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## Competitive reputation manipulation: Women strategically transmit social information about romantic rivals

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## ABSTRACT

Researchers have suggested that women compete with same-sex peers using indirect social tactics. However, the specific predictors and mechanisms of this form of female intrasexual competition are less well understood. We propose that one mechanism by which women harm rivals' social opportunities is through selectively transmitting reputation-relevant social information. Moreover, we contend that this behavior is designed to undermine the romantic and social appeal of same-sex romantic rivals who are perceived to be threatening. Evidence from five studies suggests that women's dissemination of social information is strategic and reliably predicted by various cues of romantic rival threat: attempts at mate poaching (Study 1), physical attractiveness (Studies 2 and 3), and provocative clothing (Studies 4 and 5). Women strategically harmed and failed to enhance the reputations of other women who threatened their romantic prospects directly (by flirting with their romantic partners) and indirectly (by being attractive or provocatively dressed). Women's dispositional levels of competitiveness also predicted their information transmission: highly competitive women (both generally and in romantic domains specifically) disclosed more reputation-damaging information than did less competitive women. Furthermore, women transmitted reputation-harming information about female targets independent of how much they explicitly liked those targets, suggesting a disconnect between women's intentions and their gossip behavior. Irrespective of the gossipers' intentions, pilot data confirmed that social harm is likely to befall the women targeted by the transmission of reputation-damaging social information.

## 1. Competitive reputation manipulation: Women strategically transmit social information about romantic rivals

"When I was in junior high, there was this new girl that a bunch of guys liked. Two girls in the grade went around with a petition they made all the boys sign that said 'I will never go out with the Megawhore'" –Hope, 17 (p. 135; Wiseman, 2009)

"Brianna and Mackenzie gave [Jenny] a code name and started calling her Harriet the Hairy Whore. They told everyone Jenny was hooking up with the boys in the woods behind the soccer field... Brianna and Mackenzie started a club called Hate Harriet the Whore Incorporated. They got every girl to join except two who didn't care." (p. 26; Simmons, 2002)

The ethnographic excerpts above depict particularly cruel treatment among adolescent girls. Readers likely assume and probably hope that these are rare, isolated incidents limited to the heartless hallways of high schools. Perhaps, however, these are merely extreme examples of a pervasive pattern of female intrasexual competition.

Research suggests that female intrasexual competition manifests in highly social, yet indirect ways—through harming social opportunities via gossip or exclusion (Benenson, 2014; Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Campbell, 1999). However, the specific mechanisms by which women harm the social opportunities of rivals as well as the dispositional and situational predictors of these aggressive tactics have yet to be fully examined. The current investigation sought to fill this gap in the literature by testing the hypothesis that women selectively disclose reputation-damaging (versus reputation-enhancing) information about same-sex rivals. To the degree that women's competition often centered on securing romantic partners throughout history, women's competitive behaviors should be responsive to perceptions of romantic threat posed by other women. Appealing same-sex peers threaten women's own romantic prospects by decreasing the likelihood that women can attract and retain committed romantic partners. Across five studies, we tested the prediction that women's dissemination of same-sex peers' social information is strategic and reliably predicted by various cues of romantic rival threat: attempts at mate poaching (Study 1), physical attractiveness (Studies 2 and 3) and provocative clothing

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(Studies 4 and 5).

Furthermore, we tested the hypothesis that individual differences in competitiveness predict women's strategic use of these disclosures. Findings revealed that highly competitive women (both generally and in mating domains in particular) use more aggressive reputation manipulation than do less competitive women, further supporting the contention that selective transmission of social information is a form of female romantic competition.

Last, we examined whether women's competitive behaviors parallel their explicit feelings towards their information targets. This allowed us to assess whether those behaviors are motivated by explicit (versus potentially implicit) concerns about romantic rivalry. Understanding the behavioral mechanisms by which women compete, the situational and interpersonal predictors of those behaviors, as well as whether behaviors follow explicit social assessments are each critical steps in understanding women's underlying motivations, identifying perpetrators, and ultimately designing interventions that can mitigate bullying and indirect aggression among women.

### 1.1. Female intrasexual competition

Throughout history, women competed with one another to attract romantic partners and acquire resources to raise children. Historical analyses reveal that some women had more children than others, and this variability was largely predicted by whether those women secured a husband during their fertile years (Courtiol, Pettay, Jokela, Rotkirch, & Lummaa, 2012; Skjærvø & Røskaft, 2014). Moreover, the quality of women's long-term romantic partners predicted important outcomes for both women and their children (see Geary, 2000 for a review). For example, children were more likely to survive and prosper into adulthood when their fathers were present, remained married to their mothers, and were of high social status (Hill & Hurtado, 1996; Sible-Rushton, Hobcraft, & Kiernan, 2005). These data suggest that, all else being equal, women who formed relationships with men who were generous, committed, and of high status would have produced relatively healthier and more successful children, compared to women who did not secure relationships with such men.

Given the profound importance of women's long-term romantic partners, securing the commitment and investment of high-quality men should have been a critical domain of women's intrasexual competition (Campbell, 1999). Indeed, Burbank (1987) found that women were the targets of other women's aggression in 91% of 137 cultures and this aggression was often triggered by conflict over men's attention and resources. Even in polygynous societies, in which wealthy men can marry more than one woman, conflict among co-wives about husbands' allocation of sexual, emotional, and material investment was widespread and occasionally became violent (Jankowiak, Sudakov, & Wilreker, 2005; Strassmann, 1997). Furthermore, children were more likely to die when their mothers were polygynously rather than monogamously married, suggesting that women who secured greater investment from their romantic partners could better ensure their children's survival (Omariba & Boyle, 2007; Pollet, Fawcett, Buunk, & Nettle, 2009). Taken together, this pattern suggests that female intrasexual competition for male investment has been not only widespread, but also highly consequential for both women and their children.

### 1.2. Tactics of competition

If there are incentives for women to compete with one another, then women should possess psychological and behavioral strategies that enhance their comparative advantage over rivals. Benenson (2013, 2014) suggested that a primary feature of women's competition involves minimizing the likelihood of detection and, thus, the risk of retaliation (see also Bjorkqvist et al., 1992). By avoiding possible retaliation, women can evade physical injury, which would impair their

ability to bear and care for children (Campbell, 1999). Thus, the strategies by which women compete with same-sex peers for romantic partnerships should be designed to avoid detection. Competition occurring through indirect or covert social tactics would help achieve this goal.

Consistent with this view, women become more competitive in economic games as interactions become increasingly indirect, such as when partners have little or no contact with each other (Archer, 2004, 2009; Walters, Stuhlmacher, & Meyer, 1998). When they do aggress, girls and women often rely on indirect aggression, whereby perpetrators attempt to harm a victim's social standing or disrupt the victim's social relationships, while making it “seem as though there has been no intention to hurt at all” (p. 118; Bjorkqvist et al., 1992). Tactics of indirect aggression often occur behind the victim's back and can include ostracism, breaking confidences, spreading rumors, and gossip (Archer & Coyne, 2005). Although boys and men are much more physically aggressive than females, with indirect forms of aggression, women and girls are equally if not more aggressive than males (Archer, 2004). To be sure, the strength of the sex difference in indirect aggression differs based on the method of assessment. Based on the reports of observers or victims, girls and women appear much more indirectly aggressive than boys and men — but girls and women self-report similar levels of indirect aggression to boys and men (Archer, 2004). This discrepancy could suggest that girls and women are either reluctant to acknowledge their own aggressive behavior (e.g., because of social desirability concerns) or are simply unaware of it (e.g., Tracy, 1991).

Gossip may function as mechanism through which women can harm the social opportunities of their same-sex rivals. That is, if reputations predict access to social partners and resources, then women who tarnished the reputations of rivals would harm their competitors' ability to form relationships with high-quality social and romantic partners, granting themselves a relative advantage (Hess & Hagen, 2002, 2006). And indeed, women compete to discover and spread social information (i.e., gossip) that influences the social and romantic appeal of rivals (Campbell, 2004; McAndrew, 2014; Reynolds, 2016; Rucas et al., 2006). Women do not face this competition alone, but instead use their same-sex friendships as both sources of social information and conduits for disseminating it (Hess & Hagen, 2002, 2006).

Gossip must produce tangible social consequences for it to be an effective competitive tactic. And indeed, people dislike and ostracize those about whom they have heard negative social information, and like and cooperate with those about whom they have learned positive information (Burt & Knez, 1995; Gawronski & Walther, 2008; Gawronski, Walther, & Blank, 2005; Sommerfeld, Krambeck, Semmann, & Milinski, 2007). However, people often treat negative information as more diagnostic of an individual's character than positive information, suggesting that relatively few pieces of negative information are sufficient to ‘tilt the scale’ against a gossip target (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; De Bruin & Van Lange, 2000; Skowronski & Carlston, 1992). The importance of reputations for forming social alliances indicates that reputation manipulation is a viable means by which women could harm rivals' social and romantic opportunities.

Women's interests and behaviors support the contention that gossip is a well-worn tool in their competitive arsenal. Compared to men, women are more interested in gossip about their same-sex peers (McAndrew, Bell, & Garcia, 2007; McAndrew & Milenkovic, 2002) and better remember the details (De Backer, Nelissen, & Fisher, 2007). Women spend more time than men investigating social media accounts of their same-sex peers (McAndrew & Jeong, 2012), a modern form of social information acquisition. Across multiple cultures, women show a higher tendency to gossip than men (Nevo, Nevo, & Derech-Zehavi, 1993; Watson, 2012). Ethnographic investigations reveal that adolescent girls frequently encounter and are negatively affected by one another's gossip (Eder, 1993; Eder & Enke, 1991; Goodwin, 1980; Merten, 1997; Owens, Shute, & Slee, 2000; Simmons, 2002). When asked how they would respond to a same-sex peer who lied about them, women

are more likely than men to seek revenge through gossip (Hess & Hagen, 2006).

Women's friendship patterns suggest that women use their friends to gather and spread social information. Women report greater willingness than men to share gossip with their same-sex friends (McAndrew et al., 2007). Furthermore, women's friendships are characterized by more self-disclosure and social discussions than men's (Hall, 2011; Vigil, 2007). Observation data reveal that a larger percentage of women's than men's conversations center on individuals they know personally and those individuals' relationships (Dunbar, Marriott, & Duncan, 1997; Levin & Arluke, 1985). Conversations of adult friends suggest that negative gossip is most common and positively received among pairs of female friends compared to pairs of men or mixed-sex friends (Leaper & Holliday, 1995; Martin, 1997). These findings suggest that women indeed exchange social information with and about one another. However, empirical investigations of the dispositional and situational predictors of this gossip are lacking.

### 1.3. The optimal strategy

Although theory suggests and data support the assertion that women compete with rivals by exchanging gossip, these competitive behaviors carry social costs that may complicate and constrain their use. Both children and adults alike generally disapprove of gossip, but especially gossip that is negative, self-interested, or competitively motivated (Beersma & Van Kleef, 2012; Fisher, Shaw, Worth, Smith, & Reeve, 2010; Gawronski & Walther, 2008; Kuttler, Parker, & La Greca, 2002; Turner, Mazur, Wendel, & Winslow, 2003; Wilson, Wilczynski, Wells, & Weiser, 2000). Among both nonindustrialized Tsimane women and American sorority women, known gossipers are particularly disliked (Jaeger, Skleder, Rind, & Rosnow, 1994; Rucas et al., 2006). These findings suggest that there are social costs to women who indiscriminately spread gossip.

Insofar as there are such social costs, women could optimize their gossip by limiting it to circumstances when the gossip offers salient competitive advantages. That is, to maximize the efficacy of gossip (i.e., harming rivals' social opportunities) and to minimize potential disadvantages (e.g., retaliation, becoming known as a 'gossip'), women should direct their attention and competitive efforts towards their most formidable same-sex competitors. For example, defaming the reputation of a woman who was otherwise unappealing to social and romantic partners would grant few competitive benefits while still imposing social costs. However, by damaging the reputation of a rival who was highly appealing to social and romantic partners, a woman could decrease her rival's appeal, thereby increasing her own relative desirability to potential partners. By this logic, women should not disseminate negative social information indiscriminately. Instead, women should assess the threat level of rivals and direct attacks to the most threatening ones. The current investigation straightforwardly tested this hypothesis.

### 1.4. Women's most threatening rivals

If some portion of women's competition is aimed at securing relationships with high-quality romantic partners, then women's most formidable rivals should be other women who are appealing romantic partners (Buss, 1988). These women can both directly and indirectly harm women's own romantic prospects by serving as appealing alternatives to potential and current romantic partners. We identify three predictors of rival threat that should follow from a romantic competition framework; each of which we tested as predictors of women's selective information transmission in the following studies.

First, men prefer physically attractive romantic partners (Buss, 1989; Symons, 1979), and attractive women are more likely to secure relationships with wealthy men compared to their less attractive counterparts (Elder Jr, 1969; Taylor & Glenn, 1976; Udry & Eckland,

1984). Women should therefore use one another's physical attractiveness as a cue of competitive threat.

Women are not only sensitive to one another's physical attractiveness, but they view attractive women as rivals and respond competitively and aggressively towards them. Women report competing with one another on the basis of appearance (Cashdan, 1998; Tanenbaum, 2002; Walters & Crawford, 1994). Women perceive attractive women as threatening (Fink, Klappauf, Brewer, & Shackelford, 2014; Russell, Babcock, Lewis, Ta, & Ickes, 2016) and feel jealousy in response to them (Dijkstra & Buunk, 2002). Women derogate and reject attractive women in domains unrelated to appearance, such as work and scholarship activities (Agthe, Spörrle, & Maner, 2010; Luxen & Van De Vijver, 2006). They are less willing to give relationship advice to highly attractive than less attractive women (Russell et al., 2016). Victimization reports reveal that physically attractive women are especially likely to be the targets of other women's indirect aggression (Leenaars, Dane, & Marini, 2008; Wang, Iannotti, & Luk, 2010). Although this pattern suggests that women respond unfavorably to attractive women, the current investigation explores the mechanism by which women harm threatening rivals' social and romantic opportunities. It tests the prediction that women competitively transmit rivals' social information to most harm the reputations of physically attractive conspecifics (Studies 3 and 4).

Second, women may also interpret rivals' overt sexuality, in the form of behaviors and dress, as a cue of competitive threat. Indeed, women are particularly disapproving of one another's sexuality (Baumeister & Twenge, 2002; Oliver & Hyde, 1993). Sexually open women reported that although their relationships with men were comfortable, they often experienced judgment, accusations, and rejection from other women (Blumberg, 2003). Women are less likely than men to befriend a sexually promiscuous same-sex peer (Bleske & Shackelford, 2001). Adolescent girls often tease each other and gossip about one another's sexuality or flirtatious behavior (Eder, 1993; Eder & Enke, 1991). Victimization reports reveal that women's sexual activity often evokes indirect aggression from peers (Leenaars et al., 2008). In the lab, women derogated the appearance, dress, and personality of a female news anchor who dressed sexually compared to one who did not sexualize her appearance (Grabe, Bas, Pagano, & Samson, 2012). When exposed to a provocatively dressed female confederate, women responded with more anger, dirty looks, laughter, and rude comments compared to when she was dressed conservatively (Vaillancourt & Sharma, 2011). Women were also unwilling to befriend the sexually dressed confederate or introduce her to their romantic partners. Although these data suggest women respond with hostility to sexualized rivals, whether women's transmission of rivals' social information is responsive to cues of rivals' sexual openness has yet to be demonstrated. To the degree that sexualized women are viewed as threatening competitors, women should attempt to harm their reputations by selectively transmitting their damaging social information, a prediction we test in Studies 5 and 6.

Third, if women are competing with one another to secure committed romantic relationships, then women who directly jeopardize established partnerships should be viewed as particularly threatening. Indeed, women are more likely than men to lose an established romantic relationship to a same-sex rival (Schmitt, 2004). Physically attractive and sexually unrestrained women were most likely to lure away another woman's partner, further supporting that these are women's most threatening rivals (Schmitt, 2004; Sunderani, Arnocky, & Vaillancourt, 2013). Women appear sensitive to the possibility of these 'mate poaching' attempts; they express stronger moral outrage about infidelity than do men (e.g., Treas & Giesen, 2000). When primed with the possibility of another woman luring away their romantic partner, women became harsher critics of other women's attractiveness, friendliness, and intelligence (Archibald & Fisher, 2014). These unfavorable impressions should translate into competitive behaviors. In Study 1, we tested the prediction that women would harm the reputations of rivals who threaten their established romantic

relationships (a direct threat) compared to those who do not.

### 1.5. Destructive reputational blows

To harm rivals' reputations, women should disclose information that is particularly damaging to women's romantic appeal (Campbell, 2004). Across cultures, men (relative to women) exhibit a greater preference for sexual restraint or chastity when choosing their long-term romantic partners (Buss, 1989; Buss & Schmitt, 1993). Even in societies in which families select their children's marriage partners, parents more strongly prefer sexual chastity in their daughters-in-law compared to sons-in-law (Apostolou, 2007). If men (and their parents) value sexual restraint when making romantic decisions, then information about women's sexual activity should be consequential and thus, valuable within women's reputation competition.

Indeed, derogating a woman's sexual exclusivity or fidelity is perceived as highly effective in harming her desirability as a long-term romantic partner (Schmitt & Buss, 1996). Derogating a woman's sexual exclusivity might harm her ability to acquire short-term sexual partners, as well. Although men do like women to be sexually open to them (Buss & Schmitt, 1993), they might not look as favorably on women who are widely and publically regarded by the community as sexually open to men in general. In the pilot study, we examined whether information about a woman's sexual promiscuity harmed men's assessments of her desirability as both a short-term and long-term romantic partner.

Research on gossip suggests that women should be cautious about sharing their sexual information because other women are highly interested in accessing it. Compared to men, women are particularly interested in gossip about other women's sexual behaviors (McAndrew & Milenkovic, 2002). And indeed, women experience more guilt and anxiety after their sexual experiences and are more reluctant than men to disclose those experiences to others (Bleske & Shackelford, 2001; Carns, 1973; Oliver & Hyde, 1993). Although this pattern suggests that accusations of promiscuity may be an effective tactic to decrease female rivals' desirability as romantic partners, women's selective transmission of one another's sexual information has yet to be demonstrated empirically. The current investigation therefore tested the prediction that women strategically disclose information about threatening (versus less threatening) rivals' sexual promiscuity.

### 1.6. Individual differences in competitiveness

Although all individuals possess evolved mechanisms designed to face the recurrent adaptive challenges faced by human ancestors, individuals differ in the sensitivity of those mechanisms (e.g., Gangestad & Simpson, 2000). For example, although all people possess psychological and behavioral systems designed to enhance their competitive advantage in attracting and retaining romantic partners, individuals vary in the thresholds at which those systems are activated and deployed (e.g., Maner, Miller, Rouby, & Gailliot, 2009; Simpson, Gangestad, Christensen, & Leck, 1999). Individual differences in competitiveness reflect the ease, pervasiveness, and magnitude with which mechanisms linked to intrasexual competition are likely to become activated (Wilson & Daly, 1985). All else being equal, highly competitive women (relative to less competitive women) should possess a lower threshold for detecting and responding to cues of intrasexual threat.

If strategic dissemination of rivals' social information is a form of female intrasexual competition, then women who are more (compared with less) competitive should be expected to more readily transmit reputation-harming information about same-sex rivals. Extant evidence is tentatively suggestive of this assertion: women who more frequently (relative to less frequently) compare their appearance to others, a tactic that presumably allows women to estimate their competitive advantage in mating contexts, engage in more indirect aggression towards peers (Arnocky, Sunderani, Miller, & Vaillancourt, 2012). Whether highly

competitive women are especially likely to engage in strategic information transmission about rivals has yet to be examined empirically. Our investigation filled this gap by testing the hypothesis that highly (versus less) competitive women would be more likely to use social information strategically to harm other women's reputations. To the degree that these behaviors are tactics of romantic competition, then women who are competitive in mating domains in particular should be especially likely to deploy such tactics. Therefore, in Study 4, we examined whether women's dispositional levels of mating competitiveness would predict their harmful transmission of same-sex rivals' information, above and beyond their general level of competitiveness.

## 2. The current investigation

Five studies tested the prediction that women selectively transmit rivals' social information in response to romantic threat. An initial pilot study established various pieces of social information that effectively damage women's reputations and undermine their ability to acquire new social and romantic partners. These statements were then employed as dependent measures in the subsequent studies. Study 1 tested the prediction that women would transmit social information that harmed and withhold social information that helped the reputation of a woman who ostensibly flirted with their romantic partners compared to one who did not. Studies 2 and 3 tested the prediction that women would transmit reputation-damaging information and withhold reputation-enhancing information about women who were physically attractive (thus indirectly threatening), compared to less attractive. Study 4 tested the hypothesis that women would strategically harm and not help the reputation of a woman clothed provocatively (a cue of sexual openness) compared to conservatively. Study 5 examined a behavioral measure of women's information transmission; it tested the prediction that women would be more likely to repeat reputation-damaging information about a female confederate dressed provocatively compared to conservatively. All five studies measured individual differences in competitiveness to test the hypothesis that women who are more (compared to less) competitive would transmit more damaging information about their same-sex conspecifics. Across studies, we report all measures, manipulations, and exclusions.

### 3. Pilot study

A pilot study was conducted to establish whether various pieces of social information would harm or help a target woman's desirability as a social partner. Men and women rated a hypothetical female target's interpersonal desirability and morality upon learning various pieces of information about her. Male participants completed additional items assessing the target's desirability as a short-term and long-term romantic partner.

## 4. Method

### 4.1. Participants and procedure

A sample of 111 individuals (48 men,  $M_{\text{age}} = 35.3$  years, age range: 19–65 years) responded to an online survey posted on Amazon's Mechanical Turk. After providing consent, participants were told to imagine a woman, named Francesca, had just joined their social group. Next, participants were sequentially exposed to ten statements ostensibly about Francesca and asked to evaluate her in response to each. The statements were presented individually and in randomized order to minimize carry over effects from other statements. Five of the ten pieces of information were predicted to harm perceptions of the female target: “she sleeps around a lot”, “she cheated on her last boyfriend”, “she used to be obese”, “she thinks she might be pregnant”, “she has an STD”. The remaining five statements were predicted to enhance perceptions of the female target: “she donates to charity”, “her IQ classifies her as a

genius”, “she is a great singer”, “she speaks four different languages”, and “she has traveled all over the world”. In one scenario, no additional information about Francesca was presented. This scenario served as the baseline condition, to which the ratings of each of the ten statements were compared.

4.2. Dependent measures

In response to each statement, participants rated the female target using 7-point scales (1 = *not at all*, 7 = *extremely*). Participants reported how moral they believed her to be and how much they would like her as a friend. Male participants were asked to assume they were single as they completed three additional items assessing how much they would want to have sex with her, how much they would want to date her, and how much they would want to marry her.

5. Results

Paired samples *t*-tests compared participants' perceptions of the female target when no information was presented to their perceptions when each piece of information was presented. Men's and women's responses were analyzed independently and are thus presented separately in Tables 1 and 2, respectively. Four of the five statements predicted to harm a woman's reputation indeed tarnished men's perceptions of the female target. The statement that the target used to be obese did not harm men's perceptions, and unexpectedly, enhanced women's perceptions of the target, and was therefore omitted as a dependent measure in the subsequent studies. Although the statement that the female target thought she might be pregnant harmed men's perceptions of her desirability, the same statement slightly enhanced women's perceptions of the target's morality and desirability as a friend. This item was also dropped from subsequent studies because it could not be clearly established whether women's transmission of this statement would indicate an intention to harm another woman's reputation. Four

**Table 2**  
Descriptive statistics for female participants' responses to reputation statements in Pilot Study.

	Moral Mean (SD) <i>t</i> (62), <i>d</i>	Friend Mean (SD) <i>t</i> (62), <i>d</i>
No information	4.39 (0.92)	4.44 (1.15)
<b>Sleeps around</b>	3.08 (1.52) <i>t</i> = -6.00, <i>d</i> = 1.04***	3.41 (1.53) <i>t</i> = -4.83, <i>d</i> = 0.76***
<b>Cheated on previous boyfriend</b>	2.83 (1.39) <i>t</i> = -8.23, <i>d</i> = 1.32***	3.19 (1.39) <i>t</i> = -6.28, <i>d</i> = 0.98***
Used to be obese	4.86 (1.20) <i>t</i> = 3.42, <i>d</i> = 0.44**	4.97 (1.23) <i>t</i> = 3.31, <i>d</i> = 0.45**
Might be pregnant	4.57 (1.20) <i>t</i> = 1.26, <i>d</i> = 0.17	4.60 (1.28) <i>t</i> = 0.84, <i>d</i> = 0.13
<b>Has an STD</b>	3.50 (1.25) <i>t</i> = -5.00, <i>d</i> = 0.81***	3.68 (1.49) <i>t</i> = -4.43, <i>d</i> = 0.57***
<b>Donates to charity</b>	5.56 (1.07) <i>t</i> = 8.47, <i>d</i> = 1.17***	5.13 (1.18) <i>t</i> = 3.93, <i>d</i> = 0.59***
<b>Genius IQ</b>	4.84 (0.92) <i>t</i> = 3.40, <i>d</i> = 0.49**	5.10 (1.20) <i>t</i> = 3.32, <i>d</i> = 0.56**
Great singer	4.51 (1.00) <i>t</i> = 0.98, <i>d</i> = 0.12†	4.78 (1.20) <i>t</i> = 1.87, <i>d</i> = 0.29†
<b>Speaks four languages</b>	4.79 (1.23) <i>t</i> = 2.97, <i>d</i> = 0.37**	5.03 (1.34) <i>t</i> = 2.86, <i>d</i> = 0.47**
<b>Traveled the world</b>	4.89 (1.14) <i>t</i> = 3.51, <i>d</i> = 0.48**	5.35 (1.26) <i>t</i> = 4.63, <i>d</i> = 0.75***

Note. Bolded items were selected as dependent measures in subsequent studies.

† *p* < .10.  
\* *p* < .05.  
\*\* *p* < .01.  
\*\*\* *p* < .001.

**Table 1**  
Descriptive statistics for male participants' responses to reputation statements in Pilot Study.

	Moral Mean (SD) <i>t</i> (47), <i>d</i>	Friend Mean (SD) <i>t</i> (47), <i>d</i>	Sex Mean (SD) <i>t</i> (47), <i>d</i>	Date Mean (SD) <i>t</i> (47), <i>d</i>	Marry Mean (SD) <i>t</i> (47), <i>d</i>
No information	4.46 (0.74)	4.73 (1.16)	3.88 (1.53)	3.88 (1.10)	3.10 (1.39)
<b>Sleeps around</b>	2.77 (1.48) <i>t</i> = -7.70, <i>d</i> = 1.44***	3.90 (1.16) <i>t</i> = -3.87, <i>d</i> = 0.72***	3.25 (2.15) <i>t</i> = -2.48, <i>d</i> = 0.34*	2.29 (1.32) <i>t</i> = -6.71, <i>d</i> = 1.31***	1.96 (1.25) <i>t</i> = -5.10, <i>d</i> = 0.86***
<b>Cheated on previous boyfriend</b>	2.33 (1.08) <i>t</i> = -11.96, <i>d</i> = 2.30***	3.35 (1.47) <i>t</i> = -6.49, <i>d</i> = 1.04***	2.94 (1.86) <i>t</i> = -3.99, <i>d</i> = 0.55***	2.00(1.13) <i>t</i> = -8.52, <i>d</i> = 1.69***	1.63 (1.02) <i>t</i> = -6.76, <i>d</i> = 1.21***
Used to be obese	4.40 (1.25) <i>t</i> = -0.32, <i>d</i> = 0.06	4.81 (1.10) <i>t</i> = -0.42, <i>d</i> = 0.07	3.46 (1.56) <i>t</i> = -1.84, <i>d</i> = 0.27†	3.79 (1.41) <i>t</i> = -0.37, <i>d</i> = 0.07	2.92 (1.35) <i>t</i> = -0.93, <i>d</i> = 0.13
Might be pregnant	3.85 (1.38) <i>t</i> = -2.91, <i>d</i> = 0.55***	4.29 (1.50) <i>t</i> = -1.91, <i>d</i> = 0.33†	2.38 (1.57) <i>t</i> = -5.90, <i>d</i> = 0.97***	2.38 (1.42) <i>t</i> = -5.74, <i>d</i> = 1.18***	2.17 (1.37) <i>t</i> = -3.70, <i>d</i> = 0.67**
<b>Has an STD</b>	3.29 (1.46) <i>t</i> = -5.13 <i>d</i> = 1.01***	3.79 (1.44) <i>t</i> = -3.68, <i>d</i> = 0.72***	1.40 (0.90) <i>t</i> = -10.16, <i>d</i> = 1.98***	1.94 (1.33) <i>t</i> = -7.76, <i>d</i> = 1.59***	1.60 (0.96) <i>t</i> = -6.86, <i>d</i> = 1.26***
<b>Donates to charity</b>	5.52 (1.05) <i>t</i> = 5.91, <i>d</i> = 1.17***	5.44 (1.13) <i>t</i> = 4.08, <i>d</i> = 0.62***	4.00 (1.61) <i>t</i> = 0.74, <i>d</i> = 0.08	4.38 (1.54) <i>t</i> = 2.45, <i>d</i> = 0.37*	3.69 (1.73) <i>t</i> = 2.83, <i>d</i> = 0.38**
<b>Genius IQ</b>	4.71 (1.29) <i>t</i> = 1.47, <i>d</i> = 0.24	5.54 (1.43) <i>t</i> = 4.18, <i>d</i> = 0.62***	4.21 (1.73) <i>t</i> = 1.74, <i>d</i> = 0.20†	4.72 (1.51) <i>t</i> = 4.13, <i>d</i> = 0.64***	4.00 (1.91) <i>t</i> = 4.01, <i>d</i> = 0.54***
Great singer	4.50 (1.03) <i>t</i> = 0.29, <i>d</i> = 0.04	5.04 (1.13) <i>t</i> = 1.62, <i>d</i> = 0.27	3.96 (1.61) <i>t</i> = 0.44, <i>d</i> = 0.05	4.27 (1.40) <i>t</i> = 2.19, <i>d</i> = 0.31*	3.35 (1.67) <i>t</i> = 1.43, <i>d</i> = 0.16
<b>Speaks four languages</b>	4.44 (1.30) <i>t</i> = 0.12, <i>d</i> = 0.02	5.29 (1.52) <i>t</i> = 2.82, <i>d</i> = 0.41**	4.27 (1.74) <i>t</i> = 1.92, <i>d</i> = 0.24†	4.38 (1.51) <i>t</i> = 2.62, <i>d</i> = 0.38*	3.79 (1.96) <i>t</i> = 2.91, <i>d</i> = 0.41**
<b>Traveled the world</b>	4.44 (1.15) <i>t</i> = -0.16, <i>d</i> = 0.02	5.58 (1.30) <i>t</i> = 5.15, <i>d</i> = 0.69***	3.85 (1.81) <i>t</i> = 0.13, <i>d</i> = 0.02	4.44 (1.56) <i>t</i> = 3.15, <i>d</i> = 0.41**	3.52 (1.81) <i>t</i> = 2.16, <i>d</i> = 0.26*

Note. Bolded items were selected as dependent measures in subsequent studies.

† *p* < .10.  
\* *p* < .05.  
\*\* *p* < .01.  
\*\*\* *p* < .001.

of the five items predicted to enhance a woman's desirability indeed enhanced men's and women's perceptions. The statement that the target was a great singer did not consistently enhance men's or women's perceptions and was therefore dropped from subsequent studies.

## 6. Discussion

The pilot study identified three statements that significantly harmed perceptions of a female target's desirability as a friend and a romantic partner: she sleeps around a lot, she cheated on her last boyfriend, and she has an STD. This pattern is consistent with previous work demonstrating that men show a relatively strong preference for sexual chastity and fidelity when selecting romantic partners (Buss, 1989). Study 1 also identified four pieces of information that enhanced perceptions of a female target's desirability as a friend and romantic partner: "she donates to charity", "her IQ classifies her as a genius", "she speaks four different languages", and "she has traveled all over the world". Because these seven statements demonstrably shifted social impressions of a female target, they were employed as dependent measures in the investigation's subsequent studies.

## 7. Study 1

If women compete with one another to secure relationships with high-quality romantic partners, then a critical domain of their competition should center on protecting established relationships from potential mate poachers. In Study 1, female participants were presented with a photo of an attractive woman and were told to imagine she recently joined their social group. By random assignment, half were also told that the target had been flirting with their boyfriends. In the other condition, there was no mention of her flirting. Next, all participants were presented with seven pieces of the target's ostensible personal information (three reputation-harming and four reputation-enhancing, confirmed by the pilot study). Women were predicted to transmit reputation-harming information and withhold reputation-enhancing information about the female target when she threatened the stability of their own romantic relationships compared to when she did not. Participants also completed a competitiveness scale. Highly (compared with less) competitive women were predicted to transmit more negative and less positive social information about the female target.

## 8. Method

### 8.1. Participants

Because no previous work had used a similar design or dependent measures, we decided to collect a large sample size to ensure adequate power. We aimed for at least 100 female participants per cell, but because attention is often poor in online investigations (Oppenheimer, Meyvis, & Davidenko, 2009), we recruited additional participants to account for attention check failures. Two hundred and twenty-three women from the United States responded to a survey posted on Amazon's Mechanical Turk. To ensure high data quality, we recruited only American Mturkers with an approval rating higher than 90%. Six began but did not complete the survey and were excluded from analyses. Three failed the attention check and were removed from analyses. The final sample consisted of 214 women ( $M_{\text{age}} = 34.24$  years, age range: 18–72 years). Post-hoc power analysis revealed that we were sufficiently powered to detect our effects ( $\text{power} > 0.99$ ).

### 8.2. Procedure

All participants were presented with the same photo of a young, physically attractive female target. Women were randomly assigned to see one of two descriptions underneath the photo. In the non-threat condition, the description read "This is Veronica. She just joined your

social group." The threat condition presented the same description with the addition of the phrase, "and she has been flirting with your boyfriend." Next, all participants were told to imagine they had discovered seven pieces of social information about the target (order randomized). Four of these were reputation-enhancing (confirmed by the pilot data): her IQ classifies her as a genius, she donates to charity, she speaks four languages, and she has traveled around the world. Three of these were reputation-harming: she sleeps around a lot, she cheated on her last boyfriend, and she has an STD. Participants indicated on a 7-point scale (1 = not at all likely, 7 = extremely likely) how likely they would pass along each piece of information.

Next, to assess women's individual differences in competitiveness, participants completed the Achievement Motivation Scale (AMS; Cassidy & Lynn, 1989) using a 5-point scale (1 = strongly disagree, 5 = strongly agree). For the purposes of this investigation, only scores on the competitiveness subscale were examined ( $M = 2.90$ ,  $SD = 0.72$ ,  $\alpha = 0.78$ ). A sample item reads: "It annoys me when other people perform better than I do". Last, participants completed basic demographic items.

### 8.3. Results

Because participants reported their likelihood of transmitting various pieces of information, we used multilevel modeling (HLM 7.01; Raudenbush, Bryk, & Congdon, 2013) to account for the interdependent nature of the data. To examine whether women's likelihood of transmitting the reputation-relevant pieces information differed by condition, we regressed transmission likelihood onto a reputation impact dummy code (reputation harming =  $-1$ , reputation enhancing =  $1$ ) for each of the seven statements at level 1 as well as a dummy code reflecting experimental condition (0 = no flirt, 1 = flirt) at level 2 of the model. To examine whether dispositional differences in women's competitiveness predicted their information transfer, we entered women's centered competitiveness scores into level 2 of the model. We also included a relationship status dummy code (0 = partnered, 1 = single) into level 2 of the model. This two-level model therefore simultaneously accounted for the within-person repeated measures (participants' likelihood of transmitting each statement) as well as the between-person effects of condition, dispositional competitiveness, and relationship status. A secondary model tested whether the effects of women's competitiveness and relationship status differed in response to the experimental condition by entering a competitiveness-by-condition interaction term and a relationship status-by-condition interaction term into level 2 of the model. Each term was allowed to vary within the models across all studies. To facilitate interpretation of results, we report effect size  $r$  (see Rosenthal & Rosnow, 1991).

Consistent with predictions, flirting condition significantly predicted women's transmission of the reputation-relevant information, as indicated by an interaction between flirtation condition and reputation impact,  $B = -1.85$ ,  $SE = 0.17$ ,  $t(210) = -10.67$ ,  $p < .001$ ,  $r = 0.59$ . When the female target ostensibly flirted with the participants' romantic partners, participants transmitted more reputation-harming over reputation-enhancing information about her. Furthermore, women's dispositional differences in competitiveness significantly predicted the reputation-impact of their information transmission,  $B = -0.21$ ,  $SE = 0.09$ ,  $t(210) = -2.41$ ,  $p = .017$ ,  $r = 0.16$ . The secondary model found that the effect of women's competitiveness did not differ across conditions,  $B = -0.050$ ,  $SE = 0.18$ ,  $t(208) = -0.29$ ,  $p = .773$ ,  $r = 0.02$ , indicating that highly competitive women were more likely to transmit reputation-harming and withhold reputation-enhancing information about a female target, regardless of whether she posed a direct romantic threat. Relationship status did not significantly predict the valence of women's transmission,  $B = 0.08$ ,  $SE = 0.20$ ,  $t(210) = 0.42$ ,  $p = .675$ ,  $r = 0.03$ , nor their response to the flirting manipulation,  $B = 0.015SE = 0.41$ ,  $t(208) = -0.03$ ,  $p = .971$ ,  $r = 0.01$ .

## 9. Discussion

Study 1 found that women selectively transmitted information that harmed and withheld information that helped the reputation of a target woman who directly threatened their established partnerships. Furthermore, individual differences in competitiveness predicted women's likelihood of disclosing damaging social information about the female target, independent of whether she flirted with their partners. These patterns support the assertion that women's dissemination of same-sex peers' social information is a competitive tactic.

## 10. Study 2

Study 1 found support for the investigation's primary prediction: women strategically relay social information about same-sex romantic rivals who directly threaten their romantic partnerships. If men value physical attractiveness in their romantic partners, then attractive women should indirectly threaten other women's romantic opportunities by serving as appealing alternatives to partnered men and potential partners to single men. To the degree that selective information transmission is a tactic used to harm threatening romantic rivals, women should transmit more reputation-harming and less reputation-enhancing information about attractive, compared to less attractive women. Study 2 therefore tested the prediction that women would use social information competitively against a rival who only indirectly threatened their romantic prospects—merely by being physically attractive and joining their social group. Using an online survey, women were randomly assigned to view a photo of either a highly attractive or less attractive woman (confirmed by independent raters). Then, participants reported how likely they would transmit the same seven pieces of social information from Study 1. As in Study 1, Study 2 also presented women with a competitiveness scale. Highly competitive women, compared to less competitive, were predicted to more strongly transmit reputation-harming and withhold reputation-enhancing information about a same-sex competitor.

## 11. Method

### 11.1. Participants

We expected that manipulating physical attractiveness would be a weaker effect than overt mate poaching attempts and therefore aimed for a conservative sample size of at least 100 per cell. We over-recruited to ensure we would have this amount after accounting for attention check failures (Oppenheimer et al., 2009). Two hundred and twenty-one women from the United States responded to a survey posted on Amazon's Mechanical Turk. One male responded; two individuals failed the attention check; and one individual began but did not complete the survey. These four individuals were removed from analyses. The final sample consisted of 217 women ( $M_{\text{age}} = 33.1$  years, age range = 18–72 years). A post-hoc power analysis revealed we were slightly underpowered to test our primary hypothesis with our final sample ( $\text{power} = 0.68$ ). However, this power estimate was likely conservative, as it did not account for the use of hierarchical linear modeling (see Finkel, Eastwick, & Reis, 2015). Nonetheless, we used the subsequent study (Study 3) as a conceptual replication to address any power concerns.

### 11.2. Procedure

Participants were randomly assigned to view one of two profiles of a female target. The two photos in the profiles each depicted the face and torso of a young Asian woman, who differed in attractiveness. Independent observers ( $N = 41$ ; 27 men) judged the attractive target female to be significantly more physically attractive,  $M = 7.90$ ,  $SD = 1.70$ ;  $t(40) = 8.72$ ,  $p < .001$ ,  $d = 2.16$ , and sexually appealing,

$M = 7.88$ ,  $SD = 1.65$ ;  $t(40) = 8.89$ ,  $p < .001$ ,  $d = 2.22$ , compared to the unattractive target,  $M = 3.85$ ,  $SD = 2.04$ ;  $M = 3.61$ ,  $SD = 2.16$ , respectively. Raters did not perceive the two targets to differ in kindness,  $t(40) = -0.61$ ,  $p = .546$ , or age,  $t(40) = 0.492$ ,  $p = .625$ . Therefore, participants were randomly exposed to either the photo of a relatively attractive or unattractive target woman. The caption underneath the photo was held constant across conditions and read: “*This is Veronica. She just joined your social group.*”

Next, participants were asked to imagine they discovered the same seven pieces of social information from Study 1 about the target and reported how likely they would transmit each. Participants then completed the same competition subscale from Study 1 ( $M = 2.98$ ,  $SD = 0.69$ ,  $\alpha = 0.77$ ) and demographic questions.

## 12. Results

Women's responses to the attractiveness manipulation were compared using multilevel models. Women's likelihood of transmitting the various pieces of information were each regressed onto a reputation impact dummy code ( $-1 =$  reputation-harming,  $1 =$  reputation-enhancing) at level 1. To measure the between-person effects, a condition dummy code reflecting the target's romantic threat ( $0 =$  unattractive,  $1 =$  attractive), participants' centered competitiveness scores, and a relationship status dummy code ( $0 =$  partnered,  $1 =$  single) were entered into level 2 of the model. A secondary model tested whether the between-person effects of competitiveness and relationship status differed in response to condition by including competitiveness-by-condition and relationship status-by-condition interaction terms into level 2 of the model.

Supporting predictions, the target's attractiveness significantly moderated the relation between women's transmission likelihood and the reputation impact of the statements,  $B = -0.74$ ,  $SE = 0.14$ ,  $t(213) = -5.24$ ,  $p < .001$ ,  $r = 0.34$ , such that women transmitted more reputation-harming and less reputation-enhancing information about the attractive compared to the less attractive female target. Women's dispositional differences in competitiveness also significantly moderated their likelihood of transmitting the reputation relevant information,  $B = -0.20$ ,  $SE = 0.07$ ,  $t(213) = -2.88$ ,  $p = .004$ ,  $r = 0.19$ . As in Study 1, this main effect of competitiveness did not differ significantly in response to the attractiveness manipulation,  $B = 0.14$ ,  $SE = 0.14$ ,  $t(211) = 0.98$ ,  $p = .331$ ,  $r = 0.07$ . That is, highly (versus less) competitive women were more likely to transmit reputation-harming versus reputation-enhancing information about a female target, regardless of whether she was particularly attractive. Women's relationship status did not predict the reputation impact of their information transmission,  $B = -0.01$ ,  $SE = 0.15$ ,  $t(213) = -0.09$ ,  $p = .932$ ,  $r = 0.01$ , or their response to the attractiveness manipulation,  $B = 0.29$ ,  $SE = 0.31$ ,  $t(211) = 0.94$ ,  $p = .347$ ,  $r = 0.06$ .

## 13. Discussion

Study 2 found that women transmitted more reputation-harming and withheld reputation-promoting information about an attractive compared to an unattractive rival. Whereas Study 1 found that women used gossip to undermine a woman who was overtly threatening, in that she was flirting with the participant's boyfriend, in Study 2 the threat was merely implicit. The threat consisted of no more than being attractive. That was, however, sufficient to motivate women's information transmission in ways that would damage the attractive target's reputation. The greater transmission of reputation-damaging information by highly competitive than less competitive women replicated the finding in Study 1 and suggests the competitive nature of such behaviors. In neither study did competitiveness interact with threat. That is, highly competitive women were more likely than other women to derogate another woman, regardless of her attractiveness.

One limitation of Study 2 is that it relied on only two photos. These

photos were chosen because they differed considerably in physical attractiveness. However, the attractive woman was depicted in a low-cut sports bra, revealing her cleavage, whereas the unattractive woman was more conservatively clothed. Therefore, it is unclear whether the findings from Study 2 were a product of the physical attractiveness or the clothing of the two target women. Study 3 addressed these limitations by including a larger array of female photos.

#### 14. Study 3

Study 3 was a conceptual replication of Study 2 but addressed one ambiguity in its findings based on using only two photos that differed both in clothing (including amount of skin revealed) and physical attractiveness. Study 3 used a wider variety of photos that varied in physical beauty, but depicted only the female targets' head and shoulders to remove the influence of clothing. Another innovation of Study 3 was to assess explicit liking for the target female. Until this point, the investigation has not explored whether women consciously dislike the female targets whose reputations they defamed. Study 3 therefore included two measures of explicit liking to address this open question.

Female participants were randomly assigned to view one of twelve photos of a female target. These photos were independently rated for sexual appeal and physical attractiveness, which were combined to form a romantic threat composite. We predicted that women's rate of transmitting reputation-harming and withholding reputation-enhancing information would be predicted by the physical attractiveness (i.e., romantic threat) of the target females.

#### 15. Method

##### 15.1. Participants

An additional goal of Study 3 was to address the power concerns from Study 2. We aimed for a conservative estimate of  $N = 100$  per photograph, but aimed slightly higher to account for attention check failures. One thousand two hundred and forty-eight individuals from the United States responded to a survey posted on Amazon's Mechanical Turk. Twelve participants were male; 46 began but did not finish the survey; 19 failed the attention check. These participants were therefore excluded, and the final sample consisted of 1171 women ( $M_{\text{age}} = 36.8$  years, age range: 18–80 years). Post-hoc power analysis revealed that we were adequately powered ( $\text{power} = 0.81$ ) to detect our primary predicted effect.

##### 15.2. Materials

Twelve photos were selected from either the Li, Smith, Griskevicius, Cason, and Bryan (2010) photo set or from HotorNot.com (a public website). Photos were chosen if they depicted clearly the head and shoulders of a young woman without displaying cleavage. Photos were rated by an independent sample of 41 individuals (29 women;  $M_{\text{age}} = 30.29$  years, age range: 19–54 years) for physical attractiveness (1 = very unattractive, 10 = very attractive) and sexual appeal (1 = very sexually unappealing, 10 = very sexually appealing). Presentation of the photos was randomized. Attractiveness and sex appeal ratings were highly correlated ( $\alpha$ 's = 0.89–0.98) and were therefore averaged to form a 'romantic threat' composite for each photo. Romantic threat composite values ranged from 3.78–8.72 (out of 10) across the twelve photos.

##### 15.3. Procedure

Women were randomly exposed to one photo (out of twelve possible) of a female target. Underneath the photo read the description: "This is Veronica. She just joined your social group. You found out the

following information about her. Which would you be most likely to pass along?". After viewing the profile, participants were presented with the same seven pieces of social information used in the previous studies (order randomized). Participants indicated on a 7-point scale (1 = not at all likely, 7 = extremely likely) how likely they would be to transmit each. Next, participants indicated on a 7-point scale (1 = not at all, 7 = extremely) how much they liked the female target and desired her as a friend. Participants' ratings of how much they liked and desired the target as a friend were also combined to form an explicit liking composite ( $\alpha = 0.92$ ). Last, participants completed the same competitiveness subscale ( $M = 2.88$ ,  $SD = 0.70$ ,  $\alpha = 0.78$ ) and demographic items from the previous studies.

#### 16. Results

To assess whether the valence of women's information transmission differed as a function of the female targets' attractiveness, transmission likelihood was regressed onto a reputation impact dummy code ( $-1 = \text{reputation-harming}$ ,  $1 = \text{reputation-enhancing}$ ) within level 1 as well as the target female's centered romantic threat score, women's centered competitiveness score, and a relationship status dummy code ( $0 = \text{partnered}$ ,  $1 = \text{single}$ ) within level 2 of a multilevel model. To test whether women's aggressive information transmission would emerge controlling for the degree to which participants explicitly liked the female target and desired her as a friend, participants' explicit liking composite was also entered as a covariate into the intercept of level 2. A secondary model tested whether women's dispositional differences shaped their response to the female targets' appearance by adding competitiveness-by-threat and relationship status-by-threat interaction terms to level 2.

As predicted, the reputation impact of women's information transfer differed significantly as a function of the female target's romantic threat,  $B = -0.09$ ,  $SE = 0.03$ ,  $t(1166) = -3.01$ ,  $p = .003$ ,  $r = 0.09$ , such that women transmitted reputation-harming and withheld reputation-enhancing information about more (versus less) sexually attractive female targets. Because women's explicit feelings towards the female targets were entered as a covariate, this effect indicates women harmed and did not help the reputations of attractive women, regardless of how much they explicitly liked those women.

As with previous studies, women's dispositional levels of competitiveness significantly predicted the valence of their information transmission,  $B = -0.22$ ,  $SE = 0.03$ ,  $t(1166) = -6.39$ ,  $p < .001$ ,  $r = 0.18$ , and this association did not differ as a function of the target female's romantic threat,  $B = -0.05$ ,  $SE = 0.03$ ,  $t(1164) = -1.40$ ,  $p = .161$ ,  $r = 0.04$ . That is, highly competitive women transmitted more reputation-harming information about female targets, regardless of those targets' sexual attractiveness. Women's relationship status did not significantly predict their information response to the female targets,  $B = 0.07$ ,  $SE = 0.07$ ,  $t(1166) = 0.98$ ,  $p = .326$ ,  $r = 0.03$ , nor did it interact with female targets' romantic threat,  $B = 0.05$ ,  $SE = 0.07$ ,  $t(1164) = 0.78$ ,  $p = .438$ ,  $r = 0.02$ .

#### 17. Discussion

The results of Study 3 replicated those found in Study 2 using a greater number of female photos. Women's tendency to transmit reputation-harming social information was amplified by the attractive appearance of their rivals. Of note, this strategic information transmission persisted controlling for the degree to which women reported explicitly liking the female target. This pattern suggests that women's competitive information disclosure does not stem entirely from a conscious disliking of their same-sex rivals. Furthermore, replicating the pattern found throughout previous studies, highly competitive women were especially likely to disclose more reputation-harming and less reputation-enhancing information about other women.





Fig. 1. Clothing worn by the confederate in lab Study 5 and used as stimuli in online Study 4.

## 18. Study 4

Studies 1–3 supported the primary prediction that women transmit more reputation-damaging information strategically against other women who were more, compared to less, threatening romantic rivals. Another proximate cue that women may use to detect the romantic threat level of same-sex peers is clothing. Indeed, women dress provocatively to flirt and advertise sexual interest, which increases their sexual appeal to men (Grammer, Renninger, & Fischer, 2004; Santin, 1995). We noted that Study 2 manipulated threat by varying both physical attractiveness and clothing style, and so Study 3 sought to hold clothing constant. Study 4 did the reverse, holding the target's physical attractiveness constant but varying her clothing style. Specifically, participants viewed one of two pictures of the same woman, dressed in either sexy or conservative clothes.

Study 4 tested the prediction that women would transmit reputation-harming and withhold reputation-enhancing social information about a woman dressed in a sexually provocative manner, as compared to when she was conservatively dressed (see Fig. 1). In addition to assessing women's general competitiveness, Study 4 also included a measure of women's mating competitiveness to determine whether women are competitive in romantic domains would be particularly likely to use reputation-harming tactics against a sexualized rival.

Study 4 also served as an independent validation study for the procedures to be used in the lab experiment (Study 5). Study 5 sought to test women's competitive use of social information among college students. Therefore, the study required social information that was both reputation-harming and plausible for college women. Because many college women drink alcohol (O'Malley & Johnston, 2002), we decided that a story in which a female confederate drunkenly engaged in sexually promiscuous behavior would fit both criteria. Pre-test data confirmed that these two pieces of information harmed men and women's perceptions of a female target.<sup>1</sup> Study 4 therefore included these

<sup>1</sup> Three hundred and thirty-one participants (144 men;  $M_{\text{age}} = 36.4$  years, age range: 18–69 years) were told to imagine that a woman named Francesca had joined their social group. Participants were randomly assigned to one of three conditions. In the first, there was no additional information presented. In the second, participants were told “you hear from people that she is hung over today” and in the third “you hear from people that she hooked up with two guys the night before”. All participants rated her on how moral she was and how much they would like her as a friend. Male participants also indicated to

two pieces information as dependent measures in addition to the seven used in Studies 1–3.

Female participants were randomly assigned to view a photo of the female confederate dressed either conservatively or provocatively and indicated their likelihood of transmitting the same seven pieces of social information used in Studies 1–3, along with two new pieces of social information [i.e., that she was hung over, that she ‘hooked up’ (engaged in casual sex) with two men the previous night]. Female participants rated the confederate's physical attractiveness, sexual appeal to men, and threat level to ensure that the confederate was a more formidable romantic rival when dressed provocatively compared to conservatively.

If women's selective transmission of information is a tactic employed to harm the reputations of romantic rivals who threaten their own romantic prospects, then these behaviors should be predicted by assessments of threat. That is, to the degree that an appealing same-sex rival represents a threat to one's likelihood of attracting or retaining the investment of desirable romantic partners, this threat detection should compel compensatory competitive behaviors, including the transmission of reputation tarnishing information. Mediation analyses therefore explored whether women's perceptions of the target's threat would mediate participants' informational responses to her sexualized clothing.

## 19. Method

### 19.1. Participants

We aimed for a conservative sample size of at least 100 per cell, accounting for failed attention checks. Two hundred and sixty-three individuals from the United States responded to a survey posted on

(footnote continued)

what degree they would like to date and marry her. A between-subjects one-way ANOVA compared responses across participants. Compared to when no information was presented (baseline) learning that the target was hung over harmed participants' judgments of her morality ( $p = .009$ ) and somewhat harmed interest in befriending her ( $p = .132$ ), although it did not significantly harm men's interest in dating ( $p = .182$ ) or marrying her ( $p = .668$ ). Learning that the target had hooked up with two guys, however, harmed participants' judgments of her morality ( $p < .001$ ) and interest in befriending her ( $p < .001$ ), along with men's interest in dating ( $p < .001$ ) and marrying her ( $p < .001$ ).

Amazon's Mechanical Turk. Four failed the attention check, three were male, and four began but did not complete the survey. After these individuals were removed, the final sample consisted of 252 women ( $M_{\text{age}} = 37.4$  years, age range: 18–74 years). Post-hoc power analysis indicated that we were slightly under-powered to detect our primary effect ( $\text{power} = 0.69$ ). Although not ideal, this estimate was likely conservative (Finkel et al., 2015), and we used the subsequent lab Study 5 as a conceptual replication of Study 4's manipulation.

## 19.2. Procedure

Women were randomly assigned to view one of two versions of a female profile. Both versions included a photo of a female confederate (to be involved in Study 5) with the description "This is Francesca. She just joined your social group. You found out the following information about her. Which would you be most likely to pass along?". The female confederate was depicted in either provocative or conservative clothing (to be worn in Study 5), which served as the primary manipulation (see Fig. 1). After viewing the profile, participants rated how likely they would disclose the seven pieces of social information used across previous studies as well as the two new pieces of information (i.e., that she was hung over and hooked up with two men the previous night; order randomized).

After indicating their likelihood of transmitting the nine pieces of social information, participants provided their perceptions of the confederate. Using 7-point scales (1 = not at all, 7 = completely), participants reported the degree to which she was attractive to men, sexually appealing to men, promiscuous, threatening, nice, and how comfortable they would feel about her spending time with their romantic partner. As with previous studies, participants completed the AMS competitiveness subscale ( $M = 2.90$ ,  $SD = 0.72$ ,  $\alpha = 0.80$ ). They also completed the Faer, Hendriks, Abed, and Figueredo (2005) Female Competition for Status/Mates Measure using a 6-point scale (0 = Strongly Disagree, 5 = Strongly Agree). However, for the purposes of this investigation, scores on only the 8-item Competition for Mates subscale were used ( $M = 3.12$ ,  $SD = 1.03$ ,  $\alpha = 0.86$ ). A sample item reads "I prefer to go out to clubs with female friends who are less attractive than I am." Last, participants answered basic demographic questions.

## 20. Results

To verify that the manipulation sufficiently altered women's assessments of the female target's romantic threat, perceptions across clothing condition were compared using independent samples  $t$ -tests. Supporting the efficacy of the manipulation, when the confederate was depicted in provocative clothing, she was perceived as more attractive to men,  $t(249) = 4.90$ ,  $p < .001$ ,  $d = 0.61$ , more sexually appealing to men,  $t(250) = 7.23$ ,  $p < .001$ ,  $d = 0.90$ , more promiscuous,  $t(250) = 4.90$ ,  $p < .001$ ,  $d = 0.62$ , and more threatening  $t(250) = 3.45$ ,  $p < .001$ ,  $d = 0.43$ , compared to when she was dressed conservatively. Participants were slightly less comfortable with the female target's spending time with their romantic partners when dressed provocatively compared to conservatively, though this effect was not statistically significant,  $t(248.2) = -0.89$ ,  $p = .374$ ,  $d = 0.11$ . Of note, female participants also perceived the target to be less nice when dressed provocatively compared to conservatively,  $t(250) = -2.70$ ,  $p < .001$ ,  $d = 0.34$ .

Similar multi-level models examined women's information responses to the clothing manipulation. Women's likelihood of transmitting the nine pieces of information was regressed onto a reputation impact dummy code ( $-1 =$  reputation harming,  $1 =$  reputation enhancing) at level 1 as well as a clothing condition dummy code (0 = conservative, 1 = provocative) and a relationship status dummy code (0 = partnered, 1 = single) at level 2. To determine whether women's competitiveness in mating domains predicted their information transmission above and beyond their general competitiveness,

women's centered general competitiveness and mating competitiveness scores were both entered into level 2 of the model. A secondary model explored whether women's dispositional differences moderated their response to the manipulation by adding the relationship status-by-condition, general competitiveness-by-condition, and mating competitiveness-by-condition interaction terms to level 2 of the model.

Supporting predictions, the target's clothing significantly predicted women's transmission of reputation-relevant information,  $B = -0.26$ ,  $SE = 0.13$ ,  $t(246) = -2.02$ ,  $p = .044$ ,  $r = 0.13$ . That is, participants transmitted reputation-harming and withheld reputation-enhancing information about the provocatively, compared to conservatively dressed target. Women's dispositional differences in mating competitiveness,  $B = -0.27$ ,  $SE = 0.07$ ,  $t(246) = -3.63$ ,  $p < .001$ ,  $r = 0.23$ , but not general competitiveness,  $B = -0.10$ ,  $SE = 0.08$ ,  $t(246) = -1.35$ ,  $p = .179$ ,  $r = 0.09$ , predicted greater transmission of reputation-harming than reputation-enhancing information about the female target. A secondary model revealed that neither women's general,  $B = -0.15$ ,  $SE = 0.15$ ,  $t(243) = -1.04$ ,  $p = .300$ ,  $r = 0.07$ , nor mating competitiveness,  $B = -0.10$ ,  $SE = 0.15$ ,  $t(243) = -0.68$ ,  $p = .498$ ,  $r = 0.04$ , interacted with clothing condition to predict their information transmission. This pattern indicates that women who were highly competitive in romantic domains specifically, as opposed to those who were generally competitive, were most likely to transmit reputation-damaging information about a same-sex peer, regardless of her clothing. As with previous studies, women's relationship status did not significantly predict their information transmission,  $B = 0.16$ ,  $SE = 0.14$ ,  $t(246) = 1.14$ ,  $p = .257$ ,  $r = 0.07$ , nor did it interact with the clothing manipulation,  $B = -0.35$ ,  $SE = 0.28$ ,  $t(243) = -1.24$ ,  $p = .215$ ,  $r = 0.08$ .

Mediation analyses examined whether perceptions of threat mediated women's informational response to the target's clothing (see Fig. 2). As described above, the direct effect of clothing on women's information transfer was significant (Path C). To estimate whether clothing condition predicted women's threat perceptions (Path A), we regressed women's perceptions of the target's threat onto clothing condition, and included relationship status, competitiveness, and mating competitiveness as covariates. Because this model included only between-person variables, we used linear regression to estimate Path A. This linear regression model revealed that the target's clothing indeed predicted women's perceptions of the target's threat,  $b = 0.83$ ,  $SE = 0.21$ ,  $t(246) = 3.94$ ,  $p < .001$ . We returned to the multilevel models to estimate whether threat perceptions predicted the valence of women's information transfer (Path B). This model regressed women's information transmission onto a reputation impact dummy code at level 1 as well as a relationship status dummy code, centered threat perceptions, centered general competitiveness, and centered mating competitiveness at level 2. Perceptions of threat significantly predicted the valence of women's transmission of the reputation-relevant information,  $B = -0.24$ ,  $SE = 0.07$ ,  $t(246) = -3.51$ ,  $p < .001$ ,  $r = 0.22$ . The

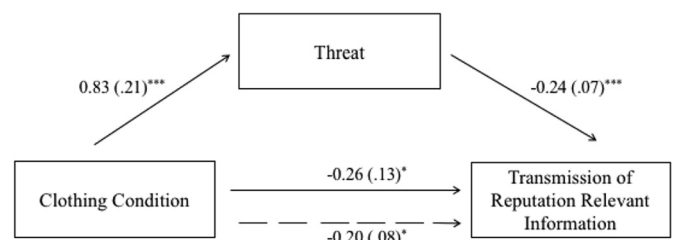


Fig. 2. Women's perception of the female confederate's threat mediates the relation between target's clothing on participants' transmission of reputation relevant information (Study 4). Standard errors are depicted in parentheses. Unstandardized regression coefficient depicted for path B. Solid line from IV to DV shows the total effect of the IV on the DV (c path); the dashed line shows the direct effect of the IV on the DV (c-prime path). \* $p < .05$ ; \*\*\* $p < .01$ ; \*\*\*\* $p < .001$ .

indirect effect (C') was estimated using the RMediation package, which provides confidence intervals for mediated effects using the distribution-of-product method (MacKinnon, 2008; Tofiqhi & MacKinnon, 2011). The indirect effect was statistically significant,  $b = -0.20$ ,  $SE = 0.08$ , 95% CI =  $[-0.37, -0.07]$ , revealing that the degree to which women perceived the provocatively clad confederate as more threatening statistically mediated their decisions to disclose her reputation-harming information (see Fig. 2).

## 21. Discussion

Study 4 demonstrated that women perceive another woman dressed provocatively as more attractive, sexually appealing to men, and threatening, as compared to when that same woman was dressed conservatively. Consistent with the pattern of results emerging throughout the investigation thus far, women transmitted more reputation-harming and less reputation-enhancing information about another woman when she was a more (compared to less) threatening romantic rival. The two new pieces of damaging social information followed this same pattern, supporting their use for the subsequent lab study (Study 5). Female participants' reputation-harming response to the provocatively clad target was fully statistically mediated by perceptions of her threat, further bolstering the claim that cues of sexual openness signal a female rival's romantic threat.

Individual differences in competitiveness again played a role in women's likelihood of disclosing reputation-tarnishing over reputation-enhancing information. More competitive women, both generally and in romantic domains in particular, were more likely to transmit reputation-harming than reputation-bolstering information about the female target, regardless of her clothing. Mating competitiveness was a stronger predictor than general competitiveness of women's disclosing reputation-harming information, granting support to the contention that women's transmission of social information is a tactic used to compete for romantic partners.

## 22. Study 5

Studies 1–4 supported the primary prediction that women transmit social information competitively about their same-sex rivals. However, the investigation thus far has been limited by its reliance on online and hypothetical data. Study 5 therefore brought the investigation into the laboratory to determine whether women's behaviors would follow the emergent competitive pattern from self-report. Female participants were led to believe that they were participating in a study with two other female participants about how people work together in groups. In reality, however, these two other women were confederates of the study. The first confederate was dressed either provocatively or conservatively (donning the outfits from Study 4), which served as the study's primary manipulation. During participants' interaction with her, she disclosed that she was hung over and had "hooked up" (i.e., engaged in casual sex) with two men the previous night. Participants then worked with the second female confederate, who asked neutrally about the first. Whether female participants disclosed the first confederate's personal information was the study's primary dependent variable. Participants were predicted to disclose the confederate's damaging information more often when she was dressed provocatively compared to conservatively.

## 23. Method

### 23.1. Participants

We recruited as many female participants as possible over the course of a semester. One hundred and four university women ( $M_{\text{age}} = 20$  years, age range = 18–39 years) participated in exchange for partial course credit. Post-hoc power analysis indicated that we had

adequate power to detect our primary predicted effect ( $power = 0.93$ ).

### 23.2. Procedure

When female participants arrived at the lab, they were joined by two other ostensible participants. Unbeknownst to the participants, these two women were confederates of the study. The first confederate, Francesca (pseudonym), was either dressed in conservative or provocative clothing, which was the study's primary manipulation (see Fig. 1). The second female confederate was always dressed in conservative clothing.

Participants were told that they were participating in a study investigating how people work together in groups. A male experimenter began the study by calling the three women into the lab and informing them that they would solve jigsaw puzzles in pairs. After providing consent, the participant was assigned to work with the first confederate, Francesca, who was either dressed provocatively or conservatively. Meanwhile, the second confederate was taken to another lab room. While working with the participant, Francesca confessed that she was hung over and that she had engaged in sex with two guys the previous night. After 5 min had passed, the experimenter ended the first puzzle solving session and told Francesca that she was done with her portion of the experiment and was free to leave.

The experimenter then brought the participant into the second lab room, where she would work with the second female confederate. After about 30 s of working on the puzzles, the confederate asked "so how was working with the other girl?". The primary dependent variable was whether the participant would divulge any of Francesca's information. If the participant divulged her information, the confederate was instructed to respond with "wow that's crazy." After 5 min of working on the puzzles, the experimenter ended the second session. He then took the participant to another lab room to complete a survey packet, which included questions about her experiences working with each of the other women and basic demographic information. After completing the questionnaire, the participant was probed for suspicion. Next, she was fully debriefed about the nature of the study. Last, she was thanked, given course credit, and dismissed.

### 23.3. Measures

The questionnaire included various items to assess participants' explicit feelings towards the female confederates. Participants indicated on a 7-point scale (1 = *not at all*, 7 = *extremely*) how much they liked and how well they worked with each of their partners. To increase believability of the cover story, participants indicated through forced choice which of the two partners they worked better with and would want to work with again in the future. Participants also reported how easy they found each of the two puzzle solving tasks. The questionnaire also included the competitiveness subscale ( $M = 2.95$ ,  $SD = 0.60$ ,  $\alpha = 0.68$ ) and basic demographic items.

## 24. Results

To assess whether female participants' disclosure of the confederate's information differed in response to the confederate's clothing, multilevel models were again constructed. Transmission of the two pieces of reputation-harming information (i.e., the confederate was hung over and hooked up with two men) were each dummy coded (0 = no mention, 1 = mention) and entered as the dependent measures. Level 2 included a clothing condition dummy code (0 = conservative, 1 = provocative), a relationship status dummy code (0 = partnered, 1 = single), and women's centered competitiveness scores. To determine whether the confederate's clothing drove participants' disclosure above and beyond the degree to which participants explicitly liked the female confederate, participants' liking of the confederate was group-centered and entered as a covariate at the intercept

of level 2. A secondary model tested whether the between-person effects of women's competitiveness and relationship status differed in response to the clothing condition by including competitiveness-by-condition and relationship status-by-condition interaction terms into level 2.

Consistent with predictions, participants' disclosure varied significantly in response to the female confederate's clothing,  $B = 0.15$ ,  $SE = 0.07$ ,  $t(99) = 2.15$ ,  $p = .034$ ,  $r = 0.21$ . Because participants' liking of the confederate was included as a covariate in the model, this pattern indicates that female participants were more likely to spread the reputation-damaging information of the provocatively clad, compared to conservatively clad confederate, independent of how much they explicitly liked her. Unlike the previous studies, women's dispositional competitiveness did not significantly predict their likelihood of disclosing the negative information,  $B = 0.04$ ,  $SE = 0.04$ ,  $t(99) = 0.99$ ,  $p = .325$ ,  $r = 0.10$ , or their response to the confederate's clothing,  $B = 0.03$ ,  $SE = 0.07$ ,  $t(97) = 0.39$ ,  $p = .700$ ,  $r = 0.04$ . Women's relationship status did not significantly predict their information disclosure,  $B = -0.05$ ,  $SE = 0.06$ ,  $t(99) = -0.79$ ,  $p = .432$ ,  $r = 0.08$ , or their response to the confederate's clothing  $B = 0.14$ ,  $SE = 0.13$ ,  $t(97) = 1.03$ ,  $p = .305$ ,  $r = 0.10$ .

## 25. Discussion

Study 5 used face-to-face social interaction rather than online or hypothetical ratings of what one would do in an imagined situation. This more rigorous method yielded quite similar results. Whether the confederate was dressed in a sexy or conservative manner influenced whether female participants gossiped about her. Specifically, the gossip involved telling a new acquaintance that the confederate had been intoxicated the previous evening and/or had engaged in sex with two different men that evening. Participants passed along both pieces of reputation-damaging gossip more when the confederate was dressed in a sexy rather than conservative manner. This fits the broader pattern from the preceding studies, indicating that women selectively transmit damaging personal information about more compared to less threatening women.

Study 5 was limited by its use of a female confederate as the recipient of the participants' disclosure. These data can therefore not attest to whether women disclose reputation-harming information about same-sex rivals directly to men. Whether and how reputation information reaches men is therefore an open question for future research.

Just as in Study 4, women transmitted more reputation-damaging information about threatening rivals, independent of their explicit feelings towards the female target. Previous work has found that women often say that other women engage in malicious gossip but they themselves do not (Reynolds, 2016; Tracy, 1991). Anecdotal reports from the second confederate (i.e., gossip recipient) of Study 5 suggest a possible resolution to this paradox. In many cases, the gossip was phrased not as malicious exposure of drunken promiscuity but rather as concern for the woman's welfare. Participants would say things such as, "I'm worried about her." To be sure, genuine concern for another person's welfare would be a legitimate reason to talk about that person's misadventures — but of course genuine concern would presumably not be likely if the woman is dressed in sexy as opposed to conservative clothing. Still, by presenting the gossip as altruistic concern, some women may be able to persuade others (and perhaps, themselves) that they are just trying to help someone rather than blacken her reputation. If that strategy is commonplace, it could explain why women perceive themselves to be victims but not purveyors of malicious gossip (e.g., Archer, 2004; Reynolds, 2016).

## 26. General discussion

Across five studies, we found support for the prediction that women

transmit social information about one another strategically—harming and not helping the reputations of threatening romantic rivals. Women transmitted information that damaged and withheld information that bolstered the reputation of women who posed both direct romantic threats (i.e., mate poaching) and who indirectly threatened their romantic prospects. Women disclosed more reputation-harming and less reputation-enhancing information about women who were physically attractive compared to less attractive (Studies 2 and 3) as well as a woman who dressed provocatively compared to conservatively (Studies 4 & 5). Furthermore, women's behaviors in a face-to-face interaction followed the pattern that emerged in the hypothetical online scenarios (Study 5), supporting the external validity of the current investigation. Women were more likely to repeat a female confederate's reputation-damaging information—both that she was hung over and had engaged in promiscuous sexual behavior—when she was dressed in provocative compared to conservative clothing.

Supporting the contention that women's strategic use of social information is a form of competition, female participants' level of competitiveness influenced their use of social information. Across studies 1–4, competitive women transmitted more reputation-harming information about other women regardless of their threat level. Women who are particularly competitive in romantic domains may be the most likely to employ reputational attacks (Study 4). Altogether, these findings suggest that highly competitive women may be especially likely to defame the reputations of their same-sex peers, supporting the broader contention that reputation manipulation is a form of female competition for romantic partners.

Taken together, the current investigation extends previous research on women's rivalry in some critical ways. First, it systematically demonstrated a mechanism of female intrasexual competition: selective information transmission. Everyday social conversations offer ample and covert opportunities to effectively shape the reputations and appeal of social partners. The pattern uncovered here reveals women capitalize on these opportunities to selectively tarnish the reputations of their same-sex romantic rivals. Second, it established that the pattern of reputation-tarnishing behaviors was consistently predicted by romantic threat, based on a wide range of cues: attempts at mate poaching, rival physical attractiveness, and rival's sexualized clothing, granting confidence that this is indeed a mechanism of intrasexual romantic rivalry. Third, the pilot data demonstrated the tangible social consequences of this information transfer. Three statements about a target female's sexual infidelity, promiscuity, and disease contraction each harmed men's attraction to her as both a friend and a romantic partner. This pattern indicates that women's competitive information transmission can substantively harm same-sex peers' romantic and social opportunities. Fourth, it examined directly whether the pattern of aggressive information transmission paralleled conscious feelings towards targets. Indeed, these findings suggested women's reputation-harming disclosures do not stem entirely from explicit malicious intentions to harm another woman's desirability. Last, the investigation identified a consistent dispositional predictor of women's reputation-tarnishing behaviors: competitiveness. Taken together, the current studies uncovered the situational and dispositional predictors of women's same-sex aggression, as well as the tangibly harmful mechanism by which it unfolds: selective information disclosure.

Before discussing the implications of this investigation, some limitations should be addressed. The current studies explored social information transmission among only women. This design feature was purposeful and utilized to understand women's competition, which has been relatively understudied and less well understood than men's (e.g., Hrdy, 2013). However, men surely also engage in competitive reputation manipulation. Future research could explore whether men and women differ in the predictors of rival threat and the particular social information used to defame those rivals. For example, men are more threatened than women by same-sex peers' dominance and athletic ability (Cashdan, 1998; Gutierrez, Kenrick, & Partch, 1999).

Furthermore, women are more likely than men to value resource acquisition in a long-term romantic partner (Buss, 1989). To the degree that social information can be used to undermine romantic rivals, men may strategically disclose damaging information about one another's financial prospects, particularly if the rival is dominant or athletically skilled. However, because men are more physically aggressive than women (Archer, 2004, 2009), defaming a formidable male rival may incite violent retaliation, rendering reputation denigration costlier and thereby less advantageous for men's (versus women's) intrasexual romantic competition (Hess & Hagen, 2002, 2006).

Second, the current investigation examined women's transmission of gossip, but did not examine the recipients of the gossip. The findings from Study 5 suggest that women strategically disclose social information to other women. However, whether women disclose different social information or employ different disclosure tactics when interacting with men versus women is an open question for future research. Although our data cannot speak to whether the information is disclosed directly to men, previous research reveals that women are likely to disclose the gossip they hear to their male romantic partners (McAndrew et al., 2007), suggesting that gossip reaches at least those men. Future research would benefit from investigating what gossip women disclose directly to men, and whether the recipient's sex influences the information disclosed or the framing of the disclosure.

Despite these limitations, the current findings aid our understanding of the nature of women's competition and suggest that antiquated stereotypes of women as passive, docile, and non-competitive are likely overstated (e.g., Bem, 1974). Rather, the data presented here suggest women are actively competitive and use social information as their weapon to undermine rivals.

However, findings from Studies 3 and 5 suggest that even though women competitively harmed threatening rivals' reputations independent of whether they liked those rivals. This pattern suggests women's reputation denigration does not stem entirely from explicitly malicious motivations. This enigma is similar to the one discovered by Tracy (1991) when interviewing women about female competition. Many women reported that other women behaved competitively towards them, but they did not behave competitively themselves. Similarly, Reynolds (2016) found that women reported greater victimization than men to same-sex peers' gossip and rumors, but no greater likelihood of reporting their own use of these behaviors. It appears then that women can detect one another's competitiveness and aggression, but not their own. The reports of the second confederate from Study 5 suggest a solution to this paradox: women may be unaware of their malicious gossip and competitiveness because they believe they are operating out of concern. Indeed, the second confederate reported that many participants seemed earnestly worried when they disclosed the confederate's social information. Future research should explore whether women believe their gossip is motivated by concern and if so, whether this belief grants a social advantage in reputational competition. For example, listeners may be more likely to trust gossipers who appear concerned rather than nefariously pleased when disclosing others' social information (Turner et al., 2003; Wilson et al., 2000).

These findings also add to a growing body of research suggesting that women are threatened by and actively suppress one another's open expression of sexuality (e.g., Baumeister & Twenge, 2002; Bleske & Shackelford, 2001). Studies 4 and 5 found that women denigrated rivals dressed sexually. Moreover, across all five studies, women increased their transmission of information related to sexual promiscuity (i.e., STD, cheating, and sexual looseness) about threatening same-sex peers. Results from the pilot data demonstrated that this information holds important social ramifications for gossip targets. When listeners learn of this information, they perceive the female targets as less moral and avoid them as friends and romantic partners. The pattern of findings emergent here may be of interest to researchers and laypersons alike interested in reducing the sexual double standard, whereby women are punished for the same sexual behaviors for which men are rewarded

(e.g., Milhausen & Herold, 1999). For example, approaching behaviors such as “slut shaming” from an intrasexual romantic competition framework may be illuminative for understanding the motivation behind these harmful behaviors and designing effective interventions.

Beyond sexual intolerance, the current findings shed light on a larger pattern of female bullying and aggression. Ethnographic and victimization data suggest that the pattern of bullying mirrors the current investigation's main findings. Girls and women who are attractive, flirtatious, sexually experienced, or sexually dressed are at greater risk of victimization by other females' rumors, teasing and gossip (Leenaars et al., 2008; Owens et al., 2000; Tanenbaum, 2002). The theoretical framework presented here makes sense of this pattern: these are women's most threatening romantic rivals. The widespread derogation of women's sexual openness (e.g., terms such as “slut”) can also be understood from this framework: this information harms women's appeal as long-term romantic partners (Buss, 1988, 1989; Tanenbaum, 1999). The current results support both these theoretical assertions of female intrasexual competition as well as demonstrate the existence and consequences of these strategic reputation manipulation behaviors. Furthermore, findings revealed that women who are competitive, particularly in romantic domains, are the most aggressive with social information. This knowledge should prove useful for identifying perpetrators of, and thereby helping to reduce, this aggression.

To mitigate the suffering of women like Hope and Jenny from the opening excerpts, we must first understand the motivations of the perpetrators. The theory and data presented here suggest that Hope and Jenny's bullies likely viewed their targets as threatening romantic rivals. Moreover, the current findings suggest that Jenny and Hope's treatment is not a rare exception. Rather, reputation defamation seeps beyond the heartless hallways of high schools and is a well-worn weapon of female intrasexual competition. In the current investigation, adult women evinced behaviors and motivations paralleling those of adolescent bullies, including a willingness to tarnish the reputations of women who were otherwise innocent, but were attractive or provocatively dressed. The pattern of these behaviors was not random, but straightforwardly followed a romantic competition framework. To the extent that reputation manipulation reflects a viable means for women to compete for romantic and social partners, then strategic reputation denigration should be pervasive. Shining a spotlight on this form of aggression is the first step towards reducing it.

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## Disclosure

Data and syntax files from each study have been uploaded to the Mendeley Data repository. Data will be made available for scientific purposes upon request to the corresponding author.

## Open practices

The research in this article earned the Open Data badge for transparent practices. Data for all experiments are available at <https://www.elsevier.com/journals/journal-of-experimental-social-psychology/0022-1031/guide-for-authors>.

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