

Known by the company she keeps: Women's friendship preferences influence interpersonal evaluations

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ABSTRACT

The current research examined the factors that impact women's preference for male (vs. female) friends and how these preferences, in turn, impact how women are evaluated by others. Studies 1–2 demonstrated that women who prefer male (vs. female) friends reported greater mating and sexual success, placed less trust in female friends, and held more hostility towards other women. Study 2 also showed that women's distrust of female friends is predicted by greater perceived aggression from female peers, which in turn predicted greater preference for male friends. Studies 3–5 revealed that women (but not men) reported greater distrust of female targets who prefer male (vs. female) friends. Study 5 further found that women's decreased trust in female targets who prefer male (vs. female) friends was predicted by expectations that these targets possess more socially undesirable traits, more hostility towards other women, and greater sexual unrestrictedness. Together, results suggest the relationship between women's friendship preferences and other women's evaluations may be bidirectional. Women's preference for male friends was predicted by perceived aggression from and lack of trust in other women, and other women distrusted and inferred negative traits about women who preferred male friends.

1. Introduction

According to an article in *The New Yorker*, “guy's girls,” a term used to refer to women who prefer to be friends with men, do not get along with other women, viewing them as “too sensitive and jealous” (Mercado, 2018). The feeling seems to be mutual; accounts drawn from popular culture suggest “guy's girls” are disliked and distrusted by other women (Baker, 2017; Reid, 2017). While past research has shown various attributes, such as personality (Altmann, 2020; Altmann & Roth, 2020; Laakasuo et al., 2017) and gender typicality (Altmann & Roth, 2020; Lenton & Webber, 2006; Reeder, 2003) are associated with women's preferences for male over female friends, no research has investigated how and why these preferences might relate to women's same-sex relationships. Moreover, no research has examined how women's friendship preferences influence others' evaluations. The current research was designed to address these gaps in the literature, testing the hypothesis that there is a bidirectional relationship between women's friendship preferences and hostility from other women. These results offer critical new insights into the costs and benefits of cross-sex sociality among women.

1.1. Women's same- and cross-sex friendships

Friendship has been a ubiquitous force in promoting survival and reproductive success, particularly for females. For example, research in nonhuman primates finds that female-female social bonds carry a multitude of benefits, including protection from male aggression (Tokuyama & Furuichi, 2016), greater control over resources (Scott & Lockard, 2007), and increased infant survival (Silk et al., 2009). In humans, female friendships likewise have important benefits for survival and reproductive success. For example, cooperative female social relationships increase reproductive output (Isler & van Schaik, 2012), offspring survival (Hrdy, 2009), and overall well-being (Knickmeyer et al., 2002). Indeed, women's same- (vs. cross-) sex friendships are characterized by greater quality and nurturance (Sapadin, 1988) and are perceived as closer, more supportive, and more reciprocal (Hand & Furman, 2009; Mehta & Smith, 2019; Parker & De Vries, 1993).

However, there are also several benefits afforded to women who form friendships with men (Bleske-Rechek & Buss, 2000). For instance, from an evolutionary perspective, a major benefit of cross-sex friendships is gaining access to potential long- and short-term romantic and

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sexual partners (Hand & Furman, 2009; Lemay & Wolf, 2016; Lewis et al., 2015). Consistent with this reasoning, cross-sex friendships increase around adolescence, when mating goals are activated (Poulin & Pedersen, 2007; Richards et al., 1998), and adolescents who have more cross-sex friendships become sexually active at a younger age than those who have fewer (Poulin, 2011). These findings suggest that women receive different benefits from forming friendships with men than they do from forming friendships with women. The degree to which women prefer male versus female friends is therefore expected to differ as a function of the value that women place on these different benefits (Lenton & Webber, 2006), which may be influenced by several factors both internal and external to the women doing the choosing.

Some of these factors include a woman's personality and interests. For example, women who spend time in male-typical activities (Booth & Hess, 1974; Kalmijn, 2002), rate themselves as more masculine (Lenton & Webber, 2006; Reeder, 2003), and are high in trait extraversion and openness to experience (Altmann, 2020; Altmann & Roth, 2020; Laakasuo et al., 2017) typically have more male friends than women lower on either of these dimensions.

Other research suggests there is an important developmental component to women's preference for male (vs. female) friendships. For example, those who are less liked by their same-sex peers in early adolescence tend to have more cross-sex friendships (Bukowski et al., 1999). Indeed, adolescents who have cross-sex friendships also report less social acceptance from their peers (Kuttler et al., 1999). While peer acceptance similarly impacts cross-sex friendship formation for both male and female adolescents, earlier pubertal timing in girls (but not boys) is associated with greater exclusion from peers (Carter et al., 2018) and a greater proportion of cross-sex friendships (Cavanagh, 2004; Poulin & Pedersen, 2007) relative to later-developing girls. Moreover, for earlier developing girls, popularity among their cross-sex peers is associated with greater risk of gossip and rumors among their peers (Reynolds & Juvonen, 2011). Further, for girls without same-sex friends, having cross-sex friends is associated with lower well-being (Bukowski et al., 1999) and self-worth (Barry et al., 2013). Together, this research suggests that cross-sex friendships may carry negative social consequences for girls, particularly setting them up for being the targets of indirect aggression by their peers. Thus, girls may gravitate towards cross-sex friendships to protect themselves from intrasexual aggression, a behavioral response also observed in nonhuman female primates (Kahlenberg et al., 2008).

While forming cross-sex friendships carries benefits for girls and women, it also appears to impose costs. As such, it is difficult to determine whether girls and women are drawn to cross-sex friendships because they are excluded and targeted by their same-sex peers, or whether girls and women are targeted by their same-sex peers because of their cross-sex friendships. It is likely that this relationship between women's friendship preferences and their social experiences with same-sex peers is bidirectional in nature.

1.2. Women's friendship preferences as a source of social information

Given that women receive different benefits from their friendships with men than they receive from their friendships with other women, people may use a woman's choice of friendship partners as a source of information about her motivations and behaviors. For example, research finds that cross-sex friendships are plagued by what is called the "audience challenge," where others perceive romantic or sexual intent in the friendship (O'Meara, 1989). The audience challenge is regularly seen in popular media, with over half of narratives about cross-sex friendships between celebrities containing speculations regarding potential romantic involvement (McDonnell & Mehta, 2016). Fear of cross-sex friendships being misinterpreted as sexual in nature is one of the most potent obstacles in the formation of cross-sex friendships (Elsesser & Peplau, 2006) and is particularly hard to avoid among those who spend a great deal of time around their cross-sex friends (Schoonover &

McEwan, 2014).

Importantly, the magnitude of the audience challenge depends on the sex of the perceiver. That is, compared to men, women are more likely to indicate that men and women can't be *just* friends (Felmlee et al., 2012) and further report believing that women in cross-sex friendships are secretly interested in their male friend (Hart et al., 2016). Their suspicion may not be unwarranted. Even though women report viewing their cross-sex friends as siblings (Reeder, 2017) and see sexual attraction as more of a cost than a benefit in cross-sex friendships (Bleske-Rechek & Buss, 2000), approximately half of heterosexual female college students report having been moderately attracted to (Bleske-Rechek et al., 2016) or having had sex with (Afifi & Faulkner, 2000) an alleged platonic male friend.

Together, this previous work suggests that cross-sex friendships are not always platonic, which may provide justification for women's suspicions of same-sex others involved in cross-sex friendships. Given that past research finds women dislike and distrust same-sex others who are perceived as sexually promiscuous (Arnocky et al., 2019; Reynolds et al., 2018; Vaillancourt & Sharma, 2011), suspicions regarding the sexual undercurrent of women's cross-sex friendships may be one reason why women distrust same-sex others who prefer male friends.

1.3. Present research

The current research sought to examine women's friendship preferences, what predicts them, and their impact on how women are perceived by other women. Guided by past research, we hypothesized that women's preference for male (vs. female) friends would be predicted by diminished trust in, and greater hostility towards, other women that develops in response to intrasexual competition. Specifically, we hypothesized women who prefer male friends would report greater mating success (e.g., higher number of sexual partners) and aggression from other women, promoting the development of attitudes that lead them to prefer cross-sex friendships. We further hypothesized that these friendship preferences become self-reinforcing, with women perceiving other women who prefer male friends as being less trustworthy than those who prefer female friends.

We tested our hypotheses across five studies. In Studies 1 and 2, we investigated whether women's preferences for male (vs. female) friends are associated with differences in a variety of mating- and friendship-relevant characteristics and the path by which women may come to prefer cross-sex friendships. Studies 3 and 4 built on these results, examining how women's friendship preferences influence how they are evaluated by women and men. Finally, Study 5 examined the pathway by which women come to distrust same-sex targets who prefer male (vs. female) friends. Please see supplementals for power analyses. Participants in all studies were recruited from a midsized private university in the southern U.S.; Study 1 additionally recruited participants from a midsized public university in the midwestern U.S.

2. Study 1

This initial study was an exploratory investigation into the ways that women who prefer male friends differ from women who prefer female friends, both in terms of their mating success and in their feelings towards other women. Specifically, Study 1 examined whether women who identified as getting along better with men (i.e., *guy's girls*) differ from women who identified as getting along better with women (i.e., *girl's girls*) on the following dimensions: trust in female friends, hostility towards other women, experience with intrasexual competition, history of unrestricted sexual behavior, self-perceived attractiveness, and self-perceived mating success. We predicted that, compared to women who identify as *girl's girls*, women who identify as *guy's girls* would report greater self-perceived attractiveness, mating success, and more sexually unrestricted behavior (e.g., having more past casual sex partners; Bleske-Rechek & Buss, 2001; Lewis et al., 2012; Salkičević, 2014).

Moreover, because attractive, sexually successful women tend to be the targets of intrasexual competition and aggression (Fink et al., 2014; Leenaars et al., 2008), women who self-identify as guy's girls (vs. girl's girls) are expected to place less trust in female friendships (Baumgarte & Nelson, 2009) and report being more intrasexually competitive with, and hostile towards, other women.

2.1. Method

2.1.1. Sample and procedure

Final data analytic sample consisted of 157 heterosexual female undergraduates ($M_{\text{age}} = 19.73$, $SD = 1.83$, age range: 18–32). Prior to data analysis, participants were excluded for failing attention filters ($n = 29$) or reporting a non-heterosexual sexual orientation ($n = 16$).

This study utilized a one-way, between-subjects (identification as a guy's girl vs. girl's girl) design. Participants accessed and completed the study online. After consenting to participate, participants completed a battery of measures assessing their female-friendship and mating-relevant characteristics (described in the supplementals). The predictor variable was self-identification as a guy's girl or girl's girl (i.e., "Do you consider yourself a 'guy's girl' [a girl who gets along with guys better] or a 'girl's girl' [a girl who gets along with girls better]?"). Dependent variables included self-perceived attractiveness, history of unrestricted sexual behavior (behavior subscale of the Sociosexual Orientation Inventory-Revised (Penke, 2011)), self-perceived mating success (Landolt et al., 1995), trust in female friends (adapted from the safety subscale of the Friendship Quality Scale (Thien et al., 2012)), intrasexual competitiveness (Buunk & Fisher, 2009), and hostility towards women (Lonsway & Fitzgerald, 1995). After completing these measures, participants responded to standard demographic items and were debriefed.

2.2. Results and discussion

To test our predictions, we conducted a series of independent samples *t*-tests, with participants' self-identification as a guy's girl (vs. girl's girl) as the predictor. See Table 1 for descriptive statistics. Consistent with our hypotheses, women who self-identify as guy's girls reported more unrestricted sexual behavior ($t[155] = -2.34$, $p = .021$, $d = 0.37$), higher self-perceived mating success ($t[155] = -3.90$, $p \leq .001$, $d = 0.62$), and higher self-perceived attractiveness ($t[155] = -2.45$, $p = .016$, $d = 0.40$) than women who identify as girl's girls. Results additionally revealed that women who identify as guy's girls placed less trust in their female friends ($t[155] = 3.25$, $p = .001$, $d = 0.52$) and reported more hostility towards other women than those who identify as girl's girls, $t(155) = -2.11$, $p = .037$, $d = 0.35$. Contrary to predictions, intrasexual competitiveness did not differ based on women's self-identification as guy's girls or girl's girls ($p = .906$).

These results provide important insight into some of the key differences between women who prefer male and female friends. In particular,

Table 1
Study 1 descriptive statistics.

	Guy's girl ($N = 80$)		Girl's girl ($N = 77$)	
	M	SD	M	SD
SOI-behavior*	2.57	1.69	1.99	1.43
Self-perceived mating success***	4.93	1.26	4.12	1.36
Self-perceived attractiveness*	4.53	1.23	4.05	1.17
Trust in female friends***	4.30	1.28	4.91	1.07
Hostility towards women*	3.65	1.08	3.29	1.00
Intrasexual competition	2.77	1.14	2.75	0.95

Note. SOI-Behavior measured via 9-point scales; all other variables measured via 7-point scales.

*** $p \leq .001$.

* $p \leq .05$.

women who self-identify as guy's girls reported greater mating success and higher attractiveness than women who self-identify as girl's girls. Results also revealed that women who self-identify as guy's girls reported having less trust in, and greater hostility towards, women than do women who self-identify as girl's girls. However, results further showed that women's tendency to view same-sex others competitively did not differ based on their self-identification as a guy's girl or a girl's girl. This raises questions regarding why women who self-identify as guy's girls report greater hostility towards same-sex others and place less trust in their same-sex peers. One possibility is that women who prefer male friends are more likely to receive aggression from their same-sex peers than are women who prefer female friends.

3. Study 2

Study 2 was designed to conceptually replicate and extend the results of Study 1, examining the path by which women who prefer male friends develop distrust of—and hostility towards—other women, thereby leading to their preference for male friends. Here, we chose to use a continuous measure of friendship preference to account for the fact that friendship preferences are unlikely to be all or nothing, but rather exist on a continuum. Guided by research indicating that (a) women who are sexually unrestrained and attractive are more frequently the targets of female aggression (Fink et al., 2014; Leenaars et al., 2008) and (b) the formation of cross-sex friendships often occurs in response to exclusion from same-sex peers (Bukowski et al., 1999; Kuttler et al., 1999), we hypothesized that women's preference for male friends would be related to perceived aggression from other women due to their mating success. Additionally, we predicted this pathway would be predicted by lowered trust in, and greater hostility towards, other women in response to this perceived aggression.

3.1. Method

3.1.1. Sample and procedure

The final data analytic sample consisted of 138 heterosexual female undergraduates ($M_{\text{age}} = 19.89$, $SD = 1.29$, age range: 18–23). Prior to data analysis, participants were excluded for reporting a non-heterosexual sexual orientation ($n = 14$). No participants were excluded for failing attention filters.

This study utilized a correlational design. Participants completed the study in lab using computers separated by privacy partitions. As in Study 1, after reading and signing the informed consent, participants responded to measures assessing trust in female friends ($\alpha = 0.88$), hostility towards women ($\alpha = 0.83$), history of sexually unrestricted behavior ($\alpha = 0.88$), self-perceived mating success ($\alpha = 0.90$), and self-perceived attractiveness. Participants additionally completed measures assessing their trust in male friends ($\alpha = 0.88$) and perceived aggression from women ($\alpha = 0.93$; Hurst et al., 2018) before responding to 3-items assessing their preference for male friends ($\alpha = 0.78$). For this measure, participants indicated their identification as a guy's girl (vs. girl's girl), the extent to which they prefer men (vs. women) as close friends, and the extent to which their present friendships are with members of the opposite sex using 7-point scales. Please see supplementals for more information. Lastly, participants responded to demographic items, were debriefed, and dismissed.

3.2. Results and discussion

See Table 2 for correlations between all variables. As found in Study 1, women's preference for male friends was related to less trust in female friends, more hostility towards women, higher self-perceived mating success, and greater past unrestricted sexual behavior. Preference for male friends was also associated with greater perceived aggression from other women, but no significant correlations emerged between preference for male friends and self-perceived attractiveness or trust in male

Table 2
Study 2 correlations.

	SPA	SPMS	SOI-behavior	PAGW	HTW	Trust in male friends	Trust in female friends
Preference for male friends	0.11	0.22**	0.18*	0.36***	0.30***	0.13	-0.30***
SPA		0.65***	0.24**	0.13	0.02	0.04	-0.08
SPMS			0.37***	0.21**	0.05	0.00	-0.21**
SOI-behavior				0.06	0.19*	-0.08	-0.15
PAGW					0.62***	-0.05	-0.41***
HTW						-0.13	-0.42***
Trust in male friends							0.47***

Note. SPA = Self-Perceived Attractiveness, SPMS = Self-Perceived Mating Success, PAGW = Perceived Aggression from Women, HTW = Hostility Towards Women. SOI-Behavior measured via 9-point scales; all other variables measured via 7-point scales.

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .001$.

friends.

Structural equation modeling was used to test the hypothesized pathway between women's mating success and preference for male friends. See supplementals for results of alternative models and model fit statistics. All models were estimated using Mplus statistical software (Mplus 7.4; Muthén & Muthén, 2012). History of unrestricted sexual behavior was positively skewed and was thus square root transformed. Model fit was determined using the χ^2 test of model fit, the root mean square residual (RMSEA), the comparative fit index (CFI), and the standardized root mean square residual (SRMR). The model was considered to be of adequate fit to the data if χ^2 was not significant ($p > .05$), the value of RMSEA was less than 0.05 with an upper bound of the 90% confidence interval (CI) less than 0.10 (Browne & Cudeck, 1989), the value of the CFI was greater than 0.95 (Hu & Bentler, 1999), and if the value of SRMR was less than 0.05. All significance tests were two-tailed. Ten structural regression paths were specified as follows: attractiveness to self-perceived mating success, attractiveness to unrestricted sexual behavior, self-perceived mating success and unrestricted sexual behavior each to perceived aggression from women, perceived aggression from women to hostility towards women, hostility towards women to trust in male friends and to trust in female friends, and each trust in male and female friends and hostility towards women to preference for male friends.

The model (Model A) was initially of poor fit to the data. Two sequential modifications were made. Trust in female friends was first specified to covary with trust in male friends (Model B). Second, trust in female friends was regressed on perceived aggression from women (Model C). Adequate model fit was achieved after dropping non-significant paths (Models D, E, and F), $\chi^2(12) = 15.79$, $p = .201$; RMSEA = 0.05 (CI = [0.000, 0.105]); CFI = 0.99; SRMR = 0.055. See Fig. 1 for the final model.

As predicted, attractiveness was a significant positive predictor of self-perceived mating success, $b = 0.65$ ($SE = 0.05$), $t = 13.16$, $p \leq .001$, and unrestricted sexual behavior, $b = 0.24$ ($SE = 0.08$), $t = 2.95$, $p = .004$. However, unrestricted sexual behavior was not predictive of perceived aggression from women, $b = -0.01$ ($SE = 0.09$), $t = 0.08$, $p = .936$. As such, both paths of attractiveness to unrestricted sexual behavior (Model D) and unrestricted sexual behavior to perceived aggression from women (Model E) were dropped from the final model.

Self-perceived mating success² was a significant positive predictor of perceived aggression from women, where women who rated themselves

as having higher mating success reported perceiving higher levels of aggression from other women, $b = 0.21$ ($SE = 0.08$), $t = 2.58$, $p = .010$. Perceived aggression from women, in turn, predicted increased feelings of hostility towards other women, $b = 0.62$ ($SE = 0.05$), $t = 11.60$, $p \leq .001$. Higher levels of perceived aggression from women, $b = -0.27$ ($SE = 0.08$), $t = 3.24$, $p = .001$, and hostility towards women, $b = -0.21$ ($SE = 0.09$), $t = 2.40$, $p = .016$, each predicted lowered trust in female friends. Women who perceived higher levels of aggression from, and/or held more hostility towards, other women also reported placing less trust in female friends. Notably, hostility towards other women was *not* related to trust in male friends, and this pathway was subsequently dropped from the final model (Model F).

Additionally, each trust in male friends, $b = 0.33$ ($SE = 0.08$), $t = 4.02$, $p \leq .001$, trust in female friends, $b = -0.38$ ($SE = 0.09$), $t = 4.28$, $p \leq .001$, and hostility towards other women, $b = 0.18$ ($SE = 0.08$), $t = 2.19$, $p = .028$, were positively associated with a preference for male friends. That is, women who had lower trust in female friends, higher trust in male friends, and/or more hostility towards other women reported an increased preference for having mostly male friends. Together, these results are consistent with the hypothesis that attractive women exhibit a preference for male friends via a complex pathway that includes perceiving aggression from other women, their own hostility towards women, and differences in the amount of trust they have in other women and men.

The current results serve to conceptually replicate and extend the results of Study 1, suggesting that women who experience greater mating success report more perceived aggression from same-sex others. Moreover, the results of our model additionally revealed that perceived aggression from same-sex others, in turn, predicted both lower trust in and greater hostility towards other women, which were each related to higher preference for male friends. While trust in male friends was related to greater preference for male friends, trust in male friends was not related to hostility towards other women. Taken together, these results indicate that women's preference for male friends may emerge due to greater trust in men, as well as the development of negative feelings towards other women emerging in response to perceived aggression from women.

4. Study 3

Studies 1–2 demonstrated that women who prefer male friends have greater mating success and exhibit greater hostility towards—and less trust in—other women. Additionally, Study 2 revealed that preference for male friends is influenced both by greater trust of men and the development of negative feelings towards other women. Study 3 sought to examine how women who prefer male friends are perceived by other women. Given that women who prefer male friends are more hostile towards—and less trusting of—other women, it is possible other women may be wary of women who prefer male friends and less likely to trust them. This perception would prevent women from investing in

² Although we hypothesized that attractive women's preferences for male friends would emerge via the pathway depicted in Fig. 1, women with high (vs. low) self-perceived mating success could also prefer male friends directly in response to their greater trust of men. That is, women who are generally well received by potential mates may place greater trust in men. Accordingly, we conducted a follow-up test examining this possibility. Results revealed that self-perceived mating success did not directly predict trust in male friends ($p = .349$).

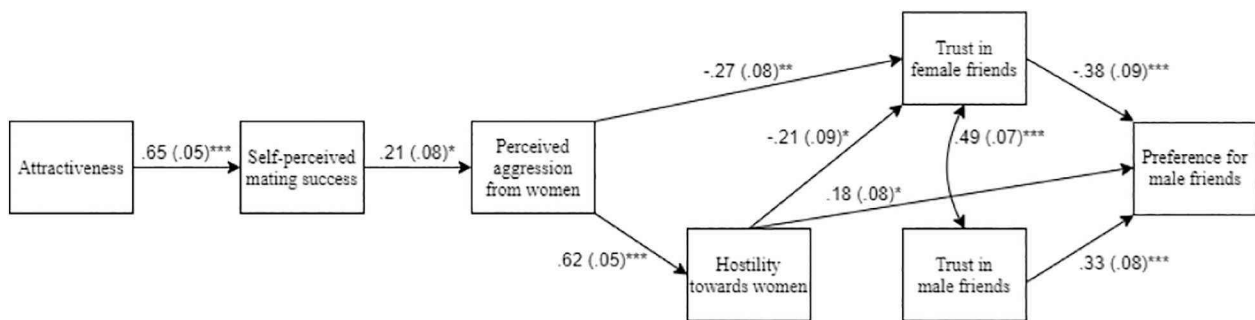


Fig. 1. Final model of the relationship between attractiveness and preference for male friends, as predicted by mating success, perceived aggression from women, hostility towards women, and trust in female friends. Note. $*p \leq .05$, $**p \leq .01$, and $***p \leq .001$; standard error provided in parentheses.

friendships with women who prefer male friends, facilitating intrasexual aggression by minimizing empathy towards them. Study 3 was conducted as a test of this possibility, predicting women would perceive a female target that prefers male friends to be less trustworthy than an otherwise identical target that prefers female friends.

4.1. Method

4.1.1. Sample and procedure

Final data analytic sample consisted of 79 heterosexual female undergraduates ($M_{\text{age}} = 20.03$, $SD = 2.32$, age range: 18–33). Prior to data analysis, participants were excluded for: failing the manipulation check ($n = 1$), lack of naivete (i.e., having prior exposure to the hypothesis in question) and failing attention filters ($n = 1$), or reporting a non-heterosexual sexual orientation ($n = 9$).

This study utilized a one-way, between-subjects (target friendship preferences: male vs. female) design. Participants completed the study in lab in small groups of 2–10. The informed consent document relayed the cover story that the study was examining judgements of social media profiles based on whether the profile includes a photograph. In reality, all participants were told they had been assigned to view a profile without a photograph and were randomly assigned to view a profile of a female target described as preferring male ($n = 40$) or female ($n = 39$) friends. See supplementals for target profiles. After viewing the profile, participants completed a measure assessing their perceptions of the target's trustworthiness ($\alpha = 0.90$; DelPriore et al., 2018) as well as other measures, which are described and reported in the supplementals. Participants then completed a manipulation check regarding the target's friendship preferences, responded to standard demographic items, were debriefed, and dismissed.

4.2. Results and discussion

An independent samples *t*-test was conducted to examine whether women's perceptions of trustworthiness differed as a function of a female target's friendship preferences. Supporting the hypothesis, results revealed a significant main effect of target friendship preferences, where women perceived the target who preferred male friends ($M = 4.57$, $SD = 1.10$) to be less trustworthy than the target who preferred female friends ($M = 5.25$, $SD = 0.92$), $t(77) = -2.97$, $p = .004$, $d = 0.70$. These results demonstrate that women perceive a same-sex target who prefers male friends as less trustworthy than an otherwise identical target who prefers female friends. This finding suggests women's friendship preferences may impact how they are perceived by other women, potentially leading to a feed-forward cycle of distrust and hostility between women who prefer male friends and other women.

5. Study 4

Study 4 aimed to replicate the findings in Study 3 and additionally

sought to examine whether women and men differentially evaluate a female target's trustworthiness based on her friendship preferences. While women were expected to view a female target that prefers male friends to be less trustworthy than a female target that prefers female friends, no such difference was expected to emerge for men's evaluations of target's trustworthiness, given that men are more likely to believe men and women can be just friends (Felmlee et al., 2012) and are less likely to believe cross-sex friendships are characterized by secret sexual interest from the female party (Hart et al., 2016).

5.1. Method

5.1.1. Sample and procedure

The final data analytic sample consisted of 149 heterosexual undergraduates (81 women; $M_{\text{age}} = 19.87$, $SD = 2.85$, age range: 18–47). Prior to data analysis, participants were excluded for lack of naivete and failing attention filters ($n = 16$) or reporting a non-heterosexual sexual orientation ($n = 14$).

This study utilized a 2 (participant gender: men vs. women) \times 2 (target friendship preferences: male vs. female) between-subjects design. The procedure and materials were identical to Study 3. Participants were randomly assigned to view the profile of a female target described as preferring male ($n = 76$) or female ($n = 73$) friends, completed the measure assessing their perceptions of the target's trustworthiness ($\alpha = 0.89$), the manipulation check, demographic information, and were debriefed and dismissed. Additional dependent measures are described and reported in the supplementals.

5.2. Results and discussion

To examine whether men and women differ in their perceptions of a female target's trustworthiness based on her friendship preferences, a 2 (participant gender: men vs. women) \times 2 (target friendship preferences: male vs. female) between-subjects ANOVA was conducted. Results revealed a significant main effect of target friendship preferences on perceived trustworthiness. The target described as preferring male friends ($M = 4.75$, $SD = 0.94$) was rated as significantly less trustworthy than the target that preferred female friends ($M = 5.23$, $SD = 0.85$), $F(1, 145) = 9.92$, $p = .002$, $d = 0.54$. Although there was no main effect of participant gender on perceived trustworthiness ($p = .49$), a 2-way interaction between participant gender and target friendship preferences emerged, $F(1, 145) = 4.20$, $p = .042$. Simple effects tests revealed that women perceived the target that preferred male friends ($M = 4.65$, $SD = 0.91$) as less trustworthy than the target that preferred female friends ($M = 5.42$, $SD = 0.84$), $F(1, 145) = 14.81$, $p \leq .001$, $d = 0.87$. However, consistent with predictions, men's perceptions of trustworthiness did not differ based on target friendship preference ($p = .457$).

These results suggest that, although women perceived other women that prefer male friends as less trustworthy than those that prefer female friends, women's friendship preferences do not impact how they are

perceived by men. This is consistent with the hypothesis that women's friendship preferences—because they are associated with differences in mating success and hostility towards women—may have important implications for person-perception, particularly for other women.

6. Study 5

The purpose of Study 5 was to extend the results of Studies 1–4 by examining whether women's friendship preferences influence other women's perceptions of their mating success and sexual strategies, and to better understand the path by which preferring male friends leads to decreased trust from other women. The current study sought to examine whether a) women report lower interpersonal liking of women who prefer male (vs. female) friends and b) if the relationship between target's friendship preferences and interpersonal liking of the target is predicted by perceptions of trustworthiness. Additionally, this study aimed to examine whether women differentially perceive mating- and friendship-relevant traits (i.e., sexual unrestrictedness, mating success, and hostility towards other women) and other socially undesirable traits (e.g., manipulative) as a function of the target's preference for male (vs. female) friends.

Finally, this study aimed to examine whether these perceived traits influence the relationship between women's friendship preferences and decreased trustworthiness. The following predictions were made:

Prediction 1: The female target that prefers male friends will be perceived as more: successful in the mating domain, sexually unrestricted, hostile towards other women, and possessing more socially undesirable traits than the target that prefers female friends.

Prediction 2: (a) Consistent with Studies 3 and 4, women will report lower perceived trustworthiness of targets that prefer male (vs. female) friends and, as a result, will (b) report less interpersonal liking of the target.

Prediction 3: The relationship between female targets' friendship preferences and perceived trustworthiness will be predicted by one or more of the following qualities known to covary with females' preference for male friends: greater mating success, more unrestricted sexual behavior, greater hostility towards women, and possessing socially undesirable traits. Given that each of these factors (with the exception of possessing undesirable traits, which was included as a plausible alternative pathway) are greater in women who prefer male (vs. female) friends, we did not have a strong theoretical justification for predicting that any one of these qualities would predict reduced trust of women who prefer male friends more than any of the others.³

6.1. Method

6.1.1. Sample and procedure

The final data analytic sample consisted of 132 heterosexual female undergraduates ($M_{\text{age}} = 19.89$, $SD = 1.51$; age range: 18–28). Prior to data analysis, participants were excluded for: failing the manipulation check ($n = 1$), lack of naivete and failing attention filters ($n = 19$), or reporting a non-heterosexual sexual orientation ($n = 4$).

The primary research question of interest (i.e., What predicts evaluations of trustworthiness?) was examined using a measurement-of-mediation design. The predictor variable (i.e., target friendship preferences) was manipulated as in Studies 3–4, and potential mediating

variables were measured prior to the main dependent variable of interest (i.e., trustworthiness). The procedure and materials were similar to Studies 3–4, with additional measures (detailed in the supplementals). As in the previous studies, participants were randomly assigned to view a profile of a female target that preferred male ($n = 64$) or female ($n = 68$) friends. After viewing the profile, participants were asked to respond to several measures assessing their perceptions of the target's mating success ($\alpha = 0.91$), sexually unrestricted behavior ($\alpha = 0.86$), and hostility towards other women ($\alpha = 0.94$). Participants also completed a measure assessing perceptions of female target's socially undesirable traits (e.g., deceptive; $\alpha = 0.93$). Participants then evaluated the target's trustworthiness ($\alpha = 0.91$) and completed a measure assessing interpersonal liking of the target ($\alpha = 0.91$; Veksler & Eden, 2017). Lastly, participants responded to the manipulation check and demographic items before being debriefed and dismissed.

6.2. Results

6.2.1. Prediction 1

A series of independent samples *t*-tests were conducted to test the relationship between target friendship preference and perceived mating success, sexually unrestricted behavior, hostility towards other women, and socially undesirable traits. See Table 3 for descriptive statistics. Consistent with the hypothesis, results revealed women perceived the target that preferred male (vs. female) friends to have more mating success ($t[130] = 3.50$, $p = .001$, $d = 0.61$), a history of more sexually unrestricted behavior ($t[130] = 4.88$, $p \leq .001$, $d = 0.85$), greater hostility towards women ($t[130] = 15.79$, $p \leq .001$, $d = 2.74$), and more socially undesirable traits ($t[130] = 2.19$, $p = .030$, $d = 0.38$).

6.2.2. Prediction 2

Independent samples *t*-tests were conducted to test the relationship between target friendship preference and women's interpersonal liking and perceived trustworthiness of the target. See Table 3 for descriptive statistics. Consistent with the hypothesis, results revealed that women perceived the target that preferred male friends as less trustworthy than the target that preferred female friends, $t(130) = -3.16$, $p = .002$, $d = 0.55$. However, women did not report differential interpersonal liking of targets based on their friendship preferences ($p = .177$).

Next, a mediation analysis using Preacher and Hayes' (2008) SPSS macro was conducted to test the prediction that the relationship between target's friendship preferences and interpersonal liking of the target will be mediated by perceptions of target trustworthiness. Five thousand bootstrap resamples were performed. The analysis supported this prediction, revealing a significant indirect effect of target friendship preferences on interpersonal liking of the target via beliefs about target's trustworthiness ($b = 0.41$, $SE = 0.14$, 95% CI [0.15, 0.68]). The model, along with statistics measuring the significance of each predictive pathway, can be seen in Fig. 2.

Table 3
Study 5 descriptive statistics.

	Target preferring male friends ($N = 64$)		Target preferring female friends ($N = 68$)	
	M	SD	M	SD
Mating success***	4.87	0.91	4.28	1.02
Sexual unrestrictedness***	3.51	1.53	2.42	0.99
Hostility towards women***	4.80	0.91	2.54	0.73
Socially undesirable traits*	2.71	1.46	2.20	1.20
Interpersonal liking	4.39	1.18	4.65	1.02
Trustworthiness**	4.54	1.12	5.11	0.94

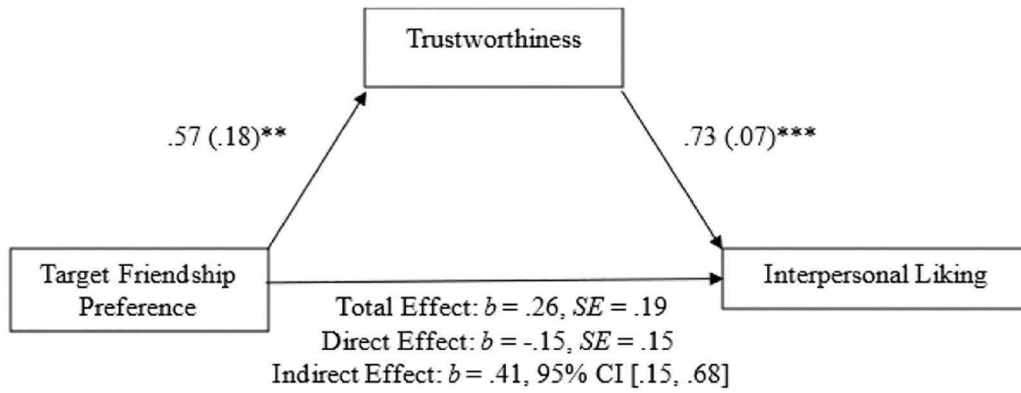
Note.

*** $p \leq .001$.

** $p \leq .01$.

* $p \leq .05$.

³ We also conducted exploratory follow-up analyses to examine whether women's own friendship preferences impact perceptions of targets that prefer male (vs. female) friends. Results, which are reported in the supplementals, show that women's own friendship preferences largely did not moderate their perceptions of targets that prefer male (vs. female) friends.



Note. ** indicates $p \leq .01$ and *** indicates $p \leq .001$. Standard error provided in parentheses.

Fig. 2. Study 5 unstandardized regression coefficients for the relationship between target friendship preferences and interpersonal liking as mediated by perceived trustworthiness of the target.

6.2.3. Prediction 3

A parallel mediational model was conducted using Preacher and Hayes' (2008) SPSS macro to test the prediction that the relationship between female target friendship preference and perceived trustworthiness will be mediated by perceptions of mating success, sexually unrestricted behavior, hostility towards other women, and socially undesirable traits. Five thousand bootstrap resamples were performed. All mediations are reported while holding all other mediators constant. The analysis revealed a significant indirect effect of target friendship preference on trustworthiness via perceived sexually unrestricted behavior ($b = 0.20, SE = 0.08, 95\% CI [0.07, 0.39]$), perceived hostility towards women ($b = 0.57, SE = 0.20, 95\% CI [0.17, 1.01]$), and perceived socially undesirable traits ($b = 0.19, SE = 0.08, 95\% CI [0.03, 0.36]$). The indirect effect of perceived mating success ($b = -0.03, SE = 0.05, 95\%$

CI $[-0.15, 0.07]$) was not significant.

The total effect of target friendship preference on evaluations of trustworthiness was significant (c path; $b = 0.57, SE = 0.18, t = 3.16, p = .002$), but the direct effect of target friendship preference on perceived trustworthiness became non-significant when controlling for all the potential mediators (c' path; $b = -0.37, SE = 0.24, t = -1.54, p = .127$). The model, along with statistics measuring the significance of each predictive pathway, can be seen in Fig. 3. Statistics for individual paths can be found in the supplementals.

6.3. Discussion

The results of Study 5 conceptually replicated Studies 3 and 4, demonstrating female targets' friendship preferences influence women's

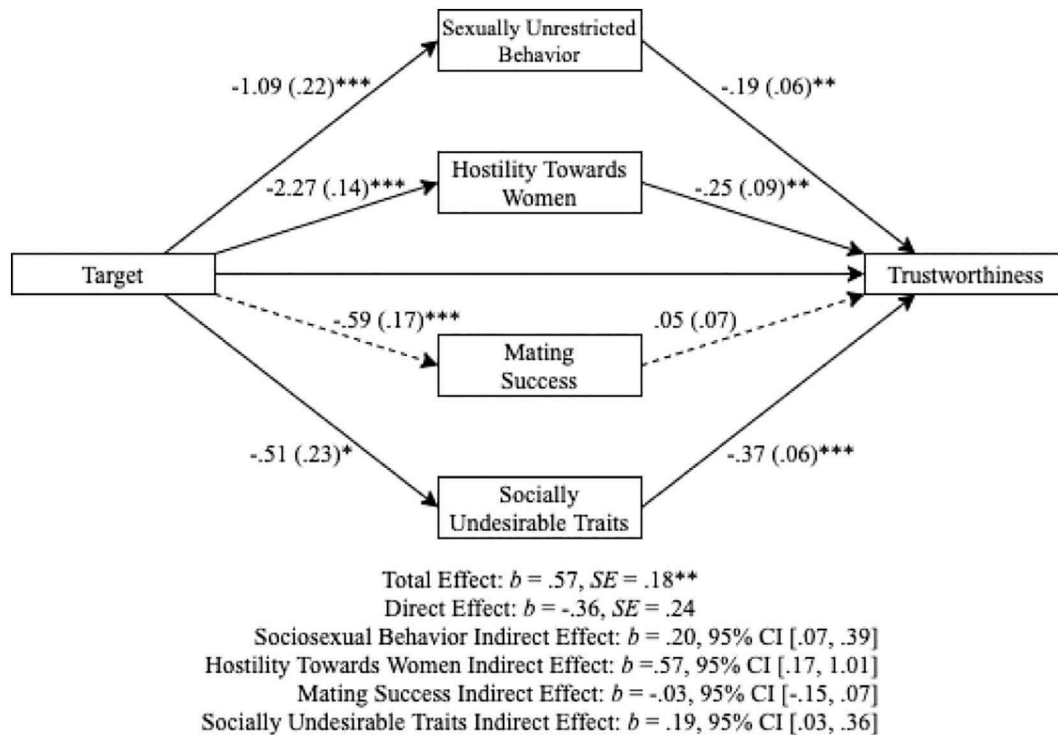


Fig. 3. Study 5 unstandardized regression coefficients for the relationship between target friendship preferences and perceived trustworthiness as mediated by evaluations of target's sexually unrestricted behavior, hostility towards women, and socially undesirable traits (but not mating success). Note. * indicates $p < .05$, ** indicates $p \leq .01$, and *** indicates $p \leq .001$. Non-significant indirect effects denoted by dashed lines. Standard error provided in parentheses.

evaluations of trustworthiness. Specifically, female targets that prefer male friends are perceived as less trustworthy than female targets that prefer female friends. While target friendship preferences did not directly influence interpersonal liking, an indirect effect via evaluations of trustworthiness emerged. That is, women evaluated the target that preferred male (vs. female) friends as less trustworthy, which predicted lower interpersonal liking.

Results also supported the predictions that female targets who prefer male (vs. female) friends would be perceived as having more unrestricted sexual behavior, hostility towards other women, past mating success, and socially undesirable traits. The results of a parallel mediation model further demonstrated the relationship between target friendship preferences and evaluations of target trustworthiness was statistically mediated by perceptions of target's sociosexual behavior, hostility towards other women, and socially undesirable traits, but not by perceptions of target's mating success. That is, the target that preferred male (vs. female) friends was evaluated to engage in more unrestricted sexual behavior, hold more hostile attitudes towards other women, and possess higher levels of socially undesirable traits, which each predicted lower perceptions of trustworthiness for the target that preferred male friends. These results suggest that women not only distrust same-sex others who prefer male friends for qualities that they exemplify, but also because they perceive these women to be undesirable social partners.

7. General discussion

Although anecdotal accounts in popular culture suggest that gay's girls (i.e., women who prefer male friends) are viewed negatively by female peers, little research has investigated this phenomenon. The current work was designed to redress this gap by investigating whether women's preferences for male (vs. female) friends were associated with both self-reported (Studies 1–2) and others' perceptions of (Studies 3–5) female-friendship and mating-relevant characteristics.

In line with evolutionary theoretical perspectives regarding the mating benefits of cross-sex friendships (Hand & Furman, 2009; Lemay & Wolf, 2016; Lewis et al., 2015), the results of Study 1 and 2 demonstrate that women who prefer male friends experience mating benefits. Study 1 demonstrated that women's preference for male (vs. female) friends is associated with more unrestricted sexual behavior and mating success; these findings were conceptually replicated in Study 2 using a continuous measure of women's friendship preferences as a predictor.

While forming cross-sex friendships was found to be associated with mating benefits, it also appears to carry costs for relationships with same-sex peers. In both Study 1 and Study 2, women's preference for male (vs. female friends) was related to less trust in female friendships and more hostility towards other women. Consistent with past literature showing the formation of cross-sex friendships is associated with greater exclusion from same-sex peers (Bukowski et al., 1999; Kuttler et al., 1999), Study 2 further demonstrated that women who reported receiving more aggression from other women also had greater hostility towards women and lower trust in female friends, which, in turn, each predicted a greater preference for male friends. Trust in male friends was also positively associated with a preference for male friends, but it was not related to greater hostility towards other women. These results suggest that negative experiences with same-sex peers are not associated with a preference for cross-sex friendships due to the bolstering of trust in those friendships, but through the damage inflicted on trust in same-sex friendships.

Studies 3–5 examined how women who prefer male (vs. female) friends are evaluated by their peers. Across all studies, women evaluated the female target that preferred male friends as less trustworthy than the female target that preferred female friends. Men, however, did not differ in their evaluations of trustworthiness based on the target's friendship preferences (Study 4). These results indicate the relationship between women's friendship preferences and trust in women is likely

bidirectional. That is, women that prefer male friends both distrust and are distrusted by other women. Study 5 further demonstrated that women evaluate same-sex targets who prefer male (vs. female) friends to have greater hostility towards other women, more unrestricted sociosexual behavior, more mating success, and higher levels of socially undesirable traits. These findings are in line with the pattern of results in Studies 1 and 2, which showed that sociosexual behavior, hostility towards women, and mating success do differ based on women's self-reported friendship preferences. However, it seems that women exhibit an overperception bias when evaluating female targets. The effect sizes for women evaluating female targets on these characteristics (i.e., unrestricted sexual behavior, mating success, hostility towards women) are much larger than the effect sizes found in the self-reported studies. This overperception bias may foster stereotyping and negative treatment of women who prefer male friends.

Consistent with past research showing that women distrust promiscuous same-sex others (Arnocky et al., 2019; Reynolds et al., 2018; Vaillancourt & Sharma, 2011), women's distrust of female targets who prefer male (vs. female) friends was statistically mediated by heightened perceptions of these target's unrestricted sexual behavior (Study 5). This finding is in line with the reasoning that suspicions regarding the sexual undercurrent of women's cross-sex friendships underlie women's distrust of women who prefer male friends. Accordingly, women who prefer male friends may be viewed as potential threats to existing or desired mateships, which could foster distrust of these women.

Perceptions of target's hostility towards other women was additionally shown to statistically mediate the relationship between target friendship preferences and evaluations of trustworthiness, where women who prefer male friends were distrusted by same-sex raters because they were perceived to be hostile towards women. As such, women's distrust of same-sex others who prefer male friends appears to be influenced by meta-stereotypes (i.e., beliefs about attitudes outgroup members hold towards one's in-group; Vorauer et al., 1998) about these women. These results are particularly interesting considering past literature showing that girls' formation of cross-sex friendships is associated with exclusion by same-sex peers (Bukowski et al., 1999; Kuttler et al., 1999). Although women's preference for male friends is associated with greater hostility towards other women (Studies 1–2), it is also associated with receiving more aggression from same-sex peers (Study 2). Together, these results raise questions regarding the causal nature of the relationship between women's friendship preferences, experiences with same-sex peers, and attitudes towards same-sex peers. One possibility is that women's preference for male friends and hostility towards other women develop because of receiving aggression from same-sex peers. Research in nonhuman primates support this reasoning, as female chimpanzees form cross-sex friendships to protect themselves from same-sex aggression (Kahlenberg et al., 2008). Given the cross-sectional nature of the data, however, true causality cannot be established, and this interpretation should be treated with caution. What seems most plausible is that the relationship between women's friendship preferences and their social experiences with same-sex peers is bidirectional in nature, whereby women are targeted by their same-sex peers because of their cross-sex friendships and are also drawn to cross-sex friendships because they are excluded and targeted by same-sex peers.

While this research is important in establishing the factors associated with women's preferences for cross-sex friendships and the social consequences these friendship preferences may carry, there are several important limitations that need to be considered. First and foremost, the samples throughout the current work consisted primarily of college-aged students. Friendships and the characteristics valued in friends valued change over the life span (Sherman et al., 2000; Tesch, 1983; Tesch & Martin, 1983). Indeed, cross-sex friendships are thought to serve different functions at various life stages (Monsour, 1997). Future research should examine whether the factors associated with women's preference for male (vs. female) friends differ across the life span. Additionally, this research used samples from the U.S., and cultural

variations in friendship conceptualization may be important to consider. For example, research has found that Americans consider more of their social network to be friends compared to West Africans (Adams & Plaut, 2003) and Europeans (Gareis, 1995), because the term “friend” encompasses a broader spectrum of relationships in the U.S. than in other countries (Matthews, 1986). Thus, future research in this area may benefit from the use of more specific definitions of friendship.

Further limitations due to the measurement of friendship preference may also be important to consider when interpreting the results of this research. First, women's friendship preference (i.e., self-identification as a guy's girl or a girl's girl) was measured dichotomously in Study 1, which may have obscured meaningful variation in the relationships between women's friendship preferences and female-friendship and mating-relevant characteristics. Second, Study 2 utilized self-reported measures of friendship preference, which may not reflect the actual number of women's same- and cross-sex friends. It is possible that the relationships reported here may differ when examining the actual number of male and female friends.

Another limitation arises in the cross-sectional design of Studies 1 and 2. That is, Study 1 and 2 examined the relationship between women's friendship preferences and female-friendship and mating-relevant characteristics at one time point. As such, it is impossible to determine a causal relationship between these variables. Future research would benefit from using longitudinal design to determine developmental factors that precede and follow girl's preferences for male and female friends. Although Study 2 demonstrated that women's preference for male friends is mediated by increased hostility towards other women and decreased trust in female friends, and Study 5 demonstrated women's lack of trust in same-sex others who prefer male friends is predicted by perceptions of sexually unrestricted behavior, hostility towards women, and socially undesirable traits, these findings rely on statistical mediation. Therefore, true causality cannot be determined, and future research should consider experimentally manipulating these proposed mediators (Pirlott & MacKinnon, 2016).

A further limitation throughout all studies is the reliance on limited self-report measures. That is, Studies 1–2 relied on self-report measures of friendship preference, female-friendship and mating relevant characteristics, and Studies 3–5 relied on self-report measures to assess perceptions of the target. Accordingly, it is possible that the pattern of results observed here are not due to women who are, e.g., higher in attractiveness, being more likely to be disliked by other women (the interpretation made by the authors based on the research hypothesis). It is just as possible that these results reflect women disliking other women who *think* that they are attractive (i.e., women who are more narcissistic). Indeed, research finds that women prefer as friends other women who are humble (see Reynolds, 2021). It is therefore possible that these women prefer the company of men because other women dislike them for their lack of humility rather than their attractiveness. Although the results of Study 5 detract from this alternative (Study 5 finds that women perceive women who prefer male friends as having greater mating success, which suggests that the women in Studies 1 and 2 are perceiving themselves accurately), we did not explicitly test whether women also perceive women who prefer male friends as being more narcissistic. Accordingly, although beyond the scope of the current research, future research would benefit from examining this possibility. Finally, while Studies 3–5 suggest that women distrust same-sex others who prefer male friends, it is unclear how this distrust may manifest during face-to-face interactions. Subsequent studies using behavioral measures are needed to fully understand how women's friendship preferences influence their social relationships with same-sex peers.

7.1. Conclusions

The current research finds that women who prefer male (vs. female) friends may garner benefits in the mating domain but face costs when it comes to same-sex relationships. Here, women who prefer male friends

reported placing less trust in their female friendships and were similarly distrusted by other women. Distrust of women who prefer male friends was specific to female observers and was further shown to be predicted by perceptions of target's sociosexual behavior, trait hostility towards women, and possession of socially undesirable traits. While women who prefer male friends do report higher trait levels of hostility towards other women, they also report receiving more aggression from their same-sex peers. Although these results help clarify the various factors related to women's preference for male friends, due to the nature of the data, a causal relationship among the factors that lead women to prefer male friends cannot yet be determined. However, given the mental health problems linked to girls' and women's intrasexual victimization, these results may imply a concerning cycle of exclusion and friendship preferences.

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CRediT authorship contribution statement

Hannah K. Bradshaw: Conceptualization, Methodology, Formal analysis, Writing – original draft, Writing – review & editing. **Katja Cunningham:** Formal analysis, Writing – review & editing. **Sarah E. Hill:** Writing – review & editing, Supervision.

Declaration of competing interest

None.

Appendix A. Supplementary material

Supplementary material to this article can be found online at <https://doi.org/10.1016/j.paid.2021.111301>.

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