ICC = .90).

Table 2. Bivariate correlations between variables in Studies 1 and 2, respectively.

	FOBS	Anxious attachment	Avoidant attachment	Self-rated attractiveness	Judge-rated attractiveness	Smiling in photo	Gender	Selectivity	Desirability	Relationship status
FOBS	—	.44***	.09	−.17†	−.06	.13	.11	—	—	−.15
Anxious attachment	.49***	—	.37***	−.24**	−.24**	−.08	−.03	—	—	−.33***
Avoidant attachment	.03	−.07	—	−.12	−.08	−.12	−.06	—	—	−.35***
Self-rated attractiveness	−.19*	−.22**	−.04	—	.32***	−.01	−.03	—	—	.31***
Judge-rated attractiveness	−.12	−.13†	.13	.36***	—	.31***	.15	—	—	.21*
Smiling in photo	−.08	−.04	−.006	.10	.16*	—	.15	—	—	−.01
Gender	−.04	.04	.36***	−.06	.17*	.28***	—	—	—	.03
Selectivity	−.19*	−.06	.22**	.13†	.22**	.07	.32***	—	—	—
Desirability	−.09	−.14†	.14†	.32***	.43***	.22**	.32***	.15†	—	—
Wearing costume	.13†	.07	−.05	.02	.04	.02	.27***	.04	.13†	—

Note. Correlations from Study 1 are presented above the diagonal, and correlations from Study 2 are presented below the diagonal. FOBS = fear of being single.
†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

Table 3. Results of hierarchical linear regression models in Studies 1 and 2, respectively, predicting judge-rated and self-rated physical attractiveness.

	Judge-rated physical attractiveness						Self-rated physical attractiveness					
	Study 1			Study 2			Study 1			Study 2		
	β	p	$CI_{95\%}$	β	p	$CI_{95\%}$	β	p	$CI_{95\%}$	β	p	$CI_{95\%}$
Step 1												
FOBS	−.01	.92	[−.262, .237]	−.07	.43	[−.289, .124]	−08	.45	[−.428, .192]	−.10	.26	[−.423, .117]
Anxious attachment	−.23	.03	[−.557, −.030]	−.09	.31	[−.313, .101]	−.19	.08	[−.618, .038]	−.17	.051	[−.541, .001]
Avoidant attachment	.04	.66	[−.185, .289]	.09	.30	[−.093, .296]	−.04	.66	[−.360, .230]	−.02	.77	[−.292, .217]
Gender	.10	.26	[−.097, .358]	.10	.23	[−.078, .325]	−.02	.79	[−.321, .245]	-.07	.39	[−.379, .149]
Smile in photo	.28	.002	[.186, .793]	.12	.12	[−.040, .345]	−.02	.85	[−.412, .342]	.10	.20	[−.089, .415]
Step 2												
FOBS × Gender	−.02	.86	[−.287, .239]	−.06	.49	[−.281, .136]	.01	.91	[−.291, .326]	.02	.78	[−.236, .313]
Anxious Attachment × Gender	.08	.45	[−.166, .373]	.14	.11	[−.038, .380]	.34	.002	[.198, .830]	−.05	.57	[−.355, .196]
Avoidant Attachment × Gender	−.10	.34	[−.381, .133]	.03	.69	[−.155, .234]	−.28	.006	[−.729, −.127]	−.03	.67	[−.313, .200]

Note. FOBS = fear of being single; CI = confidence interval.

physical attractiveness when accounting for several important covariates. In Step 1 of the regression, we entered the main effects of FOBS, anxious attachment, avoidant attachment (all standardized), gender ($-1 =$ *male* and $1 =$ *female*), and smiling in the photograph ($-1 =$ *not smiling* and $1 =$ *smiling*). These covariates were selected based on prior research on FOBS and attractiveness ratings, respectively. First, it is typical in research on FOBS to account for anxious attachment (Spielmann, MacDonald, et al., 2013; Spielmann et al., 2016), in order to isolate the unique predictive effects above and beyond this construct with which it is highly correlated. However, because we also speculate that FOBS could share some theoretical similarity with avoidant attachment in terms of negative working models of others, we also controlled for avoidant attachment in all analyses. Participant's gender was included as a covariate, because women tend to be rated as more physically attractive than men (Shaw Taylor et al., 2011; Tidwell et al., 1996), and—relevant to Study 2—women tend to be more romantically selective than men (Lee et al., 2008; McClure et al., 2010). Finally, we statistically controlled for smiling in the photograph, because smiling is known to impact perceptions of physical attractiveness (Reis et al., 1990).

Because some research suggests that men and women should differentially value attractiveness during mate selection (Buss, 1989; Feingold, 1990; Eastwick & Finkel, 2008), we also tested for possible moderation by gender in each model. Step 2 of the hierarchical regression models included the two-way interaction between FOBS and gender, in order to explore whether possible gendered effects of attractiveness ratings moderate the effects of FOBS. Additionally, in order to serve as proper covariates for effects of FOBS, the interactions between anxious attachment and gender and between avoidant attachment and gender were included in Step 2 as recommended by Yzerbyt, Muller, and Judd (2004).[2] Simple effects tests were conducted when results revealed significant interactions.

Finally, in Study 1, we also conducted a post hoc exploratory analysis of the association between participants' relationship status (coded as $-1 =$ *single* and $1 =$ *casually and seriously dating*) and FOBS on judge- and self-rated physical attractiveness.[3] Because Study 1 was not initially designed to address dating behavior, we did not consider restricting eligibility based on relationship status and did not intend to compare groups based on relationship status. Therefore, these exploratory analyses should be interpreted with caution as they are relatively underpowered. Zero-order correlations in Table 2 revealed a significant association between being in a relationship and having higher judge- and self-rated physical attractiveness, significantly lower anxious and avoidant attachments, and a trend toward lower FOBS. Therefore, we ran an exploratory test of relationship status as a moderator of the association between FOBS and judge-rated attractiveness. We conducted a hierarchical regression model with FOBS, anxious attachment, avoidant attachment, relationship status, gender, and smiling at Step 1 and two-way interactions between FOBS and relationship status, anxious attachment and relationship status, and avoidant attachment and relationship status in Step 2.

Results and discussion

Correlations among variables in Studies 1 and 2, respectively, are presented in Table 2.[4] Importantly, the bivariate correlation between FOBS and judge-rated physical

attractiveness was not significant. Likewise, the Bayesian hypothesis test of the correlation yielded a Bayes factor of 11.54, reflecting strong evidence for the null hypothesis (no association between variables).

As Table 3 presents, results of the first hierarchical regression analysis revealed that there was a significant effect of smiling in the photo on judge-rated physical attractiveness. Participants who smiled ($M = 4.79$ and $SE = .12$) were rated as more attractive than participants who did not smile ($M = 3.71$ and $SE = .28$). There was also a main effect of anxious attachment, such that greater anxious attachment was associated with lower attractiveness ratings from the judges. While this effect is contrary to prior findings on anxious attachment and judge-rated physical attractiveness (Tidwell et al., 1996), it does not replicate in Study 2, so it should be interpreted with caution. Importantly, in this model, neither the main effect of FOBS nor the interaction between FOBS and participant gender significantly predicted judge-rated attractiveness.

With regard to self-rated physical attractiveness, the correlation presented in Table 2 suggests that FOBS was marginally negatively associated with self-rated attractiveness. That is, those who were more fearful tended to view themselves as marginally less attractive. As seen in Table 3, the hierarchical regression model revealed that stronger anxious attachment predicted marginally lower perceptions of one's own physical attractiveness (supporting other research on anxious attachment and lower body image; Cash, Thériault, & Annis, 2004; Davis & Vernon, 2002), while FOBS did not predict self-rated physical attractiveness. There was also no effect of gender or an interaction between FOBS and gender. However, there was a significant interaction between anxious attachment and gender, such that anxious attachment predicted lower self-rated attractiveness ratings only for men, $\beta = -.44$, $p = .002$, $CI_{95\%}$ [−1.088, −.252], but not for women, $\beta = .003$, $p = .98$, $CI_{95\%}$ [−.412, .420]. There was also a significant interaction between avoidant attachment and gender, such that avoidant attachment predicted greater self-rated attractiveness for men, $\beta = .33$, $p = .04$, $CI_{95\%}$ [.014, 1.004], but predicted lower self-rated attractiveness for women, $\beta = -.23$, $p = .048$, $CI_{95\%}$ [−.689, −.004]. Once again, these interactions between anxious or avoidant attachment and participant gender did not replicate in Study 2, so they should be interpreted with caution.

Finally, the exploratory analysis of the possible role of relationship status on the association between FOBS and judge- and self-rated physical attractiveness revealed no significant moderations by relationship status (FOBS × Relationship Status: $\beta = .06$, $p = .60$; Anxious Attachment × Relationship Status: $\beta = .02$, $p = .87$; and Avoidant Attachment × Relationship Status: $\beta = -.03$, $p = .78$).

Taken together, the results of Study 1 suggest that FOBS does not appear to be associated with judge-rated physical attractiveness. Furthermore, FOBS was only marginally associated with lower self-perceptions of attractiveness at the bivariate level and was not associated with self-rated attractiveness in the regression analyses controlling for anxious and avoidant attachments, gender, and smiling. However, an important limitation of Study 1 is that it involved a nonromantic context, such that participants were students approached around campus during final exams and may not have been engaging in the strategic self-presentation, such as grooming, that both men and women typically prioritize in a dating context (Laner & Ventrone, 2000). Therefore, Study 2

explored the association between FOBS and physical attractiveness in a more explicit romantic context. Conducting our study at an actual speed-dating event allowed us to explore whether FOBS would predict physical attractiveness ratings when participants were actively engaged in a mate selection context and thus perhaps motivated to increase or accentuate their attractiveness. Speed dating is also an ideal context within which to explore our research questions, because it provides an ecologically valid context in which to explore whether judge- or self-rated physical attractiveness accounts for actual dating behaviors among those with stronger FOBS.

Study 2

Method

Participants and procedure. We recruited participants from eight speed-dating events at two separate comic conventions in Toronto in 2013. Comic conventions are popular media-based gatherings for fan communities who enjoy comic books, anime, video games, and fantasy genres (Hill, 2017). These conventions are growing in popularity and often involve attendees dressing as fictional characters (Leshner & De La Garza, 2019). Attendees went on 13–15 3-min dates with participants of the opposite gender. Women remained seated while men rotated to the next date. All 226 attendees were invited to complete the study (222 agreed), and participants received a CAD$5 gift card if they completed a follow-up survey (not detailed here). We excluded four participants who did not complete the FOBS Scale. Additionally, because a key outcome of interest in Study 2 was actual speed-dating behavior, and because Study 1 revealed that relationship status was associated with judge- and self-rated attractiveness and revealed a trend with FOBS, we excluded all participants who did not identify as single (12 participants in exclusively dating relationships, 16 casually dating, 3 in open relationships, 2 who selected "other" and reported in open-ended response that they were "on a break" and "about to break up," and 3 who did not report relationship status).[5] We also excluded six participants who, in error, did not have photos taken or whose photos could not be accurately matched with their ID, and two participants whose costumes obstructed view of their face. As in Study 1, we also excluded three outliers greater than 3 *SD* below the mean on self-rated physical attractiveness. The final sample included 171 participants (89 men, 81 women, and 1 female-identifying transgender) aged 18–36 ($M = 22.63$ and $SD = 3.78$). Most participants ($n = 129$) had registered for the speed-dating event in advance of the convention, whereas the remainder joined on-site. Nearly half of participants ($n = 80$) were wearing some form of costume. Two raters coded photos for whether or not participants were wearing costumes. Cohen's κ was .86 and disagreements were resolved by the second author. While it is common to dress in costumes at comic conventions, speed-dating research at such venues found that costumes did not affect males' attraction to female confederates (Callewaert & Beyer, 2016). A sensitivity analysis in G*Power indicated that we had 80% power to detect a correlation (ρ) of .21 (Table 2) and a relatively small effect size of Cohen's f^2 of .046 for a regression coefficient in a model with eight predictors (Table 3).

Measures. As part of a larger survey, prior to the speed-dating event, participants reported their FOBS (Spielmann, MacDonald, et al., 2013), anxious and avoidant attachments (ECR short form; Wei, Russell, Mallinckrodt, & Vogel, 2007), and self-rated physical attractiveness on a single item which asked, "Please rate your own physical attractiveness relative to the average person of your gender," on a scale from 1 (*not at all attractive*) to 10 (*very attractive*). During the event, photographs were taken of each participant while they were seated. In order to obtain a measure of judge-rated physical attractiveness, 28 raters (16 women and 12 men) evaluated the photos on a scale from 1 (*not at all attractive*) to 9 (*very attractive*).[6] Two raters recorded whether each participant was smiling in their photo. Cohen's κ was .85 and disagreements were resolved by the second author ($N_{yes} = 105$ and $N_{no} = 66$).

Following the speed-dating event, participants selected fellow speed daters whose contact information they would like. We used this information to create a measure of *selectivity* based on the proportion of dates for which the participant did *not* request contact information (where higher values reflect *greater* selectivity) and *desirability* based on the proportion of speed daters who requested contact information for the participant (where higher numbers reflect greater desirability to others). We used proportion of daters versus raw numbers to account for differences in the total number of dates the participants went on at different events (13–15).

Data analyses

Analyses in Study 2 followed the same analysis plan as Study 1, with the addition of the following analyses of speed-dating outcomes. We conducted four hierarchical regression models for selectivity and desirability, respectively (see Table 4). Model 1 included all the same predictors as the previous hierarchical regression models, with the exception of the smiling variable, which was relevant only for attractiveness ratings. Model 2 included judge-rated attractiveness as a covariate in Step 1, and Model 3 included self-rated attractiveness as a covariate in Step 1. Model 4 included judge- and self-rated attractiveness as simultaneous covariates in Step 1 to explore the unique predictive effects of each on selectivity and desirability during speed dating.

Results and discussion

As a first test of the association between FOBS and judge-rated attractiveness, the correlation in Table 2 was not significant. Likewise, the Bayesian inference on the correlation indicated a Bayes factor of 4.60, reflecting moderate evidence for the null hypothesis. We next conducted the same hierarchical models as Study 1 (see Table 3). When judge-rated attractiveness was the dependent variable, there were no significant main effects or interactions. In other words, FOBS was again not predictive of judge-rated attractiveness.

As can be seen in the far right panel of Table 3, we next tested self-perceptions of attractiveness as the dependent variable. While stronger FOBS was associated with lower self-rated attractiveness at the bivariate level in Table 2, this association was not significant in the hierarchical regression. Anxious attachment was also marginally

Table 4. Results of hierarchical linear regression models in Study 2 predicting selectivity and desirability during speed dating.

	Selectivity			Desirability		
	β	p	$CI_{95\%}$	β	p	$CI_{95\%}$
Model 1						
Step 1						
FOBS	−.20	.02	[−.093, −.010]	−.01	.88	[−.040, .034]
Anxious attachment	.04	.62	[−.031, .052]	−.14	.09	[−.069, .005]
Avoidant attachment	.13	.08	[−.005, .073]	.01	.90	[−.032, .037]
Gender	.26	.001	[.027, .105]	.32	<.001	[.037, .106]
Step 2						
FOBS × Gender	−.15	.08	[−.078, .005]	.11	.18	[−.012, .061]
Anxious Attachment × Gender	.13	.14	[−.010, .074]	.11	.17	[−.011, .062]
Avoidant Attachment × Gender	−.03	.74	[−.046, .032]	.04	.57	[−.024, .044]
Model 2						
Step 1						
FOBS	−.19	.02	[−.090, −.008]	.02	.85	[−.031, .038]
Anxious attachment	.06	.50	[−.027, .055]	−.11	.17	[−.058, .010]
Avoidant attachment	.12	.11	[−.007, .070]	−.02	.83	[−.036, .028]
Gender	.24	.002	[.022, .099]	.27	<.001	[.028, .092]
Judge-rated physical attractiveness	.15	.04	[.002, .075]	.37	<.001	[.052, .113]
Step 2						
FOBS × Gender	−.14	.09	[.077, .006]	.13	.10	[−.006, .062]
Anxious Attachment × Gender	.11	.21	[−.015, .069]	.07	.41	[−.020, .049]
Avoidant Attachment × Gender	−.03	.69	[−.047, .031]	.03	.67	[−.025, .039]
Model 3						
Step 1						
FOBS	−.19	.02	[−.090, −.007]	.02	.80	[−.030, .040]
Anxious attachment	.06	.45	[−.026, .058]	−.09	.29	[−.055, .016]
Avoidant attachment	.14	.07	[−.003, .074]	.02	.77	[−.028, .037]
Gender	.27	.001	[.029, .106]	.34	<.001	[.042, .107]
Self-rated physical attractiveness	.13	.09	[−.005, .069]	.32	<.001	[.041, .103]
Step 2						
FOBS × Gender	−.15	.07	[−.079, .003]	.10	.21	[−.012, .056]
Anxious Attachment × Gender	.13	.11	[−.008, .075]	.13	.10	[−.005, .064]
Avoidant Attachment × Gender	−.02	.78	[−.044, .033]	.05	.46	[−.020, .044]
Model 4						
Step 1						
FOBS	−.19	.03	[−.089, −.006]	.03	.68	[−.026, .040]
Anxious attachment	.07	.42	[−.025, .059]	−.08	.32	[−.051, .017]
Avoidant attachment	.13	.10	[−.006, .072]	−.003	.97	[−.032, .031]
Gender	.25	.002	[.024, .101]	.29	<.001	[.033, .096]
Judge-rated physical attractiveness	.12	.12	[−.008, .070]	.29	<.001	[.034, .097]
Self-rated physical attractiveness	.08	.29	[−018, .061]	.22	.003	[.017, .081]

(continued)

Table 4. (continued)

	Selectivity			Desirability		
	β	p	$CI_{95\%}$	β	p	$CI_{95\%}$
Step 2						
FOBS × Gender	−.14	.08	[−.078, .004]	.11	.13	[−.008, .058]
Anxious Attachment × Gender	.12	.17	[−.013, .071]	.12	.25	[−.014, .054]
Avoidant Attachment × Gender	−.03	.73	[−.046, .032]	.04	.56	[−.022, .040]

Note. FOBS = fear of being single; CI = confidence interval.

negatively associated with self-rated attractiveness in the regression, suggesting that more anxiously attached individuals tended to have lower self-perceptions of their attractiveness.

Next, we examined associations with speed-dating outcomes. Predicting selectivity in Model 1 (see Table 4), results revealed that those with stronger FOBS were less selective about their desired matches. Furthermore, a marginally significant interaction between FOBS and gender suggested that among those with weaker FOBS (−1 *SD*), women were significantly more selective than men, $\beta = .40$, $p < .001$. However, among those with stronger FOBS (+1 *SD*), men and women were equally (un)selective, $\beta = .11$, $p = .33$. Next, predicting desirability in Model 1, results revealed that FOBS was not associated with the proportion of daters who requested matches with the participant. Both of these findings directly replicate prior research on the dynamics of FOBS during speed dating using a novel sample of speed daters, such that those who fear being single are less selective, but not less desirable to others (Spielmann, MacDonald, et al., 2013). An important extension to prior findings is that the effects of FOBS on selectivity and desirability held even when accounting for judge-rated attractiveness (Model 2), self-rated attractiveness (Model 3), and both judge- and self-rated attractiveness simultaneously (Model 4), at least when assessed with our single-item measure of attractiveness. In other words, although those with stronger FOBS were less selective while speed dating, this was not explained by lower self- or other-rated physical attractiveness.

Table 4 also reveals significant main effects of gender in each model, such that women were more selective than men and were selected more frequently by fellow speed daters (as is typically the case in speed-dating events, especially where men rotate from date-to-date; Finkel and Eastwick (2009), even when accounting for their judge- and self-rated physical attractiveness. There was also a significant effect of judge-rated attractiveness predicting selectivity in Model 2, such that more physically attractive participants were more selective during the speed-dating event. This same pattern of results was marginally significant in Model 3 for self-perceptions of physical attractiveness, suggesting that those who perceived themselves as less attractive were marginally less selective during the speed-dating event. Furthermore, in Models 2, 3, and 4, there were significant effects of judge- and self-rated physical attractiveness predicting desirability to fellow daters, such that participants were more often selected by others when judges had rated them as more attractive (Model 2) and when they had higher self-perceived attractiveness (Model 3). Interestingly, when entered simultaneously

(Model 4), both remained significant predictors of desirability. Therefore, the effect of self-rated attractiveness on desirability is not merely an artifact of the strong correlation between judge- and self-rated attractiveness, but rather there appears to be something appealing to fellow daters about having confidence in one's own attractiveness above and beyond judge-rated physical attractiveness.

Finally, while not all models in Table 4 directly replicated previous research showing that anxious attachment predicts lower desirability during speed dating (McClure et al., 2010), there was a marginal effect in Model 1, and the bivariate correlation between anxious attachment and lower desirability—which maps more closely to McClure et al.'s analyses—was also marginally significant (see Table 2).

General discussion

The results across studies suggested that FOBS was not significantly associated with lower evaluations of physical attractiveness from others. Findings were mixed, however, with regard to the association between FOBS and self-perceptions of one's own physical attractiveness. They were negatively correlated in both studies (marginal for Study 1). However, neither association was significant when accounting for covariates in the regression models. Rather, the regression models suggested that self-rated physical attractiveness was more strongly driven by anxious attachment, supporting prior research on negative self-perceptions of attractiveness among those who are more anxiously attached (Bylsma, Cozzarelli, & Sumer, 1997).

The nonsignificant association between FOBS and others' ratings of attractiveness suggests that FOBS likely does not develop due to repeated experiences of unrequited romantic interest based on physical attractiveness. While we do not currently know the antecedents of FOBS, the causes are likely multifaceted, and we should not presume that any one predictor would account for the majority of variance in FOBS. While the present studies were appropriately powered to detect relatively small effects, in the absence of prior research providing an accurate estimate of effect size, it is possible that null results between FOBS and physical attractiveness in the present research were due to insufficient power to detect the effect. One must always be cautious about the risk of committing a Type II error when interpreting null results.

Above and beyond the tested associations between FOBS and judge- or self-rated attractiveness, the present research suggests these associations do not explain the relationship decisions made by those who fear being single during speed dating. One strength of the present research was the ecological validity of studying FOBS within an actual speed-dating event, allowing us to explore real-world dating decisions. Specifically, the present research replicated previous findings from Spielmann, MacDonald, et al. (2013) that those with stronger FOBS tend to be less selective, but not differentially desired by others, during speed dating. However, the present work extends previous research by suggesting that the lower selectivity of those with stronger FOBS is not explained by judge- or self-rated attractiveness. This is important because it suggests that those with stronger FOBS are not necessarily settling for less during mate selection because they assume that they cannot get a mate due to low attractiveness. These findings suggest there are likely other factors influencing selectivity. While we cannot

test alternative mechanisms with the present data, it is possible that those with stronger FOBS perceive themselves (either accurately or inaccurately) as lower in mate value on other important dimensions, such as personality, sociability, earning potential/resources, social status, or fertility (Shackelford, Schmitt, & Buss, 2005). Another possibility is that those with greater FOBS may be more vulnerable to internalizing prejudicial societal messages about singles (DePaulo & Morris, 2006), which may make the goal of attracting a partner—*any* partner—more chronically salient. Future research would benefit from thorough qualitative exploration of the experiences and lay theories of those who fear being single, such as why they believe such fears have developed, how they envision their romantic future unfolding, what scares them about the prospect of remaining single long term, and why they opt to engage in less selective dating strategies. Such research would be foundational for future empirical tests of the mechanisms promoting settling for less during mate selection among those who fear being single.

The generalization of the present results may be limited due to constraints imposed by certain methodological choices made by the researchers. First, judges' physical attractiveness ratings were generally constrained to facial attractiveness. Although facial judgments are stronger predictors of overall physical attractiveness than body judgments (Currie & Little, 2009), given the null effects of the present study, follow-up research might benefit from also assessing physical features such as body mass (Koscinski, 2013) or waist-to-hip ratio (Singh, 1993). Additionally, it is important to consider that we asked judges to rate attractiveness on a broad, single-item measure (e.g., How physically attractive would you rate this person?). The reliability of single-item measures is unknown, and while judge-rated attractiveness had the benefit of multiple raters, our measure of self-rated attractiveness did not. Future researchers should consider using multiple items to assess physical attractiveness, particularly if attractiveness is a central focus of their study. Additionally, we cannot speak to specific qualities of attractiveness that judges may have been evaluating, such as specific desirable facial features like prominent cheekbones or large eyes, or appealing choices in grooming/adornment (Cunningham, Barbee, & Pike, 1990). We also ambiguously defined smiling in the present research, with coders receiving no instruction on classifying a smile. While interrater agreements in perceptions of smiling were high, a more thorough analysis of genuine Duchenne smiles or specific muscle movements coded using the Facial Action Coding System (Ekman & Friesen, 1978) might more reliably speak to the relative attractiveness of our smiling targets.

Another important consideration is that stronger FOBS may predict more frequent engagement in appearance-enhancing practices, similar to findings documented for anxiously attached individuals (e.g., Davis & Vernon, 2002), since motivations to enhance appearance are strongly affected by desires to attract and retain romantic partners (Buss & Shackelford, 1997; Haselton, Mortezaie, Pillsworth, Bleske-Rechek, & Frederick, 2007). While participants in Study 1 did not anticipate having their photograph taken that day, most participants in Study 2 anticipated participating in the speed-dating event at the convention. Although results generally replicated in the romantic and nonromantic contexts in the present research, it is possible that those who fear being single regularly prioritize physical appearance more than others due to a chronic focus on attracting and retaining romantic partners. If that is the case, it could be that true

differences in attractiveness associated with FOBS are more prominent than documented here. Future research should explore how FOBS promotes appearance enhancement and prioritizing physical appearance as a domain of self-worth to explore how this affects judge-rated attractiveness ratings.

Finally, an important consideration in the generalization of the present results was our choice of a comic convention as a speed-dating venue. Fans of comic and fantasy media are often stereotyped as "the geek, the nerd, the dweeb, the loser" (Bennett & Booth, 2016, p. 1). However, scholars argue that these characterizations are not necessarily accurate: "Fans are a compelling, ever-changing audience with multiple layers that are often more dimensional than the overarching and limited ways they have been historically represented in media and popular culture" (Bennett & Booth, 2016, p. 1). It is worth noting, however, that—as Table 1 presents—the convention sample did have lower judge-rated attractiveness compared to students and had marginally greater FOBS. While we did not collect broader demographics of this group to speak to the validity of fan stereotypes, testing the links among FOBS, physical attractiveness, and less selective dating strategies may be especially relevant within a group with more limited range in attractiveness. An additional consideration of examining speed-dating behavior at a convention is that we cannot be certain that a desire for a date's contact information was primarily a signal of romantic interest, and not also an interest in fostering friendship or a business relationship over a shared interest. While arguably any speed-dating study may have the limitation that matches signal general liking and not exclusively romantic interest, the risk of this may increase as attendees gather with more predetermined shared interests. However, even if expressions of interest in Study 2 were not exclusively romantic, it is still noteworthy that those with stronger FOBS expressed their interest less selectively. Future research would benefit from exploring whether FOBS predicts less selective strategies more generally, such as with friendship or roommate selection, or whether this is limited to romantic contexts.

In conclusion, it remains unclear exactly why some individuals experience heightened FOBS and why they settle for less during mate selection. The present findings suggest that FOBS is not likely rooted in less desirable physical features or objective difficulty in attracting a mate. Future research should continue to explore the antecedents and psychological mechanisms associated with FOBS and unhealthy relationship decisions.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship and/or publication of this article: Funding for this research was provided by Insight Grants from the Social Sciences and Humanities Research Council of Canada awarded to Geoff MacDonald and Emily A. Impett.

Open research statement

As part of International Association for Relationship Research's encouragement of open research practices, the authors have provided the following information: This research was not preregistered. The data used in the research are available. The data can be obtained by emailing:

spielmann@wayne.edu. The materials used in the research are available. The materials can be obtained by emailing: spielmann@wayne.edu.

Notes

1. See https://www.ibm.com/support/knowledgecenter/en/SSLVMB_sub/statistics_mainhelp_ddita/spss/advanced/idh_bayesian_pearson.html for more information.
2. For exploratory purposes, we also tested interaction terms between fear of being single (FOBS) and attachment anxiety and avoidance, respectively. In Study 1, the interactions predicting neither self-rated attractiveness (FOBS × anxiety: $\beta = .001$, $p = .99$ and FOBS × avoidance: $\beta = .06$, $p = .49$) nor judge-rated attractiveness (FOBS × anxiety: $\beta = -.14$, $p = .12$ and FOBS × avoidance: $\beta = .04$, $p = .65$) were significant. In Study 2, the interactions were similarly nonsignificant for judge-rated attractiveness (FOBS × anxiety: $\beta = -.30$, $p = .69$ and FOBS × avoidance: $\beta = .09$, $p = .22$), speed-dating selectivity (FOBS × anxiety: $\beta = -.01$, $p = .87$ and FOBS × avoidance: $\beta = -.03$, $p = .67$), and speed-dating desirability (FOBS × anxiety: $\beta = .06$, $p = .45$ and FOBS × avoidance: $\beta = .08$, $p = .29$). For self-rated attractiveness, the interaction between FOBS and anxiety was nonsignificant ($\beta = .04$, $p = .56$), but the interaction between FOBS and avoidance was marginally significant ($\beta = .15$, $p = .06$). Simple effects tests of this interaction suggested that while FOBS negatively predicted self-rated attractiveness at 1 *SD* below the mean of avoidance ($\beta = -.23$, $p = .04$), this effect was buffered at 1 *SD* above the mean of avoidance ($\beta = .04$, $p = .72$). However, this interaction should be interpreted with caution as it did not replicate in Study 1.
3. Note that moderation results are the same if those who identify as "casually dating" are grouped with singles.
4. For exploratory purposes, correlations in Studies 1 and 2 separated by gender can be found at https://osf.io/r8tew/. While results remain largely similar as when aggregated across gender, it is important to consider that these samples separated by gender are less powerful to detect significant associations.
5. Note that compared to traditional speed-dating events, the convenience and social aspect of participating in this speed-dating event at a comic convention may have encouraged more participants to join even if not currently single. We did also run analyses excluding only those who reported being in an exclusively dating relationship (but retaining those who were casually dating, in an open relationship, other, or unreported), and while results generally remained the same, there were significantly negative bivariate correlations between fear of being single (FOBS) and judge-rated attractiveness, $r(194) = -.16$, $p = .03$, and self-rated attractiveness, $r(194) = -.15$, $p = .04$. However, FOBS was not significantly associated with either judge-rated attractiveness, $\beta = -.07$, $p = .39$, or self-rated attractiveness, $\beta = -.10$, $p = .27$, in the hierarchical regression accounting for anxious and avoidant attachments, smiling in the photo, and gender.
6. In both studies, we conducted exploratory factor analyses to identify raters whose ratings did not load strongly ($\geq .60$) onto the same factor as other raters. No raters were excluded for this reason in Study 1, while six raters (two women and four men) were excluded in Study 2.

References

Bennett, L., & Booth, P. (2016). *Seeing fans: Representations of fandom in media and popular culture*. New York, NY: Bloomsbury Publishing.

Brewer, G., Archer, J., & Manning, J. (2007). Physical attractiveness: The objective ornament and subjective self-ratings. *Journal of Evolutionary Psychology*, *5*, 29–38.

Buote, V. M. (2010). *Beauty and belonging: How appearance self-appraisals affect perceived relational value, relationship standards and desire for interpersonal contact*. Unpublished dissertation, Wilfrid Laurier University, Waterloo, Canada.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, *12*, 1–49.

Buss, D. M., & Shackelford, T. K. (1997). From vigilance to violence: Mate retention tactics in married couples. *Journal of Personality and Social Psychology*, *72*, 346–361.

Buss, D. M., & Shackelford, T. K. (2008). Attractive women want it all: Good genes, economic investment, parenting proclivities, and emotional commitment. *Evolutionary Psychology*, *6*, 134–146.

Bylsma, W. H., Cozzarelli, C., & Sumer, N. (1997). Relation between adult attachment styles and global self-esteem. *Basic and Applied Social Psychology*, *19*, 1–16.

Callewaert, Y. F. R., & Beyer, S. (2016). Men's behavior towards women as a function of women's costume attire (cosplay): An experimental investigation of speed dating at a popular culture convention. *Proceedings of the National Conference on Undergraduate Research (NCUR*) 2016, Asheville, NC.

Cash, T. F., Thériault, J., & Annis, N. M. (2004). Body image in an interpersonal context: Adult attachment, fear of intimacy, and social anxiety. *Journal of Social and Clinical Psychology*, *23*, 89–103.

Cunningham, M. R., Barbee, A. P., & Pike, C. L. (1990). What do women want? Facialmetric assessment of multiple motives in the perception of male facial physical attractiveness. *Journal of Personality and Social Psychology*, *59*, 61–72.

Currie, T. E., & Little, A. C. (2009). The relative importance of the face and body in judgments of human physical attractiveness. *Evolution and Human Behavior*, *30*, 409–416.

Davis, D., & Vernon, M. L. (2002). Sculpting the body beautiful: Attachment style, neuroticism, and use of cosmetic surgeries. *Sex Roles*, *47*, 129–138.

DePaulo, B. M., & Morris, W. L. (2006). The unrecognized stereotyping and discrimination against singles. *Current Directions in Psychological Science*, *15*, 251–254.

Downey, G., & Feldman, S. I. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology*, *70*, 1327–1343.

Eastwick, P. W., & Finkel, E. J. (2008). Sex differences in mate preferences revisited: Do people know what they initially desire in a romantic partner? *Journal of Personality and Social Psychology*, *94*, 245–264.

Eastwick, P. W., Luchies, L. B., Finkel, E. J., & Hunt, L. L. (2014). The predictive validity of ideal partner preferences: A review and meta-analysis. *Psychological Bulletin*, *140*, 623–665.

Ekman, P., & Friesen, W. V. (1978). *Facial action coding system*. Palo Alto, CA: Consulting Psychologist Press.

Elliot, A. J., Gable, S. L., & Mapes, R. R. (2006). Approach and avoidance motivation in the social domain. *Personality and Social Psychology Bulletin*, *32*, 378–391.

Enders, C. K. (2001). A primer on maximum likelihood algorithms available for use with missing data. *Structural Equation Modeling: A Multidisciplinary Journal*, *8*, 128–141.

Feingold, A. (1988). Matching for attractiveness in romantic partners and same-sex friends: A meta-analysis and theoretical critique. *Psychological Bulletin*, *104*, 226–235.

Feingold, A. (1990). Gender differences in effects of physical attractiveness on romantic attraction: A comparison across five research paradigms. *Journal of Personality and Social Psychology*, *59*, 981–993.

Feingold, A. (1992). Good-looking people are not what we think. *Psychological Bulletin*, *111*, 304–341.

Finkel, E. J., & Eastwick, P. W. (2009). Arbitrary social norms influence sex differences in romantic selectivity. *Psychological Science*, *20*, 1290–1295.

Fiore, A. T., Taylor, L. S., Mendelsohn, G. A., & Hearst, M. (2008). Assessing attractiveness in online dating profiles. In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 797–806). Florence, Italy. doi:10.1145/1357054.1357181.

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, *78*, 350–365.

Haselton, M. G., Mortezaie, M., Pillsworth, E. G., Bleske-Rechek, A., & Frederick, D. A. (2007). Ovulatory shifts in human female ornamentation: Near ovulation, women dress to impress. *Hormones and Behavior*, *51*, 40–45.

Hehman, E., Xie, S. Y., Ofosu, E. K., & Nespoli, G. A. (2018, February 19). Assessing the point at which averages are stable: A tool illustrated in the context of person perception. Retrieved from https://doi.org/10.31234/osf.io/2n6jq

Hill, N. (2017). *Embodying cosplay: Fandom communities in the USA*. Unpublished thesis, Georgia State University, Atlanta, GA.

Hitsch, G. J., Hortaçsu, A., & Ariely, D. (2010). What makes you click? Mate preferences in online dating. *Quantitative Marketing and Economics*, *8*, 393–427.

Jeffreys, H. (1961). *Theory of probability*. Oxford, England: Oxford University Press.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York, NY: Guilford Press.

Kavanagh, P. S., Robins, S. C., & Ellis, B. J. (2010). The mating sociometer: A regulatory mechanism for mating aspirations. *Journal of Personality and Social Psychology*, *99*, 120–132.

Koscinski, K. (2013). Attractiveness of women's body: Body mass index, waist-to-hip ratio, and their relative importance. *Behavioral Ecology*, *24*, 914–925.

Laner, M. R., & Ventrone, N. A. (2000). Dating scripts revisited. *Journal of Family Issues*, *21*, 488–500.

Leary, M. R., & Springer, C. A. (2001). Hurt feelings: The neglected emotion. In R. M. Kowalski (Ed.), *Behaving badly: Aversive behaviors in interpersonal relationships* (pp. 151–175). Washington, DC: American Psychological Association.

Lee, L., Loewenstein, G., Ariely, D., Hong, J., & Young, J. (2008). If I'm not hot, are you hot or not? Physical-attractiveness evaluations and dating preferences as a function of one's own attractiveness. *Psychological Science*, *19*, 669–677.

Leshner, C. E., & De La Garza, S. A. (2019). Dress for success: How cosplay plays a role in relationship dynamics. *Journal of Interpersonal Relations, Intergroup Relations and Identity*, *12*, 92–100.

Luo, S., & Zhang, G. (2009). What leads to romantic attraction: Similarity, reciprocity, security, or beauty? Evidence from a speed-dating study. *Journal of Personality*, *77*, 933–964.

McClure, M. J., & Lydon, J. E. (2014). Anxiety doesn't become you: How attachment anxiety compromises relational opportunities. *Journal of Personality and Social Psychology*, *106*, 89–111.

McClure, M. J., Lydon, J. E., Baccus, J. R., & Baldwin, M. W. (2010). A signal detection analysis of chronic attachment anxiety at speed dating: Being unpopular is only the first part of the problem. *Personality and Social Psychology Bulletin*, *36*, 1024–1036.

Meltzer, A. L., McNulty, J. K., Jackson, G., & Karney, B. R. (2014). Sex differences in the implications of partner physical attractiveness for the trajectory of marital satisfaction. *Journal of Personality and Social Psychology*, *106*, 418–428.

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford.

Montoya, R. M. (2008). I'm hot, so I'd say you're not: The influence of objective physical attractiveness on mate selection. *Personality and Social Psychology Bulletin*, *34*, 1315–1331.

Poulsen, F. O., Holman, T. B., Busby, D. M., & Carroll, J. S. (2013). Physical attraction, attachment styles, and dating development. *Journal of Social and Personal Relationships*, *30*, 301–319.

Reis, H. T., Wilson, I. M., Monestere, C., Bernstein, S., Clark, K., Seidl, E., … Radoane, K. (1990). What is smiling is beautiful and good. *European Journal of Social Psychology*, *20*, 259–267.

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, *39*, 472–480.

Shackelford, T. K., Schmitt, D. P., & Buss, D. M. (2005). Universal dimensions of human mate preferences. *Personality and Individual Differences*, *39*, 447–458.

Shaw Taylor, L., Fiore, A. T., Mendelsohn, G. A., & Cheshire, C. (2011). "Out of my league": A real-world test of the matching hypothesis. *Personality and Social Psychology Bulletin*, *37*, 942–954.

Singh, D. (1993). Adaptive significance of female physical attractiveness: Role of waist-to-hip ratio. *Journal of Personality and Social Psychology*, *65*, 293–307.

Spielmann, S. S., & Cantarella, I. A. (2019). *Promotion and prevention states following fear of being single priming*. Unpublished data.

Spielmann, S. S., MacDonald, G., Joel, S., & Impett, E. A. (2016). Longing for ex-partners out of fear of being single. *Journal of Personality*, *84*, 799–808.

Spielmann, S. S., MacDonald, G., Maxwell, J. A., Joel, S., Peragine, D., Muise, A., & Impett, E. A. (2013). Settling for less out of fear of being single. *Journal of Personality and Social Psychology*, *105*, 1049–1073.

Spielmann, S. S., Maxwell, J. A., MacDonald, G., & Baratta, P. L. (2013). Don't get your hopes up: Avoidantly attached individuals perceive lower social reward when there is potential for intimacy. *Personality and Social Psychology Bulletin*, *39*, 219–236.

Tidwell, M. C. O., Reis, H. T., & Shaver, P. R. (1996). Attachment, attractiveness, and social interaction: A diary study. *Journal of Personality and Social Psychology*, *71*, 729–745.

Timmermans, E., Coenen, L., & Van den Bulck, J. (2019). The Bridget Jones effect: The relationship between exposure to romantic media contents and fear of being single among

emerging adults. *Psychology of Popular Media Culture*, *8*, 159–169. doi:http://dx.doi.org/10.1037/ppm0000175.

Walster, E., Aronson, V., Abrahams, D., & Rottmann, L. (1966). Importance of physical attractiveness in dating behavior. *Journal of Personality and Social Psychology*, *4*, 508–516.

Weeden, J., & Sabini, J. (2007). Subjective and objective measures of attractiveness and their relation to sexual behavior and sexual attitudes in university students. *Archives of Sexual Behavior*, *36*, 79–88.

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

Wiederman, M. W., & Hurst, S. R. (1998). Body size, physical attractiveness, and body image among young adult women: Relationships to sexual experience and sexual esteem. *The Journal of Sex Research*, *35*, 272–281.

Yzerbyt, V. Y., Muller, D., & Judd, C. M. (2004). Adjusting researchers' approach to adjustment: On the use of covariates when testing interactions. *Journal of Experimental Social Psychology*, *40*, 424–431.