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Coordinated condemnation in women's intrasexual competition

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ABSTRACT

Here, we identify a novel reason why women are often criticized and condemned for (allegedly) sexually permissive behavior due to their choice of clothing. Combining principles from coordinated condemnation and sexual economics theory, we developed a model of competition that helps explain this behavior. We hypothesized that women collectively condemn other women who appear to be sexually permissive (based on their choice of clothing). Study 1 ($N = 712$) demonstrated that women perceived a rival with visible cleavage more negatively. These perceptions were ultimately driven by the belief that "provocatively" dressed women are more likely to have one-night stands. Study 2 ($N = 341$) demonstrated that women criticized provocatively dressed women, even when these women were not direct sexual rivals (e.g., her boyfriend's sister). Our findings suggest that future research should investigate competition outside of mating-relevant domains to understand women's intrasexual competition fully.

Women's intrasexual competition is often defined as tactics women use to compete with same-sex rivals for mates (e.g., Buunk & Fisher, 2009; De Backer, Nelissen, & Fisher, 2007; Fernandez, Munoz-Reyes, & Dufey, 2014; Fisher & Cox, 2011; Fisher, Shaw, Worth, Smith, & Reeve, 2010). For example, targets portrayed as sexual rivals are rated as less desirable as potential friends (Vrangalova, Bukberg, & Rieger, 2014; Vaillancourt & Sharma, 2011) and as more sexually permissive (Abbey, Cozzarelli, McLaughlin, & Harnish, 1987). Similarly, women recall gossip about a rival's ability to attract mates better than other information (De Backer et al., 2007).

However, women's experience with adaptive problems such as caring for dependent offspring, have necessitated modes of competition that reduce the likelihood of violent retaliation (Campbell, 1999; Reynolds, 2021). Here, we argue that some features of women's intrasexual competition, such as indirect aggression against proactively clothed others, can be understood in the context of sexual economics theory (Baumeister & Vohs, 2004) and dynamic cooperation (DeScioli & Kurzban, 2013). We propose that women curb rivals' sexually permissive behavior by collectively condemning those who appear to be sexually permissive.

1. Sexual economics theory and coordinated condemnation in women's competition

Sexual economics theory (Baumeister & Vohs, 2004) proposes that sexual interactions are similar to marketplace interactions where buyers (men) seek to acquire resources (sex) from suppliers (women). Competition between suppliers determines the price (investment, resources, or commitment) that suppliers can require. Therefore, it is in the suppliers' best interest to work together to maintain the price of their resources (Baumeister & Vohs, 2004). Applying this to women's competition, women may collectively condemn others who lower the "cost" of sexual access by appearing sexually permissive. For example, women report being angry when sexual content promotes inexpensive, but not expensive, products as the association suggests the "cost" of sexual access is cheap (Vohs, Sengupta, & Dahl, 2014).

Suppliers can ensure a higher price for their resources if they coordinate with one another (DeScioli & Kurzban, 2013) and aggress against those who do not uphold this price. In women's competition, indirect condemnation may signal opposition towards *behaviors* associated with sexual permissiveness (i.e., casual sex) without condemning *individuals* who engage in such behaviors (i.e., women inclined towards casual relationships). Women thus maintain their bargaining power without *directly* competing with those who are sexually permissive. For example, Vrangalova, Bukberg, and Rieger (2014) showed that rivals depicted as

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promiscuous are considered less moral, desirable as a friend, competent, stable, and "warm." Notably, the participant's promiscuity did not moderate these effects – women who report being sexually permissive have the same negative perceptions as women who report not being sexually permissive.

One perceived cue to sexual permissiveness is how a woman chooses to dress. Abbey et al. (1987) showed that women in revealing clothes are considered more sexy, seductive, and sensual but less considerate and sincere than women in conservative clothing. Similarly, Vaillancourt and Sharma (2011) showed that participants rated a confederate in "sexy" clothes as "bitchier" than when she wore conservative clothes. In all, women are implicitly aware that their clothing choices make them targets of intrasexual competition and alter their behavior to avoid this aggression (Krems, Rankin, & Northover, 2020).

2. Current studies

Here, we conducted preliminary tests of coordinated condemnation in women's intrasexual competition. In Study 1, we hypothesized that women shown a target with visible cleavage (a cue to sexual permissiveness; Krems et al., 2020) would perceive her more negatively, even in domains unrelated to physical attractiveness and mating. Additionally, we hypothesized that perceptions of the target's promiscuity would drive these negative perceptions. Controlling for these negative perceptions of promiscuity should attenuate differences in the non-sexually related traits.

In Study 2, we hypothesized that women would rate targets that appeared to be sexually permissive more negatively across social traits, regardless of if the target was a sexual rival. As most perspectives of women's competition focus on competition for mates, these perspectives would not predict that participants would judge targets who are not sexual rivals negatively across social traits. However, the negative judgment of non-sexual rivals is something that coordinated condemnation predicts, as this behavior threatens the collective "cost" of sex. In addition, we tested an implicit assumption of coordinated condemnation – that women intuitively represent the perceptions of other women (Krems et al., 2020; Wacker, Bölte, & Dziobek, 2017). We hypothesized that when women report how they think other women and men perceive the target, participants would report that other women, but not men, have negative perceptions of the target.

3. Study 1 method

3.1. Participants

This study received IRB approval from California State University, Fullerton's Institutional Review Board.[1] We recruited women (N = 1067) from a large public university in Southern California, junior colleges in Southern California, Amazon's Mechanical Turk, and snowball sampling. After excluding repeated IP addresses with similar demographics, conflicting biological and self-identified gender responses, failed attention checks (indicating <90% honest or attentive when taking the survey), unintelligible residence responses, non-heterosexual orientation, and completion of less than half of the survey, the final sample contained data from 712 women.

Our study involved a very subtle manipulation between conditions, so demand characteristics and self-presentation biases could influence responses to the dependence variables. Therefore, it was important that our participants responded to the survey as honestly as possible and paid close attention to the target images and questions. Our survey took between 5 and 7 min to complete, so we believed it was reasonable to require 90% attention and honesty responses to be included in the study.[2] Participant ages ranged from 18 to 82 years old (M = 25.30, SD = 10.77). Most participants self-identified as having average SES (40.70%), finished some college courses (43.60%), were White (40.60%) or Hispanic/Latina (32.80%), and currently in a romantic relationship (50.10%).

This study was conducted in tandem with a survey on men's intrasexual competition. Due to the nature of that study's design, our minimum sample size (700 women) was determined to ensure that recruitment would remain balanced for both studies. However, to check that we recruited enough women to test our predictions, we ran an a priori power analysis after starting data collection and sensitivity analyses before conducting our focal analyses. We used the average of Vaillancourt and Sharma's (2011) effect sizes ($\eta^2 = 0.35$[3]) with power = 0.95 and alpha = 0.05 in G*Power to perform the power analysis (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007). The power analysis suggested we needed a minimum sample size of 66 participants per group (132 total) for the between-subjects MANOVA. The sensitivity analyses (with the same power, alpha, and sample size of 712) indicated that we were adequately powered to detect effects as small as $\eta^2 = 0.031$.

3.2. Materials and procedure

All participants read a consent form that informed them of their rights as participants, indicated that they must be at least 18 years old to participate, and asked them to confirm they read the form and agreed to participate before beginning the survey. After a cover story about "color theory," participants were presented with one of two pictures: one with a target showing obvious cleavage (N = 355) and the other showing a superimposed modesty panel (see Fig. 1). Participants rated the target on eight characteristics, ranging from how friendly she appeared to if

Fig. 1. Participants in study 1 were shown one of two images. Participants in the "cleavage" condition were shown the stimulus on the left, and participants in the "modesty panel" condition were shown the stimulus on the right.

[1] HSR-15-0413.

[2] 140 women indicated they paid attention to less than 90% of the survey, 36 women indicated they were less than 90% honest. Other exclusions were due to the remaining a priori exclusion criteria.

[3] However, this effect size is much larger than the results of a recent meta-analysis on women's behavioral responses to competitive scenarios (Ayers, in press). As such, it is possible that the effect size used in the power analyses is larger than the true effect size. We re-ran the power analysis using the effect size reported in Ayers (in press) and determined we needed a minimum of 194 participants per group (388 total).

she seemed like the type of woman who would try to cheat with someone else's boyfriend.

Next, the Social Comparison Orientation Scale short version (SCOS; Gibbons & Buunk, 1999) and the Intrasexual Competition Scale (ICS; Buunk & Fisher, 2009) were presented. The SCOS asks questions such as *I pay a lot of attention to how I do things compared to how others do things*, and *I often compare myself with others with respect to what I have accomplished in life*, and the ICS asks questions such as *I wouldn't hire a very attractive woman as a colleague*, and *I tend to look for negative characteristics in women who are very successful*. For this study, these scales were measured on 1 *Do not agree* to 9 *Completely agree* Likert-type scales. These scales measure more traditional components of intrasexual competition and assess the extent to which women compare themselves to and aggress against their rivals. As these measures align with more traditional perceptions of women's intrasexual competition, we included these measures as a control to determine if coordinated condemnation can be assessed using these measures. The last section of the questionnaire consisted of a demographic section before participants were fully debriefed.

4. Results

4.1. Did perception of target depend on clothing?

Responses to the targets were assessed using a between-subjects MANOVA. There was an overall statistical difference in responses based on condition, $F(10, 701) = 10.23$, $p < 0.001$, partial $\eta^2 = 0.13$ (see Fig. 2). Participants who saw the target showing cleavage perceived her more negatively than participants who viewed the target with a modesty panel. Post hoc ANOVAs (corrected to $p < 0.0045$) revealed that women who saw the target with cleavage thought she was more likely to have one-night stands, $F(1, 710) = 87.25$, $p < 0.001$, partial $\eta^2 = 0.11$, cheat on her boyfriend, $F(1, 710) = 28.83$, $p < 0.001$, partial $\eta^2 = 0.04$, cheat with someone else's boyfriend, $F(1, 710) = 36.25$, $p < 0.001$, partial $\eta^2 = 0.025$, "not play by the rules", $F(1, 710) = 9.47$, $p = 0.002$, partial $\eta^2 = 0.01$, was less intelligent, $F(1, 710) = 19.23$, $p < 0.001$, partial $\eta^2 = 0.03$, was less likely to be included in a study group, $F(1, 710) = 25.80$, $p < 0.001$, partial $\eta^2 = 0.04$, and thought she would cheat on tests, $F(1, 710) = 23.29$, $p < 0.001$, partial $\eta^2 = 0.03$. There was no statistical difference in perceptions of friendliness based on condition, $F(1, 710) = 0.98$, $p = 0.322$.

4.2. Did perceptions of promiscuity influence other ratings?

To determine if the negative perceptions were driven by perceptions of the target's promiscuity, a Roy-Bargmann Stepdown analysis was conducted (Tabachnick & Fidell, 2007). Roy-Bargmann Stepdown analyses allow dependent variables to be entered in order of decreasing theoretical importance, thus controlling for the variance associated with each dependent variable sequentially (Finch, 2007). After controlling for perceptions of the target having one-night stands, $F(1, 705) = 95.95$, $p < 0.001$, no other promiscuity association remained statistically significant. After controlling for promiscuity-related associations, participants still reported that they would be unlikely to include the target in their study group ($p = 0.008$). This suggests that perceptions of target promiscuity "leak" into non-sexually related domains and influence perceptions of the target in these domains.

Next, we assessed if other negative relationship judgments (e.g., cheating on her boyfriend, cheating with someone else's boyfriend) drove negative perceptions of the target. It was essential to assess this possibility, as these negative relationship judgments do not directly relate to promiscuity. Therefore, if these negative relationship judgments also attenuate the associations, our results would suggest that it is not promiscuity that drives the results but perceptions of the target as a threat to one's romantic relationship. After controlling for perceptions of the target being likely to cheat on her boyfriend, $F(1, 705) = 32.19$, $p < 0.001$, perceptions of the participant being likely to cheat with someone else's boyfriend ($p = 0.01$), have one night stands ($p < 0.001$), and not be included in a study group ($p = 0.008$) all remained significant. After controlling for perceptions of the target being likely to cheat with someone else's boyfriend, $F(1, 708) = 39.58$, $p < 0.001$, perceptions of the target being likely to have one night stands ($p < 0.001$) and not be included in a study group ($p = 0.008$) remained significant. Given these results, we conclude that perceptions of the target's promiscuity drove the participants' negative perceptions of the target with cleavage.

4.3. Were there significant differences in other measures of direct competition?

To assess if women presented with the target with cleavage scored higher on traditional competition measures (ICS and SCOS), a between-subjects MANOVA was used. There was no statistical difference in responses based on condition, $F(2, 722) = 0.83$, $p = 0.437$, partial $\eta^2 = 0.002$, suggesting that participants who viewed the target with cleavage ($M_{ICS} = 3.66$, $SD_{ICS} = 1.63$; $M_{SCOS} = 5.59$, $SD_{SCOS} = 1.80$) did not respond more competitively than participants who viewed the target with a superimposed modesty panel ($M_{ICS} = 3.55$, $SD_{ICS} = 1.50$; $M = 5.43_{SCOS}$, $SD_{SCOS} = 1.91$).

5. Study 2 method

Study 1 provided preliminary evidence that coordinated condemnation may partially explain women's competitive interactions in the absence of direct mating outcomes. In Study 2,[4] we aimed to test coordinated condemnation against theories of competition with direct sexual rivals. We hypothesized that women would judge targets who appeared to be sexually permissive as less trustworthy, less appropriate, more promiscuous, and would be less likely to want to be friends with her regardless of whether she was a direct sexual rival. We also asked participants to report how they thought other women and men would view the target. As previous research suggests that women accurately represent the motives of same-sex peers (Perilloux & Kurzban, 2015; Wacker et al., 2017), women's responses should elucidate one way that women coordinate their aggression against sexually permissive targets.

5.1. Participants

Using power = 0.95 and alpha = 0.05 for a mixed-design 3 (target description) × 3 (perspective) MANOAs in G*Power, we determined we needed a minimum sample size of 300 participants. Target description (partner's sister, close friend, unknown woman) was the between-subjects factor, and perspective (the participant's, other women's, and men's) was the within-subjects factor. Women ($N = 518$) were recruited online from a large public university in Southern California, Reddit's r/SampleSize, and snowball sampling. The exclusion criteria were similar to those from Study 1 with a few alterations: participants were excluded from the analyses if they guessed the purpose of the study, were less than 80%[5] honest or paid attention to less than 80% of the survey, or took under 3 min or over 30 min to complete the 7-min survey. This left us with a final sample of 346 participants. The hypotheses, design, and analyses for this study were pre-registered at Open Science Framework (https://osf.io/u6dtr/). Participant ages ranged from 18 to 64 years old ($M = 22.81$, $SD = 7.24$). Participants mainly identified as middle SES (44.3%), finished some college courses (43.0%), and were White (51.0%) or Hispanic/Latina (28.4%).

[4] IRB approval for HSR-15-0413 was re-reviewed and renewed with updated materials for study 2.

[5] This is different from the criteria in study 1 to allow for a more generalizable sample.

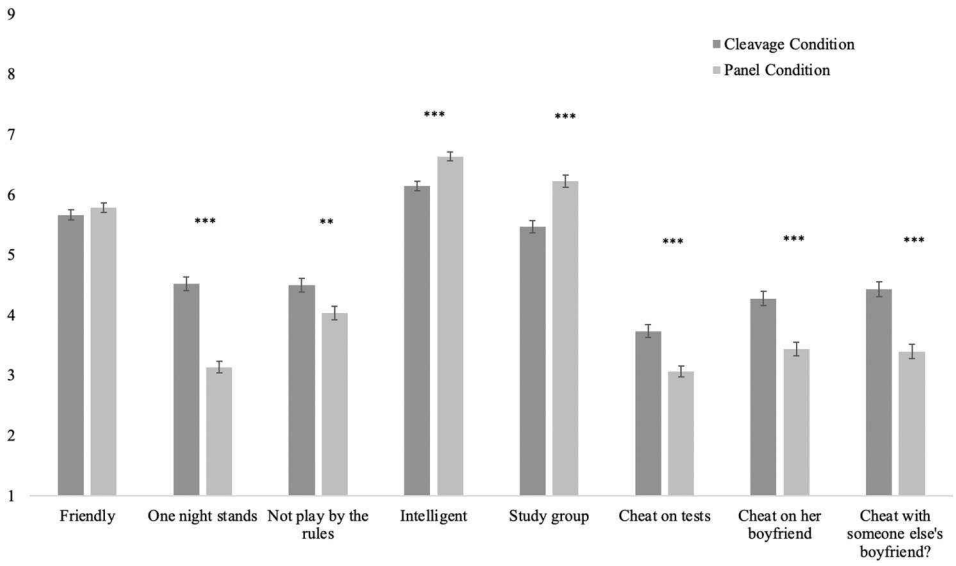

Fig. 2. Participants in the cleavage condition rated the target as more likely to have one-night stands, more likely to "not play by the rules," more likely to cheat on tests, more likely to cheat on her boyfriend, more likely to cheat with someone else's boyfriend, as less intelligent, and less likely to be included in her study group compared to participants in the panel condition. There was no difference between conditions on rated friendliness. Error bars represent standard error. *** $p < 0.001$. ** $p < 0.01$.

5.2. Materials and procedures

All participants read a consent form that informed them of their rights, indicated that they must be at least 18 years old, and asked them to confirm that they read this form and agreed to participate before beginning the survey. Participants then read the following vignette about a target (Fig. 3), who was described as their partner's sister (N = 111), their close friend (N = 109), or an unknown woman (N = 121).

> Imagine that you are going to a bar to hang out with your romantic partner and some friends. When you get there, you see [*your partner's sister, your close friend, an unknown woman*] (pictured below) talking and laughing with your partner. Everyone is engaged in an animated discussion and [*your partner's sister, your close friend, an unknown woman*] is particularly engaged in a lively debate with your partner.

These images contained attractive targets[6] with visible tattoos, piercings, and provocative clothing, as these characteristics are believed to be cues of sexual permissiveness (Goetz, Easton, Lewis, & Buss, 2012; Krems et al., 2020; Skoda, Oswald, Brown, Hesse, & Pederson, 2020; Tews, Stafford, & Jolly, 2020), and we sought to show that this effect was robust across multiple indicators of sexual permissiveness. However, this is also a limitation of the current study as we cannot identify which specific cues of sexual permissiveness are most likely to result in coordinated condemnation.

After reading the vignette, participants rated the target's trustworthiness, promiscuity, and appropriateness, and if they want to become (or remain) friends with her on 1 *Not at all* to 9 *Extremely* Likert-type scales. Participants then indicated how they thought other women and men would view this target on the same dependent variables. Finally, participants answered demographics questions, suspicion probes, honesty and attention measures, and were fully debriefed.

6. Results

We assessed differences in participant responses across target images before performing our focal analyses. However, there were non-significant differences in perceptions of promiscuity ($F(6, 682) = 0.68$, $p = 0.67$, Pillai's Trace = 0.01) and trustworthiness ($F(6, 680) = 1.41$, $p = 0.21$, Pillai's Trace = 0.02) based on the target images. There was a significant difference in perceptions of appropriateness based on the target images ($F(2, 682) = 2.62$, $p = 0.02$, Pillai's Trace = 0.05), but this effect was driven by differences in whose perceptions of appropriateness the participants reported ($p < 0.001$) and not based on the target images (p's > 0.81). Finally, there were differences in perceptions of wanting to be friends with the target based on the target images ($F(6, 680) = 2.66$, $p = 0.02$, Pillai's Trace = 0.05). This effect was driven by differences in whose perceptions the participants reported ($p < 0.001$) and participants reporting all groups were more likely to want to be friends with the pink dress target ($p = 0.007$–0.07).

Given the minimal influence of the target images on our dependent variables, we decided to collapse across target images to run the focal analyses. However, it should be noted that we may not have observed effects of the target images because the images contained too many confounding cues that obscured differences in perception across these images. Future research could address this limitation by selecting one image and creating a control image that holds confounding cues constant to determine which cues of promiscuity influence these judgments. Table 1 presents means and standard deviations for all target descriptions and perspectives after collapsing across target images.

6.1. Does target description influence perceptions of promiscuity?

First, we assessed perceptions of target promiscuity. There was a main effect of target description, $F(2, 337) = 4.17$, $p = 0.016$, partial $\eta^2 = 0.02$, a main effect of perceptions of promiscuity, $F(2, 674) = 141.61$, $p < 0.001$, partial $\eta^2 = 0.30$, and an interaction of target description and perceptions of promiscuity, $F(4, 674) = 7.21$, $p < 0.001$, partial $\eta^2 = 0.04$. Simple contrasts revealed that participants rated the target as less promiscuous than they thought other women and men would, $F_{partner's\ sister}(1, 337) = 126.93$, $p < 0.001$, partial $\eta^2 = 0.274$; $F_{close\ friend}(1, 337) = 100.72$, $p < 0.001$, partial $\eta^2 = 0.230$; $F_{unknown\ woman}(1, 337) = 32.88$, $p < 0.001$, partial $\eta^2 = 0.089$. There were no significant differences between how participants believed other women and men would rate the target's promiscuity in the partner's sister and close friend conditions, $F_{partner's\ sister}(1, 337) = 1.77$, $p = 0.185$, partial $\eta^2 = 0.005$; $F_{close\ friend}(1, 337) = 0.04$, $p = 0.848$, partial $\eta^2 = 0.0001$. However, participants believed other women would think the target was more promiscuous than men would when she was described as an unknown woman, $F(1, 337) = 11.17$, $p = 0.019$, partial $\eta^2 = 0.016$.

[6] A small group of research assistants rated the target images prior to data collection using a bipolar *Yes* or *No* question. All research assistants agreed that the women were at least of average attractiveness.

Fig. 3. Participants in study 2 were shown one of four target images. There were minimal non-significant differences in perception of the target based on the stimulus.

Table 1
Means and standard deviations of simple contrasts of perceptions of targets' promiscuity, trustworthiness, appropriateness, and likelihood of being friends rated by threat level (partner's sister, close friend, or unknown woman) and participants' perception (themselves, other women, and men).

	Partner's sister			Close friend			Unknown woman		
	Participant *M* (*SD*)	Other women *M* (*SD*)	Men *M* (*SD*)	Participant *M* (*SD*)	Other women *M* (*SD*)	Men *M* (*SD*)	Participant *M* (*SD*)	Other women *M* (*SD*)	Men *M* (*SD*)
Promiscuity	3.47 (2.24)	5.50 (2.25)	5.75 (2.13)	3.86 (2.13)	5.79 (2.26)	5.82 (2.39)	4.90 (2.27)	6.17 (2.13)	5.74 (2.31)
Appropriateness	6.86 (2.18)	4.80 (2.41)	5.64 (2.14)	5.28 (2.54)	4.06 (2.09)	5.46 (2.09)	4.44 (2.54)	3.94 (2.32)	5.65 (2.39)
Likelihood of being friends	6.74 (2.16)	6.61 (1.91)	6.93 (2.03)	6.64 (2.16)	5.58 (2.33)	6.66 (1.93)	5.34 (2.14)	5.81 (2.12)	6.88 (2.01)
Trustworthiness	6.12 (1.98)	4.81 (2.03)	5.42 (1.88)	5.25 (1.98)	4.07 (2.14)	5.25 (1.98)	4.00 (2.21)	3.78 (2.15)	5.35 (2.16)

Note. All items were measured on a 1 *Not at all* to 9 *Extremely* Likert-type scales.

6.2. Does target description influence perceptions of appropriateness?

Next, we tested perceptions of appropriateness. There was a main effect of target description, $F(2, 337) = 10.92$, $p < 0.001$, partial $\eta^2 = 0.061$, a main effect of perceptions of appropriateness, $F(2, 674) = 59.95$, $p < 0.001$, partial $\eta^2 = 0.151$, and an interaction of target description and perceptions of appropriateness, $F(4, 674) = 13.96$, $p < 0.001$, partial $\eta^2 = 0.077$. Simple contrasts revealed that participants thought the target was more appropriate than they believed other women and men would when the target was described as their partner's sister, $F(1, 337) = 53.26$, $p < 0.001$ partial $\eta^2 = 0.137$. In addition, participants thought men would perceive the target as more appropriate than other women would when she was described as a partner's sister, $F(1, 337) = 14.97$, $p < 0.001$, partial $\eta^2 = 0.043$.

Similarly, participants perceived the target to be more appropriate than they believed other women and men would when the target was described as a close friend, $F(1, 337) = 5.49$, $p = 0.02$, partial $\eta^2 = 0.016$, and participants believed other women would view the target as less appropriate than men would, $F(1, 337) = 41.77$, $p < 0.001$, partial $\eta^2 = 0.110$. However, when the target was described as an unknown woman, there was no difference in perceptions of the target's appropriateness, $F(1, 337) = 2.76$, $p = 0.097$, partial $\eta^2 = 0.008$.

6.3. Does target description influence the likelihood of wanting to be friends?

We then assessed differences in inclinations to be friends with the target. There was a main effect of target description, $F(2,336) = 6.57$, $p = 0.002$, partial $\eta^2 = 0.038$, a main effect of friendship inclinations, $F(2,672) = 19.68$, $p < 0.001$, partial $\eta^2 = 0.055$, and an interaction of target description and friendship inclinations, $F(4,672) = 9.20$, $p < 0.001$, partial $\eta^2 = 0.052$. Simple contrasts revealed that participants were just as likely to want to be friends with the target as they thought other women and men would when she was described as the partner's sister, $F(1, 336) = 0.02$, $p = 0.883$, partial $\eta^2 = 0.0006$. However, participants reported wanting to be friends with the target more than they thought other women and men would when she was described as a close friend or unknown woman, $F_{close\ friend}(1, 336) = 5.63$, $p = 0.018$, partial $\eta^2 = 0.016$; $F_{unknown\ woman}(1, 336) = 23.84$, $p < 0.001$, partial $\eta^2 = 0.066$,. Additionally, participants thought men would want to be friends with the target more than other women would, $F_{close\ friend}(1, 336) = 22.96$, $p < 0.001$, partial $\eta^2 = 0.064$; $F_{unknown\ woman}(1, 336) = 25.73$, $p < 0.001$, partial $\eta^2 = 0.071$.

6.4. Does target description influence perceptions of trustworthiness?

Finally, we tested for differences in perceptions of trustworthiness. There was a main effect of target description, $F(2,336) = 12.06$, $p < 0.001$, partial $\eta^2 = 0.067$, a main effect of perceptions of trustworthiness, $F(2, 672) = 52.48$, $p < 0.001$, partial $\eta^2 = 0.135$, and an interaction between target description and perceptions of trustworthiness, $F(4,672) = 15.03$, $p < 0.001$, partial $\eta^2 = 0.082$. Simple contrasts indicated that participants rated the target as more trustworthy than they believed other women and men would when she was described as their partner's sister, $F(1, 336) = 22.81$, $p < 0.001$, partial $\eta^2 = 0.064$. Participants also reported that men would perceive the target as more trustworthy than other women would when described as the partner's sister, $F(1, 336) = 12.56$, $p < 0.001$, partial $\eta^2 = 0.036$. The same pattern was observed for both the close friend and unknown woman conditions. Participants reported they thought the target was more trustworthy than other women and men would when she was described as a close friend or unknown woman, $F_{close\ friend}(1, 336) = 19.07$, $p < 0.001$, partial $\eta^2 = 0.054$; $F_{unknown\ woman}(1, 336) = 7.78$, $p < 0.001$, partial $\eta^2 = 0.023$, and thought men would rate the target as more trustworthy than other women would when she was described as a close friend or unknown woman, $F_{close\ friend}(1, 336) = 45.75$, $p < 0.001$ partial $\eta^2 = 0.120$; $F_{unknown\ woman}(1, 336) = 88.83$, $p < 0.001$ partial $\eta^2 = 0.209$.

7. General discussion

These studies aimed to investigate coordinated condemnation in women's competition. In Study 1, we hypothesized that participants shown a target with visible cleavage would perceive the target more negatively even in domains unrelated to physical attractiveness and mating. In Study 2, we hypothesized that women would rate potentially sexually permissiveness targets more negatively regardless of if she was a direct sexual rival. We also asked participants to report how they believed other women and men would perceive the target.

Study 1 documented that women who saw the target with cleavage perceived her more negatively than participants who saw the target with a superimposed modesty panel. Further, after controlling for perceptions of the target's likelihood of having one-night stands, the other associations were no longer significant. This suggests that the negative perceptions of the target with visible cleavage were driven by perceptions that she would lower the collective "cost" of sexual access by acting sexually permissive.

In Study 2, we found that women reported more favorable perceptions of potentially permissive targets than they believed other women and men would regardless of if the target was a direct threat to their romantic relationships. Additionally, when reporting the perceptions of other women and men, participants reported that other women would view the target more negatively than men would. While these results do not support our original hypothesis, they suggest that women mentally represent the judgments of others, allowing for coordinated condemnation of undesirable behavior.

Our results from these studies provide preliminary support for the hypothesis that women coordinate to condemn potentially sexually permissive women. Our results also indicate that women seem to be aware of and motivated to maintain their bargaining power in relationships (Baumeister & Vohs, 2004; Vohs et al., 2014) by punishing others who appear to be sexually permissive. This awareness, in turn, motivates women to use third-party condemnation (DeScioli & Kurzban, 2009, 2013) to aggress without the threat of direct retaliation. Our results also corroborate previous research showing that women are aware that their clothing choices make them the targets of competition (Krems et al., 2020) and suggests that women are aware of how other women perceive rivals (Wacker et al., 2017), allowing women to coordinate their indirect aggression at these individuals. Our results also add nuance to theories of women's intrasexual competition. Women's intrasexual competition is often described as covert and indirect (Campbell, 1999; Fisher, 2013; Vaillancourt, 2005), but our results document that there may be instances where women's competitive motivations are more overt than previously thought (i.e., when coordinating aggression against a sexually permissive rival).

Research has also outlined a paradox in women's interpersonal relationships. Women's friendships are more likely to be dyadic (David-Barrett et al., 2015; Winstead, 1986), suggesting that women invest their time and energy in a single friend instead of many friends. But women's friendships are also more fragile and less tolerant to issues within the relationship (Benenson, 2013; Benenson et al., 2009; Benenson & Christakos, 2003), suggesting that women's friendships are also more likely to end. Part of this paradox may be attributable to the fact that women's friendships balance cooperative and competitive influences. While women may want to foster emotionally deep bonds with their friends (Wright, 1982), women's indirect aggression and intolerance of slights in their friendships might be caused by coordinated condemnation. Investigating the influences of coordinated condemnation in women's friendships may help researchers understand how conflict in women's friendships manifests and document how women coordinate their aggression with their friends against other potential rivals.

7.1. Limitations and future directions

Our current results support the hypothesis that women represent how other women view rivals. Still, our results did not show that women *use* these representations to coordinate their aggression. Behavioral observations, such as Vaillancourt and Sharma's (2011), would allow for a more accurate assessment of the use of these representations to aggress against potentially permissive rivals. Additionally, coordinated aggression may bolster research on women's abilities to assess competitors' motivations in interpersonal contexts (Krems, Neel, Neuberg, Puts, & Kenrick, 2016; Krems, Neuberg, Filip-Crawford, & Kenrick, 2015).

Another limitation is that women's perceptions of the target may reflect self-presentation biases. As women's competition is indirect (Benenson, 2013; Campbell, 2013; Vaillancourt, 2013), it is possible that the positive perceptions women reported reflect their motivation to remain anonymous (Campbell, 1999) so they cannot be accused of aggressing against competitors (Fisher, 2013; Vaillancourt, 2005). As such, it is likely that beliefs about other women's perceptions indirectly reflect women's actual competitive motivations (Perilloux & Kurzban, 2015).

Another limitation concerns the target images used in Study 2. We chose target images that had visible tattoos, piercings, and provocative clothing, as these characteristics are believed to be cues of sexual permissiveness (Goetz et al., 2012; Krems et al., 2020; Skoda et al., 2020; Tews et al., 2020). However, it is possible that these images were overwhelming, unbelievable, or presented a demand characteristic. While our results suggest that these confounds did not meaningfully affect our results in the current study, it is also possible that some confounds attenuated the effects of others and led to the appearance of no confounding effect. Unfortunately, since we did not have conservative versions of these stimuli, we cannot tease these possibilities apart in our current data. Future studies could improve upon these limitations by 1) presenting fewer target images with more subtle cues of sexual permissiveness, 2) including control images of provocative images, and 3) focusing on specific cues to sexual permissiveness to document if these cues influence coordinated condemnation.

Another limitation that should be mentioned is the exclusion criteria used in both studies. While the exclusion criteria were determined before data collection for Study 1 began, and were subsequently refined before data collection for Study 2 began, these criteria did result in many participants being excluded from the current analyses (33% in Study 1 and 34% in Study 2). We do not believe that this is an issue for the current study, but it does limit the generalizability of our results. For example, we do not know if we would have found the same effects in a sample that was less honest or paid less attention. We also do not know how differences in women's sexual orientation or gender identity may influence these results, as these groups are often excluded from studies on women's competition. Future research on women's intrasexual competition, and coordinated condemnation in general, would benefit from including these groups to better understand women's competition.

Finally, these experiments are not perfect tests of coordinated condemnation due to the self-report nature of these studies. In addition, there may be additional individual factors, such as age, socioeconomic status, and education level (Campbell, 1999), that influence the saliency and intensity of women's intrasexual competition. As women's competition occurs across the lifespan (Linney, Korologou-Linden, & Campbell, 2016; Low, 2017), domain- and age-specific effects on competition should exist. For example, as women's fundamental social motives become more family-oriented (Ko et al., 2020), women may be less likely to coordinate against sexually permissive women and instead coordinate against women who are perceived as bad mothers. We could not test for the attenuation of this effect and changing motivations in menopausal women (using Gottschalk, Eskild, Hofvind, Gran, & Bjelland, 2020) as there were not enough women in our sample for age-effects to be appropriately powered (5.7% were 52 years or older in Study 1; 1.2% were 52 years or older in Study 2).

Future research would benefit from actively recruiting older women to test for attenuation effects of coordinated condemnation. Similarly, while we asked our participants about their romantic relationships, we

did not ask participants how long they had been in a romantic relationship. It would be fruitful for future research to address how romantic relationships influence women's competition and coordinated condemnation, as women in newer, more temporary, or more unstable relationships may respond more competitively to potential relationship threats and direct more aggression towards women who display cues of permissiveness.

7.2. Concluding remarks

In conclusion, our results provide preliminary support for the hypothesis that women coordinate with others to condemn rivals who appear to be sexually permissive to discourage this behavior. Previous research has documented that women's clothing choice fluctuates across the menstrual cycle (Durante, Li, & Haselton, 2008), and women are aware of how their clothing choice influences aggression against them (Krems et al., 2020), so clothing choice may be one domain where women are keenly aware of aggression against them. Research on other ways that coordinated condemnation manifests in women's competition can potentially influence our understanding of women's same-sex interactions in the absence of salient mating cues.

CRediT authorship contribution statement

JDA designed and ran the studies, analyzed the results, and wrote the manuscript.

ATG assisted with data collection for the studies and edited the manuscript.

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