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## Ambivalent attraction: Beauty determines whether men romantically desire or dismiss high status women

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## ABSTRACT

We propose that physical attractiveness determines whether heterosexual men desire or dismiss romance with high-status women. We tested this ambivalent attraction hypothesis in three increasingly realistic experiments – one involving a hypothetical social interaction ( $N = 214$ ) and two involving potential and actual interactions with confederates ( $Ns = 332$  and  $181$ ). In each experiment, heterosexual men encountered a moderately-attractive or highly-attractive woman who aspired to (or held) a low-status or high-status job. Then they rated their attraction to the woman (Experiments 1 to 3) and were given the opportunity to initiate additional social contact with the woman (Experiments 2 and 3). As predicted, a meta-analysis across all three experiments revealed that higher (vs. lower) status decreased men's attraction to moderately-attractive women ( $d = -0.20$ ), whereas higher (vs. lower) status increased men's attraction to highly-attractive women ( $d = 0.47$ ). Women did not exhibit this pattern of reactions to either women or men. These results demonstrate the importance of ecological validity and interactive effects in attraction research.

The mysteries of desire and romantic attraction have long fascinated scholars of the human experience, and psychologists are certainly no exception. One of the most heavily researched topics in the field of relationship psychology concerns *romantic partner preferences*, the characteristics and traits that people desire and find attractive in a romantic partner (e.g., Eastwick, Luchies, Finkel & Hunt, 2014). This large body of literature reveals that two traits play a particularly important role in guiding people's romantic desire: Physical attractiveness and social status. To be clear, these traits are not the most desired characteristics. That honor falls to kindness and understanding (e.g., Li et al., 2013). Instead, physical attractiveness and social status are important for understanding romantic attraction because men and women seem to differ in the importance they place on these traits (e.g., Zentner & Eagly, 2015). Thus, studying the influence of attractiveness and social status on romantic desire not only reveals theoretically important insights about attraction, but also sheds light upon gender dynamics during relationship initiation. In the current research, we seek to resolve one of the discrepancies that has emerged from research concerning the intersection of romantic desire, gender, and partner preferences. Specifically, we seek to understand whether physical attractiveness can explain heterosexual men's ambivalent attraction to high-status women.

### 1. Gender, traits, and romantic desire

Physical attractiveness influences nearly every phase of human social development and experience: Across the lifespan, attractive individuals are evaluated more favorably and treated better than unattractive individuals (Langlois et al., 2000). Various theories seek to explain the allure of physical attractiveness. Sociocultural models suggest that systemic cultural factors like racial and ethnic status hierarchies and heteronormativity determine the physical traits and characteristics that are considered attractive in a given culture and time (e.g., Zentner & Eagly, 2015). Thus, seeking a beautiful partner reflects, at least in part, the desire for proximity to people whose group memberships allow them to access and confer relational benefits that other, less attractive partners cannot access or afford. Evolutionary models suggest that some of the physical characteristics that many cultures deem to be attractive are biomarkers of genetic fitness (e.g., Singh & Singh, 2011). Accordingly, people may desire a beautiful partner because they can offer a genetic advantage to any offspring that result from a sexual union.

While these theoretical perspectives differ in the mechanisms they propose to explain the appeal of physical attractiveness, most lead to the same key conclusions. People around the world seem to agree about many of the traits that are deemed to be attractive (Eastwick et al.,

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2006), and physical attractiveness is highly valued in a potential romantic partner (e.g., Eastwick et al., 2014). Moreover, these various perspectives also agree that gender appears to moderate these preferences. International surveys demonstrate that men consistently claim to value physical attractiveness in their female dating partners more strongly than women claim to value physical attractiveness in their male partners (e.g., Fletcher, Tither, O'Loughlin, Friesen & Overall, 2004). Moreover, attractiveness exerts a greater influence on men's romantic desire than on women's romantic desire (Li, Bailey, Kenrick & Linsenmeier, 2002), though this gender difference is quite small (Eastwick & Smith, 2018). Sociocultural models suggest that patriarchal systems of power and heteronormativity result in the sexual objectification of women, one consequence of which is a strong cultural valuation of women's beauty and sexual appeal to men (e.g., Fredrickson & Roberts, 1997). Evolutionary theories argue that men value attractiveness because it signals fertility (e.g., Buss & Schmitt, 1993). In any case, most theorists agree that a woman's attractiveness seems to play a particularly important role in determining men's romantic desire.

In contrast, women around the world claim to value social status in a male romantic partner more than they value physical attractiveness, and indeed, more so than men claim to value social status in their female partners (e.g., Shackelford, Schmitt & Buss, 2005). Sociocultural models suggest that women value social status in a romantic partner because patriarchal power systems force women to rely on men to access resources that are otherwise held beyond their reach (Zentner & Eagly, 2015). Evolutionary models suggest that women need help to access resources during pregnancy and during the post-partum period when their ability to provide for themselves and their offspring may be compromised by the physical demands of pregnancy, labour, and breastfeeding (Kenrick & Keefe, 1992). Given these physical and cultural limitations on their access to resources, it is not surprising that a woman's physical attractiveness is often viewed as a social commodity that she may exchange to obtain a higher-status romantic partner (Hoplock, Stinson & Joordens, 2019).

Heterosexual men's romantic reactions to a woman's social status are decidedly more mixed, and thus are the focus of the current research. Some research evinces a small, positive association between a woman's status and men's appraisals of her desirability as a romantic partner (Kenrick, Sundie, Nicastle & Stone, 2001), whereas other research suggests that a woman's status may have little or no impact on men's perceptions of her desirability as a romantic partner (Li et al., 2013). There is also some evidence to suggest that high status can dampen men's ardor: Men would rather date a lower-status woman, such as a subordinate at work, than date a woman of the same or higher status, such as a co-worker or supervisor (Brown & Lewis, 2004). When evaluating women as potential romantic partners, men rate highly-educated, high-earning women as less likable, less faithful, and ultimately less desirable than their lower-status counterparts (Greitemeyer, 2007).

Men's ambivalent attraction to female status is puzzling at first blush. A high-status partner can award a wide range of material and relational benefits that people of all genders can enjoy. We propose that this puzzle can be solved by considering that heterosexual men's romantic reaction to a woman's status may depend on the extent to which she conforms to consensual beauty ideals.

## 2. Explaining men's ambivalent attraction to high status women

Traditional, heteronormative gender roles prescribe that women should display traits such as warmth and submission, and they should be the caregiver within the family and occupy lower-status positions within society, whereas men should display traits such as agency and dominance, and they should be the provider within the family and occupy higher-status positions within society (e.g., Eagly & Wood, 1999). Women who violate these roles by occupying high-status social positions threaten important social norms and institutions, and

therefore, such women often encounter hostility from people who are motivated to reassert social norms and uphold social institutions (e.g., Rudman, Moss-Racusin, Phelan & Nauts, 2012). Thus, men who fail to perceive the benefits of dating a high-status woman – which is a kind of passive negative reaction to an objectively positive trait – or who feel romantic antipathy towards such women may be exhibiting these kinds of norm-supporting responses. It is also possible that the prospect of dating a high-status woman is personally threatening to men. Masculinity is fragile, and men may anticipate that dating a high-status woman will induce *gender-role stress* that they are motivated to avoid (Eisler, Skidmore & Ward, 1988).

However, if heterosexual men's romantic ambivalence towards high-status women occurs because such women violate gender-role expectations, then men's reactions to a woman's status may change if she is perceived to possess other characteristics that increase her perceived gender-role conformity. Being physically attractive may achieve this goal. Women whose appearance conforms to idealized standards of beauty are perceived to be more feminine (Heilman & Saruwatari, 1979), and indeed, such women do value traditionality and conformity more than their less-attractive counterparts (Langlois et al., 2000). Furthermore, whereas moderately-attractive women are perceived to be less feminine when they are high-status compared to low-status, beautiful women are perceived to be highly feminine irrespective of their status (Fisher, Stinson & Kalajdzic, 2019). This boost in perceived gender-role conformity that is afforded by physical attractiveness may allow men to appreciate the potential rewards of dating a high-status woman, free from system threats and gender-role stress that may be otherwise posed by her status. This reasoning leads us to predict that higher (vs. lower) status will decrease men's attraction to moderately-attractive women, whereas higher (vs. lower) status will increase men's attraction to highly-attractive women.

It is important to note that we did not design the current research to test the theoretical mechanisms that may underlie our proposed outcomes. First, it is essential to provide reliable evidence that men's romantic desire or dismissal of high-status women depends on the women's level of physical attractiveness, and we will report the results of three experiments seeking to achieve exactly that goal.

## 3. Research overview and potential contributions

We test our hypotheses in three experiments. In each study, moderately-attractive and highly-attractive women are purported to have either low-status or high-status career aspirations or accomplishments. In Experiment 1, we use a hypothetical scenario method to examine how heterosexual men's romantic and social attraction varies according to a woman's attractiveness and status. In Experiment 2, we use a realistic online-dating design, in which heterosexual male students believe they have the opportunity to meet the female student whom they are evaluating, and examine how men's romantic attraction and initiation behavior vary as a function of a woman's attractiveness and status. Finally, Experiment 3 uses the most naturalistic method of all to examine how a woman's attractiveness and status interact to predict heterosexual men's attraction and proximity-seeking behavior during a face-to-face interaction with a confederate. Moreover, in Experiments 1 and 2 we examine whether heterosexual women's social attraction to women and romantic attraction to men, respectively, vary as a function of attractiveness and status.

Our research utilizing behavioral measures and naturalistic experimental designs has the potential to make an important contribution to the scientific understanding of attraction. Prior research documenting gender differences in attraction to status and beauty has relied heavily on self-reported attitudes and hypothetical scenario methods in which people report how they think they might feel or behave. This kind of research is essential for theory development and provides important insights about people's attitudes and scripts concerning attraction. However, it is well known in psychological science that how people

think they will behave (or think or feel) often deviates markedly from how they actually behave (or think or feel; e.g., Nisbett & Wilson, 1977). This gulf between attitudes and behavior is also evident when it comes to attraction. For example, the traditionally-observed difference between men's and women's valuation of physical attractiveness disappears when dating behaviors, rather than intentions, are assessed (Eastwick & Finkel, 2008; Eastwick et al., 2014). Therefore, it is important to document attraction using a naturalistic methodology and behavioral dependent measures. By doing exactly this in our second and third experiments, which use highly-realistic methodologies, our research will test whether hypotheses that were generated from research using hypothetical scenario methods can generalize to predict initiation behavior.

Moreover, by testing whether attractiveness moderates the effects of status on romantic attraction, our research adds nuance and realism to the partner preference literature, which to date has focused primarily on main-effects. In everyday life, people do not evaluate the characteristics of a romantic partner in isolation. Consequently, one characteristic can moderate the relational value of another. For example, when evaluated in isolation, a cynical personality might be considered a relational cost. Yet when combined with quick wit and a sense of humor, a partner's cynicism could be a hilarious relational benefit. By the same logic, we propose that men's romantic response to a woman's social status will depend on her level of physical attractiveness, and this kind of interaction model of attraction is relatively new and under-represented in the field.

Our research is also timely given women's rapidly increasing academic and professional success (Wang, Parker & Taylor, 2013). Women are increasingly occupying a variety of high-status roles, and while negative stereotypes and biases against high-status women have been well-documented in other domains (e.g., Rudman et al., 2012), less is known about how these social changes may influence romantic desire. Lastly, by examining multiple forms of attraction, including heterosexual women evaluating other women, we are able to hone in on the specific context where the hypothesized dynamics arise: Namely, when heterosexual men evaluate women as potential romantic partners.

#### 4. Experiment 1

Men in Experiment 1 view the online profile of one of ten highly-attractive women or one of ten moderately-attractive women who is either high or low in status, and report their attraction toward the woman. Compared to the lower status women, we hypothesize that higher status will decrease men's attraction to moderately-attractive women but increase men's attraction to highly-attractive women. We also explore how women evaluate other women who vary in attractiveness and status.

#### 5. Method

In this study and all of the other studies that we report, we describe how we determined our sample size, all data exclusions, all manipulations, and most study measures (additional measures and analyses for each study are described in the Online Supplemental Materials [OSM]).<sup>1</sup> This experiment was pre-registered on the Open Science Framework: [doi.org/10.17605/OSF.IO/4DK7N].

##### 5.1. Participants

**Determining sample size.** We aimed to collect enough data to detect a medium effect ( $f^2 = 0.05$ ) with 95% power ( $\alpha = 0.05$ ) for the anticipated interaction between status and attractiveness predicting

men's attraction. We aimed to sample the same number of women. We then increased the sample size by 40% to account for planned exclusions. To increase the homogeneity of our sample and thus increase our statistical power (e.g., Funder et al., 2013), we excluded participants who were over the age of 35 or under the age of 18, because the women pictured in the stimuli photographs were all in their early-to-mid 20s. We also excluded participants who reported that English was not their first language, as our hypotheses may depend on Western cultural scripts and our status manipulation required close reading of a detailed profile written in English. Because our hypotheses concern hetero-normative scripts about men's romantic attraction to women, and women are included in our study as a non-romantic comparison group, we also excluded participants who did not identify as heterosexual/straight and individuals who did not identify as either a man or a woman.

Two hundred and forty-four participants from Amazon's Mechanical Turk took part in this study and met our inclusion criteria. Additional participants were excluded if they indicated that they failed to answer questions honestly ( $n = 7$ , defined as a score of four or below in response to the statement "I tried to answer the questions honestly"). We excluded people who failed the attention check (i.e., did not select the appropriate response to the statement "please select 'moderately agree' for this question";  $n = 4$ ). We also excluded people who indicated that they did not see the target's profile ( $n = 7$ ). We retained data from the first survey from a given IP address, but deleted subsequent surveys from the same IP address ( $n = 12$ ), because the duplicate IP address indicated that someone used the same computer to complete the survey on multiple occasions. After these exclusions, the sample included 214 participants ( $M_{\text{age}} = 28.70$  years,  $SD_{\text{age}} = 3.91$ ; 52.3% men, 47.7% women; 34.1% single, 65.9% in a relationship; 7.5% Asian or Asian American, 8.9% Black or African American, 0.9% Chinese, 0.5% Filipino, 3.7% Hispanic, 0.9% Korean, 0.9% Latino, 0.5% Mexican, 0.9% South Asian, 44.4% White, 30.8% another ethnic identity). Participants were paid \$0.75.

##### 5.2. Procedure

After providing demographic information (e.g., age), participants learned that they would be evaluating the profile of an individual who volunteered to participate in the testing-and-development phase of a new social media platform. All participants viewed a highly-realistic social media profile of a woman, including a profile picture. The woman's physical attractiveness was the first independent variable. The second independent variable was the woman's status, conveyed by career and income information. The profiles also described the woman's romantic status (single), hobbies, pets, and her desire for marriage and family. After viewing her profile, participants completed the dependent measures. Then they were debriefed, compensated, and thanked for their time.

##### 5.3. Independent variables

**Physical Attractiveness.** Ten *moderately-attractive* and ten *highly-attractive* photographs of white women were selected from the Chicago Face Database (Ma, Correll & Wittenbrink, 2015). These photos were previously normed and validated for attractiveness on a 7-point scale (1 = *not at all*, 7 = *extremely*). The ten highly-attractive photos had a mean attractiveness rating of 4.55 ( $SD = 0.34$ , 95% CI [4.39, 4.71]), whereas the ten moderately attractive photos had a mean attractiveness rating of 3.30 ( $SD = 0.16$ , 95% CI [3.23, 3.37]), *Mean Difference* = 1.25, *SE* = 0.12, 95% CI ([1.00, 1.49]),  $t(18) = 10.57$ ,  $p < .001$ ). Each participant was randomly assigned to view either one of the ten moderately-attractive or one of the ten highly-attractive photographs. Randomizing the target photographs within each condition accounted for the possibility that some stimuli may have elicited higher scores on average than others (Judd, Westfall & Kenny, 2012).

<sup>1</sup> The online supplemental materials file is posted on the Open Science Framework: [doi.org/10.17605/OSF.IO/4DK7N]

**Status.** The profile included information about the woman's profession. In the *low-status condition* the profile stated that the woman had one of two possible professions: Accounting Book-Keeper or Financial Sales Representative. The woman had also shared an article from Businessinsider.com titled "These are the 30 lowest-paying jobs in America for 2017" with the comment "I'm in the top ten! [embarrassed laughing emoji]." In the *high-status condition* the woman had one of two possible professions: Accountant or Financial Manager. The title of the article that the woman shared read "These are the 30 highest-paying jobs in America for 2017," which was again accompanied by the comment "I'm in the top ten! [embarrassed laughing emoji]." Ten research assistants rated the social status of each profession (e.g., How would you rate the social status [e.g., importance and prestige] of the following occupation?). The high- and low-status professions were perceived to be different in social status in the intended manner, both  $t_s > 2.78$ . Each participant was randomly assigned to view either one of the two low-status professions or one of the two high-status professions.<sup>2</sup>

#### 5.4. Dependent measures

**Romantic attraction.** Male participants used a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) to indicate their agreement with three statements evaluating their romantic attraction toward the profile target (e.g., "I feel like I would have potential romantic chemistry with this person"; Fletcher, Kerr, Li, & Valentine, 2014). They also selected topics of conversation for a hypothetical chat with their partner. Participants selected as many topics as they liked from a list of twenty-two possible topics (e.g., talk about the weather), four of which were explicitly intimate (e.g., plan a future date with your partner). The four intimacy items were summed (0 = *no intimate topics selected*, 4 = *all four intimate topics selected*). Then, all of these items were standardized and then averaged to form a reliable measure of *romantic attraction* ( $\alpha = 0.81$ ).<sup>3</sup>

**Social attraction.** All participants used a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) to indicate their agreement with five statements evaluating their social attraction toward the profile target (e.g., "I am interested in a friendship with this person"). These items were standardized and then averaged to form a reliable measure of social attraction ( $\alpha = 0.88$  for men,  $\alpha = 0.86$  for women).

## 6. Results

Preliminary analyses revealed that participants' relationship status and own anticipated future income did not moderate the results we report, so these variables were omitted from the analyses that follow (descriptive statistics and the correlations among variables are reported in the OSM).

**Men's romantic attraction.** We entered status condition (0 = low, 1 = high) and attractiveness condition (0 = moderate, 1 = high) into a univariate Analysis of Variance (ANOVA) predicting men's romantic attraction. There was no main effect of status  $F(1, 108) = 1.36, p = .25, \eta_p^2 = 0.012$ , but there was a main effect of attractiveness,  $F(1, 108) = 5.26, p = .024, \eta_p^2 = 0.046$ . Men were more attracted to the highly attractive profiles ( $M = 0.23, SD = 0.86$ ) than the moderately attractive profiles ( $M = -0.07, SD = 0.83$ ). However, the anticipated

interaction between status and attractiveness emerged,  $F(1, 108) = 8.74, p = .004, \eta_p^2 = 0.075$  (see Fig. 1). Men were equally attracted to the moderately-attractive women when they were high status compared to low status,  $F(1, 108) = 1.51, p = .22, \eta_p^2 = 0.014$ , *Mean Difference* =  $-0.28, SE = 0.23, 95\% CI$  for *Mean Difference* [ $-0.73, 0.17$ ]. In contrast, men were more attracted to the highly-attractive women when they were high status compared to low status,  $F(1, 108) = 9.02, p = .003, \eta_p^2 = 0.077$ , *Mean Difference* =  $0.64, SE = 0.21, 95\% CI$  for *Mean Difference* [ $.22, 1.07$ ].

Although we did not have confirmatory hypotheses concerning attractiveness effects within each status condition, we explored those simple effects. Men were equally attracted to the low-status women when they were highly-attractive and moderately-attractive,  $F(1, 108) = 0.25, p = .62, \eta_p^2 = 0.002$ , *Mean Difference* =  $-0.10, SE = 0.21, 95\% CI$  for *Mean Difference* [ $-0.52, 0.31$ ] but were more attracted to the high-status women when they were highly-attractive compared to moderately attractive,  $F(1, 108) = 12.54, p = .001, \eta_p^2 = 0.104$ , *Mean Difference* =  $0.82, SE = 0.23, 95\% CI$  for *Mean Difference* [ $.36, 1.26$ ].

**Social attraction.** We entered status condition (0 = low, 1 = high), attractiveness condition (0 = moderate, 1 = high), and gender (0 = women, 1 = men) into an ANOVA predicting participants' social attraction. The three-way interaction emerged,  $F(1, 206) = 7.33, p = .007, \eta_p^2 = 0.034$ .

**Men evaluating women.** We entered status condition (0 = low, 1 = high) and attractiveness condition (0 = moderate, 1 = high) into an ANOVA predicting men's social attraction. There were no main effects of attractiveness or status,  $F_s < 1.16$ . However, the anticipated interaction between status and attractiveness emerged once again,  $F(1, 108) = 8.09, p = .005, \eta_p^2 = 0.07$ . These results parallel the observed results for men's romantic attraction. Men expressed similar levels of social attraction for the moderately-attractive women when they were high-status ( $M = -0.08, SD = 0.68$ ) compared to low-status ( $M = 0.18, SD = 0.89$ ),  $F(1, 108) = 1.48, p = .23, \eta_p^2 = 0.013$ , *Mean Difference* =  $-0.26, SE = 0.22, 95\% CI$  for *Mean Difference* [ $-0.69, 0.17$ ]. In contrast, men expressed stronger social attraction for the highly-attractive women when they were high-status ( $M = 0.38, SD = 0.74$ ) compared to low-status ( $M = -0.20, SD = 0.78$ ),  $F(1, 108) = 8.16, p = .005, \eta_p^2 = 0.07$ , *Mean Difference* =  $0.59, SE = 0.21, 95\% CI$  for *Mean Difference* [ $.18, 0.99$ ].

Once again, we explored the simple effects of attractiveness within each status condition. Men were equally attracted to the low-status women when they were highly-attractive compared to moderately-attractive,  $F(1, 108) = 3.63, p = .06, \eta_p^2 = 0.032$ , *Mean Difference* =  $-0.38, SE = 0.20, 95\% CI$  for *Mean Difference* [ $-0.78, 0.02$ ] but were more attracted to the high-status women when they were highly-attractive compared to moderately attractive,  $F(1, 108) = 4.47, p = .037, \eta_p^2 = 0.04$ , *Mean Difference* =  $0.47, SE = 0.22, 95\% CI$  for *Mean Difference* [ $.03, 0.91$ ].

**Women evaluating women.** Next, we used the same ANOVA to predict women's social attraction. There were no significant effects, all  $F_s < 1.01$ . Women were equally socially attracted to the target women across all conditions, ( $M = 0.014, SD = 0.76$ ).

## 7. Discussion

The results of our first experiment revealed that men's romantic attraction to a moderately-attractive woman was not affected by her status ( $d = -0.24$ ), although the valence of this observed effect was in the anticipated direction. In contrast, and as predicted, higher (vs. lower) status increased men's attraction towards a highly-attractive woman ( $d = 0.58$ ). The same pattern emerged for men's social attraction. In fact, men's romantic and social attraction were highly correlated ( $r = 0.70, p < .001$ ), affirming prior research demonstrating that men have difficulty seeing women in a non-romantic light (Bleske-Rechek & Buss, 2001). Finally, our observation that women's social

<sup>2</sup> We collected data for participants assigned to two additional professions, Researcher and Biologist. Unfortunately, our manipulation check indicated that our attempt to manipulate status for these professions failed. Participants assigned to these professions were excluded from our study and are not included in our description of the sample or the results we report.

<sup>3</sup> The items in this dependent measure differ from those in our pre-registration plan in order to be more consistent with the dependent measures of romantic attraction used in Study 2 and 3. The results are similar when the pre-registered items are used.



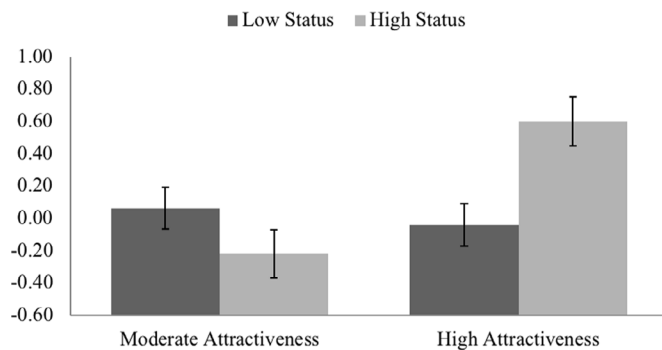


Fig. 1. Men's romantic attraction (standardized) as a function of women's attractiveness and status in Experiment 1. M = mean, SD = standard deviation. Error bars reflect standard errors.

attraction to other women is not affected by either attractiveness or status further corroborates the gendered and heteronormative nature of men's reactions.

## 8. Experiment 2

Experiment 2 uses a method similar to Experiment 1, but participants believe they are viewing the profile of a fellow student at the same university whom they could meet in person. So we assessed romantic attraction and actual initiation behavior in this study. Second, we use a set of more naturalistic photographs of students to manipulate the attractiveness of the profile partners, taken in the same highly-recognizable campus location where the study took place to increase experimental realism. Our predictions for men evaluating women remain the same. For comparison and exploratory purposes, we also examine whether attractiveness and status affect women's attraction to men.

## 9. Method

### 9.1. Participants

We recruited as many participants as we could in one academic term. The study took place in a communal location on the university campus and we welcomed all interested participants. Three hundred and forty-one participants met our inclusion criteria (i.e., between the ages of 18 and 35, reported English as their first language, and identified as a heterosexual/straight man or woman). Additional participants were excluded because they had to leave the study partway through or had computer difficulties ( $n = 2$ ), they did not consent for their data to be used in the study ( $n = 2$ ), or they suspected that the profile was fake ( $n = 5$ ). The final sample included 332 participants ( $M_{\text{age}} = 21.52$  years,  $SD_{\text{age}} = 3.09$ ; 44% men, 56% women; 46.4% single, 53.6% in a relationship; 0.3% Arab, 1.2% Black or African Canadian, 4.8% Chinese, 1.5% Filipino, 1.5% Japanese, 0.3% Korean, 0.9% Latino, 3.3% South Asian, 1.8% Southeast Asian, 1% West Asian, 90.4% White, 5.1% another ethnic identity). Participants were gifted a chocolate bar.

### 9.2. Procedure

Participants learned that they would be "meeting" a fellow student who had participated in the study on a previous day (i.e., their *partner*) by reading their partners' social media profile. Participants learned that they could also create their own profile, which they could share with their partner if they desired.

Participants then completed demographic questions (e.g., relationship status, expected future income) and viewed their partner's profile, which included a photograph that appeared to have been taken where

the participant was currently sitting. The partner's physical attractiveness was the first independent variable. The second independent variable was the partner's status, conveyed by career aspirations and anticipated future income information. The profiles also described the partner's romantic status (single), hobbies, pets, and their desire for marriage and family. Next, participants reported their romantic attraction to their partner. Then participants were offered the opportunity to create their own profile following the same format as their partner's profile, and share their profile, send a private message, and provide their contact information to their partner. Finally, participants were debriefed, compensated, and thanked for their time.

### 9.3. Independent variables

**Physical attractiveness.** Three female and three male profile partners were *moderately-attractive* and three female and three male profile partners were *highly-attractive*. Three hundred and seventy-seven participants viewed the profile partners' photographs and used a 7-point scale to rate the profile partners' attractiveness (1 = *Not at all attractive*, 7 = *Extremely attractive*). The three highly-attractive women had a mean attractiveness rating of 4.77 ( $SD = 1.00$ , 95% CI [4.67, 4.87]), whereas the three moderately-attractive women had a mean attractiveness rating of 3.45 ( $SD = 1.11$ , 95% CI [3.34, 3.57], *Mean Difference* = 1.32,  $SE = 0.05$ ,  $t(376) = 26.06$ ,  $p < 0.001$ , 95% CI [1.22, 1.42]). The three highly-attractive men had a mean attractiveness rating of 4.50 ( $SD = 1.22$ , 95% CI [4.38, 4.63]), whereas the three moderately-attractive men had a mean attractiveness rating of 3.44 ( $SD = 1.07$ , 95% CI [3.33, 3.56], *Mean Difference* = 1.07,  $SE = 0.04$ ,  $t(376) = 23.97$ ,  $p < 0.001$ , 95% CI [0.98, 1.15]). Male participants were always assigned a female partner and female participants were always assigned a male partner, and each participant was randomly assigned to view one of the three possible profile partners of their assigned gender within each attractiveness condition.

**Status.** Under the partner's profile picture was a short biography, which included information about the partners' future career goals and income. In the *low-status condition*, the profile said that the target was going to become an "Accounting Book-Keeper" and their income will be "\$35,000 per year." Alternatively, in the *high-status condition*, the career and income were replaced with "Accountant" and "\$100,000 per year." Ten research assistants rated the social status of these occupations on a 7-point scale (1 = *Very below average*, 7 = *Very above average*). The results indicated that Accountant and Accounting Book-keeper were perceived to be markedly different in social status (Accountant:  $M = 5.40$   $SD = 1.17$ ; Accounting Book-Keeper:  $M = 4.30$ ,  $SD = 1.06$ ; *Mean Difference* = 1.10,  $SE = 0.23$ ,  $t(9) = 4.71$ ,  $p = .001$ , 95% CI of *Mean Difference* [.57, 1.63]).

### 9.4. Dependent measures

**Romantic attraction.** Participants used a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) to indicate their agreement with four statements evaluating their romantic attraction toward the profile target (e.g., "I would be interested in going on a date with this person"). Participants' initiation behavior was also assessed by taking the sum of three behaviors: shared profile (0 = did not share, 1 = shared profile), sent a private message (0 = did not send message, 1 = sent message), and provided their contact information (0 = did not provide contact information, 1 = provided contact information). These items were standardized and averaged to create a reliable measure of romantic attraction ( $\alpha = 0.83$  for men,  $\alpha = 0.80$  for women).

**Participant attractiveness.** Two research assistants coded the attractiveness of each participant (e.g., "The participant is attractive") on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Inter-rater reliability was good ( $r = 0.70$ ).

## 10. Results

Preliminary analyses revealed that participants' relationship status (0 = single, 1 = in a relationship), own anticipated future income ( $M = \$93,907$ ,  $SD = \$87,990$ ), and observer-rated attractiveness ( $M = 4.35$ ,  $SD = 0.95$ ) did not moderate the results we report, so these variables were omitted from the analyses that follow (descriptive statistics and the correlations among variables are presented in the OSM).

### 10.1. Romantic attraction

We entered status condition (0 = low, 1 = high), attractiveness condition (0 = moderate, 1 = high), and gender (0 = women, 1 = men) into a univariate Analysis of Variance (ANOVA) predicting attraction, and a three-way interaction emerged,  $F(1, 317) = 7.50$ ,  $p = .007$ ,  $\eta_p^2 = 0.023$ .

**Men evaluating women.** We entered status condition (0 = low, 1 = high) and attractiveness condition (0 = moderate, 1 = high) into an ANOVA predicting men's romantic attraction. There was a main effect of attractiveness,  $F(1, 140) = 4.81$ ,  $p = .03$ ,  $\eta^2 = 0.033$ . Men were more attracted to the highly-attractive women compared to the moderately-attractive women. The anticipated interaction between status and attractiveness also emerged,  $F(1, 140) = 7.08$ ,  $p = .009$ ,  $\eta^2 = 0.048$  (see Fig. 2).

Men were equally attracted to their moderately-attractive profile partners when they were high-status compared to low-status,  $F(1, 140) = 1.14$ ,  $p = .29$ ,  $\eta^2 = 0.008$ , *Mean Difference* =  $-0.20$ , *SE* = 0.18, *95% CI for Mean Difference* [ $-0.56, 0.17$ ]. In contrast, men were more attracted to their highly-attractive profile partners when they were high-status compared to low-status,  $F(1, 140) = 7.57$ ,  $p = .007$ ,  $\eta^2 = 0.051$ , *Mean Difference* = 0.47, *SE* = 0.17, *95% CI for Mean Difference* [.13, 0.81].

Once again, we explored the simple effects of attractiveness within each status condition. As before, men were equally attracted to the low-status women when they were highly-attractive compared to moderately-attractive,  $F(1, 140) = 0.11$ ,  $p = .75$ ,  $\eta_p^2 = 0.001$ , *Mean Difference* =  $-0.06$ , *SE* = 0.18, *95% CI for Mean Difference* [ $-0.42, 0.30$ ]. In contrast, men were more romantically attracted to the high-status women when they were highly-attractive compared to moderately attractive,  $F(1, 140) = 12.15$ ,  $p = .001$ ,  $\eta_p^2 = 0.08$ , *Mean Difference* = 0.61, *SE* = 0.18, *95% CI for Mean Difference* [.26, 0.95].

**Women evaluating men.** Next, we used the same ANOVA to predict women's romantic attraction towards their partner. Results revealed a main effect of attractiveness,  $F(1, 210) = 9.34$ ,  $p = .003$ ,  $\eta^2 = 0.05$ . Women were more attracted to the highly-attractive men than the moderately-attractive men. No other effects emerged,  $F_s < 1.24$ .

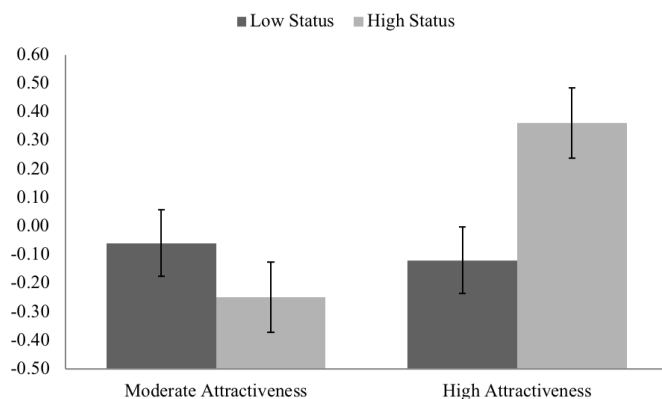


Fig. 2. Men's romantic attraction (standardized) as a function of women's attractiveness and status in Experiment 2. M = mean, SD = standard deviation. Error bars reflect standard errors.

## 11. Discussion

Consistent with the results of Experiment 1, status did not influence men's attraction to the moderately-attractive women ( $d = -0.18$ ), although once again, this small negative effect was in the anticipated direction. In contrast, higher status increased men's attraction to the highly-attractive woman ( $d = 0.46$ ). The current results also demonstrate that these processes affect men's actual romantic attraction and behavior towards a woman whom they believe they have the opportunity to meet. Our results also revealed that women's attraction was only determined by the target men's attractiveness; status did not matter at all to these women. These findings are consistent with research demonstrating that gender differences in reported preferences regarding physical attractiveness are attenuated, or even eliminated, in realistic dating contexts (Eastwick & Finkel, 2008). It is possible that the women's preferences were a consequence of their own high status. Prior research has demonstrated that as women's own status increases, they become less motivated to obtain high-status male partners (Eagly, Eastwick & Johannesen-Schmidt, 2009).

## 12. Experiment 3

Our final study is a naturalistic field experiment that tests our hypothesis in a face-to-face, first-meeting scenario. Female confederates who vary in attractiveness approach men on a university campus and ask them to evaluate a speech that they have been assigned to perform for a class project. In the speech, the confederates disclose their future career and income and romantic availability. We then assess men's initiation behavior. Our hypotheses remain the same.

## 13. Method

### 13.1. Participants

We recruited as many participants as we could in one academic term. As in previous studies, we excluded participants who were over the age of 35 and who did not identify as heterosexual/straight men. Data from three additional participants were excluded because a friend interrupted them during the study. The final sample included 181 men ( $M_{age} = 21.29$ ;  $SD_{age} = 2.94$ ; 65.2% single, 33.91% in a relationship; 9.9% Asian, 3.3% Black or African Canadian, 3.9% East Indian, 1.1% First Nations, 2.2% Hispanic, 79.4% White, 2.8% another ethnic identity). Participants were gifted a chocolate bar.

### 13.2. Procedure

One of four white, female confederates approached potential participants individually at communal locations on the University campus and asked each man if he had approximately five minutes to help her with a class project. The confederate informed the participant that he would be evaluating a short speech that she would perform for a class on public speaking. The confederate also informed the participant that his evaluation would be seen by her professor, but she would not see his feedback. Then, the confederate delivered her speech, which included the status manipulation. After listening to the speech, the participant completed the dependent measures and demographic items. Finally, participants were thanked, debriefed concerning the true purposes of the study, and awarded their compensation.

### 13.3. Independent variables

**Physical attractiveness.** Two confederates were *moderately-attractive* and two confederates were *highly-attractive*. Three hundred and seventy-seven participants viewed photographs of the confederates and used a 7-point scale to rate each confederate's attractiveness (1 = *Not at all attractive*, 7 = *Extremely attractive*). The two highly-attractive

confederates had a mean attractiveness rating of 5.29 ( $SD = 1.00$ , 95%  $CI [5.19, 5.39]$ ), whereas the moderately-attractive confederates had a mean attractiveness rating of 3.79 ( $SD = 1.08$ , 95%  $CI [3.68, 3.90]$ ;  $Mean Difference = 1.50$ ,  $SD = 1.13$ ,  $t(375) = 25.66$ ,  $p < .001$ , 95%  $CI for the Mean Difference [1.38, 1.61]$ ).

**Status.** The content of the confederate's speech included the status manipulation. In both conditions, the speech mentioned that the confederate was taking a professional development workshop, and the speech was part of a unit on "Presentation Skills." The speech also described the confederate's educational and career goals, as well as her relationship status (single) and desire for a marriage and family. Critically, in the *high-status condition*, the confederate's speech mentioned that she had been offered a job after graduation as an "Accountant" that would pay "\$100,000 per year" once she had received her accreditation. In the *low-status condition*, she said she was offered a job as an "Accounting Book-keeper" that paid "\$35,000 per year."

#### 13.4. Measures

**Attraction.** The participant used a 7-point scale (1 = *not at all interested*, 7 = *extremely interested*) to indicate his interest in joining a focus group that the confederate was supposedly hosting at a future date, as part of her class project. He also indicated how many meetings he would like to attend, using a 7-point scale (1 = *zero meetings*, 7 = *10+ meetings*). He used a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) to report his willingness to attend meetings held late in the evenings, and on Saturday and Sunday mornings at 8:00 am. Then he was asked to provide his name and email (0 = *did not provide contact information*, 1 = *provided name or email*, 2 = *provided name and email*) so that the confederate could contact him about the focus group. These items have been used in prior research to measure attraction (e.g., Anthony, Holmes & Wood, 2007), and were standardized and averaged ( $\alpha = 0.81$ ) to create a reliable measure of attraction.

**Participant attractiveness.** Three research assistants sat nearby and coded the attractiveness of each participant (e.g., "The participant is attractive") on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Inter-rater reliability was good ( $ICC = 0.78$ ).

#### 14. Results

Preliminary analyses indicated that participants' expected future income and physical attractiveness did not moderate the results we report below, so these variables were omitted from the analyses (descriptive statistics and the correlations among variables are reported in the OSM).

We entered physical attractiveness condition (0 = moderately attractive, 1 = highly attractive) and status condition (0 = low status, 1 = high status) into an ANOVA predicting attraction. There were no main effects of physical attractiveness,  $F(1, 176) = 3.45$ ,  $p = .07$ ,  $\eta^2 = 0.019$ , nor status,  $F(1, 176) = 0.58$ ,  $p = .45$ ,  $\eta^2 = 0.003$ . However, the anticipated two-way interaction between physical attractiveness and status emerged,  $F(1, 176) = 5.16$ ,  $p = .024$ ,  $\eta^2 = 0.028$  (see Fig. 3).

As in previous experiments, men were similarly attracted to the moderately-attractive confederate when she aspired to a high-status compared to a low-status job,  $F(1, 176) = 1.08$ ,  $p = .30$ ,  $\eta^2 = 0.006$ ,  $Mean Difference = -0.17$ ,  $SE = 0.17$ , 95%  $CI [-0.51, 0.16]$ . In contrast, and as predicted, men were more attracted to the highly-attractive confederate when she aspired to a high-status compared to a low-status job,  $F(1, 176) = 4.86$ ,  $p = .029$ ,  $\eta^2 = 0.027$ ,  $Mean Difference = 0.35$ ,  $SE = 0.16$ , 95%  $CI [.04, 0.66]$ .

We also explored the simple effects of attractiveness within each status condition. Men were equally attracted to the low-status women when they were highly-attractive compared to moderately-attractive,  $F(1, 176) = 0.082$ ,  $p = .78$ ,  $\eta_p^2 = 0.00$ ,  $Mean Difference = -0.05$ ,  $SE = 0.17$ , 95%  $CI for Mean Difference [-0.38, 0.28]$ . In contrast, men

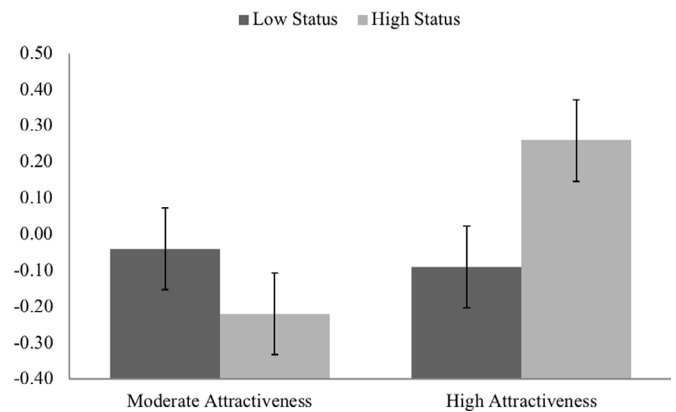


Fig. 3. Men's attraction (standardized) as a function of the female confederate's attractiveness and status in Experiment 3. M = mean, SD = standard deviation. Error bars reflect standard errors.

were more attracted to the high-status women when they were highly-attractive compared to moderately-attractive,  $F(1, 176) = 8.91$ ,  $p = .003$ ,  $\eta_p^2 = 0.05$ ,  $Mean Difference = 0.48$ ,  $SE = 0.16$ , 95%  $CI for Mean Difference [.16, 0.79]$ .

#### 15. Discussion

As in our first two experiments, men's attraction toward the moderately-attractive woman did not differ as a function of her status ( $d = -0.16$ ), although this effect was in the anticipated direction. In contrast, men expressed stronger attraction towards the highly-attractive woman when she aspired to a high-status job compared to a low-status job ( $d = 0.33$ ).

##### 15.1. Meta-analysis across studies

One limitation of our research is that our individual experiments were underpowered to detect smaller effects, a common problem in psychological research (Funder et al., 2013). Post-hoc sensitivity analyses using G\*power (Faul, Erdfelder, Lang & Buchner, 2017) revealed that our individual studies were underpowered to detect the smaller status effects that we observed in the moderately attractive conditions. Data for Experiments 2 and 3 were collected before recent discussions concerning the need for larger sample sizes in psychological research, and our sample planning for Experiment 1 was based on the (somewhat arbitrary) expectation of medium size effects ( $\eta^2 = 0.05$ ). However, non-significant effects are common and expected in multi-study papers (Lakens & Etz, 2017), especially when studies are underpowered. Therefore, to increase our statistical power and to obtain a more precise estimate of our hypothesized status effects, we followed current recommendations concerning best practices in social psychological and personality research and conducted a mini meta-analysis of our three studies (see Cumming, 2014; Goh, Hall & Rosenthal, 2016). The purpose of a meta-analysis is to obtain an unbiased estimate of an effect, and as such it emphasizes the reliability and replicability of findings over the specific p-values associated with particular tests. Put another way, whether or not the results of individual studies reach the traditional bar for statistical significance is less relevant to the goals of meta-analysis.

We used Cumming's (2013) meta-analysis module with random effects to test our ambivalent attraction hypothesis. As predicted, results for the moderately-attractive conditions produced a significant average estimated status effect of  $d = -0.20$ , 95%  $Confidence Interval (CI) [-0.40, -0.001]$ . Also as predicted, results for the highly-attractive conditions produced a significant estimated status effect of  $d = 0.47$ , 95%  $CI [.27, 0.68]$ . These are considered small and medium-sized effects, respectively, and even small effects can have meaningful

theoretical and practical implications (Meyer et al., 2001).

For exploratory purposes, we also meta-analyzed the attractiveness effects within each status condition. These exploratory meta-analyses yielded a non-significant effect of attractiveness for the low-status women,  $d = -0.11$ , 95% CI [-0.30, 0.07] and a significant effect of attractiveness for the high-status women,  $d = 0.53$ , 95% CI [.32, 0.74].

Taken together, the results of our meta-analyses revealed that the average estimated negative effect of status on men's attraction to moderately-attractive women and the average estimated positive effect of status on men's attraction to highly-attractive women are both appreciably different from zero, and they are appreciably different from one another ( $d = 0.67$ , 95% CI [.38, 0.96]). Consistent with our ambivalent attraction hypothesis, across three experiments higher (vs. lower) status decreased men's attraction to moderately attractive women whereas higher (vs. lower) status increased men's attraction to highly-attractive women.

## 16. General discussion

Our research using naturalistic methods and behavioral measures clarifies and adds nuance to the current understanding of attraction by demonstrating that beauty determines whether heterosexual men romantically desire, or dismiss, a high-status woman. Consistent with our ambivalent attraction hypothesis, our meta-analysis revealed that men were *less* attracted to a moderately-attractive woman when she occupied a high-status compared to a low-status role. This result is consistent with past research demonstrating that men tend to derogate and distance themselves romantically from high-status women (Greitemeyer, 2007), likely because the thought of dating such women induces upward social comparisons that threaten their masculinity (Park, Young & Eastwick, 2015). Although our observed negative effect of status was small, it is concerning given women's rapidly increasing economic potential (e.g., Wang et al., 2013). Moreover, since most people are "moderately" attractive rather than "highly" attractive, men may overlook most high-status women as potential partners. Over time and across successive partners, men's subtle tendency to dismiss high-status women as potential romantic partners may compromise their own social outcomes and future financial security. Moreover, if women are aware of men's distaste for high-status women (and they probably are; e.g., Park, Young, Troisi & Pinkus, 2011), then they may avoid high-status career paths for fear of romantic rejection. Thus, men's romantic dismissal of high-status women may contribute to a broader cultural atmosphere of hostility towards ambitious and high-status women. Future research should explore these possibilities.

Furthermore, our meta-analysis affirms that men were *more* attracted to a highly-attractive woman when she occupied a high-status compared to a low-status role. Thus, it is not the case that men are universally disinterested in high-status women. If a woman is exceptionally beautiful, then her status becomes a boon that men desire. Perhaps the prospect of fulfilling the heteronormative ideal of dating (or possessing; Fredrickson & Roberts, 1997) a very beautiful woman undoes the gender-role stress that a high-status woman might otherwise provoke. Or perhaps dating a high-status woman whose beauty leads others to perceive that she conforms to traditional gender roles (Fisher et al., 2019) allows men to avoid the costs of dating a high-status woman and reap the social rewards of being with an attractive partner (Bar-Tal & Saxe, 1976). Again, future research should explore all of these potential mechanisms.

### 16.1. Limitations and alternative explanations

It is important to note that Experiments 2 and 3 were conducted at a mid-sized, metropolitan University campus in a politically-liberal Canadian city, and sampled predominantly young, white, straight/heterosexual, undergraduate men. Thus, our research reflects a heteronormative account of romantic partner preferences that is likely

restricted to a particular class, ethnic demographic, and sexual orientation. More research is needed to examine how status and beauty affect attraction among more diverse populations. For instance, queer men may be less likely to conform to traditional gender roles (Rieger, Linsenmeier, Gygax & Bailey, 2008), and may therefore be less likely to dismiss high-status women as potential romantic partners. Moreover, because the men in our sample were relatively high-status themselves, we cannot rule out the possibility that our results are specific to high-status men. It may be easier for high-status men to prioritize their own self-protection and self-image over their economic needs, which could explain their romantic dismissal of high-status, moderately attractive women. Lower-status men may not demonstrate the same effect, as finding a high-status partner might be more inherently rewarding to them. The men in our studies also expected to make a great deal of money in their future careers, and this expectation may have influenced their desire for a beautiful and high-status woman, who they believe will "match" their future income potential (McClintock, 2014). Investigating these and other individual differences in men's motivation and dating strategies may prove fruitful for future research.

The superordinate goal of our research was to test the possibility that a woman's status and beauty interact to influence heterosexual men's attraction, and our three experiments provide clear evidence that this is indeed the case. However, because our interactive hypothesis is novel to the partner preferences literature, anticipating the exact form that such an interaction could take was limited by the lack of prior relevant research. We proposed an ambivalent attraction model based on existing research concerning men's mixed attraction to female status and the links between attractiveness and perceived femininity, and our meta-analysis supported that model. However, we recognize that there are alternative explanations for the pattern of results that we observed. These alternative explanations could not be predicted a priori on the basis of the extant literature, but they become apparent when considering the consistent pattern of results that we observed across our three experiments.

For instance, attractiveness and status may have a catalytic effect on men's romantic attraction. Men appeared to favor the highly-attractive, high-status women over the women in all other conditions (see OSM for additional exploratory analyses). Thus, a high level of status and a high degree of attractiveness may be required to ignite heterosexual men's romantic attraction. Our exploratory meta-analysis of the attractiveness effects within each status condition also suggests that beauty does not boost men's attraction to low-status women. This null effect is surprising given the strong attractiveness effects that have been documented in the partner preferences literature. At the same time, no prior research has examined how status moderates attractiveness preferences before, so it is possible that we have identified a new limit to the "beautiful is good" effect that bears further exploration. Furthermore, although our fully crossed design does not allow us to isolate the reasons why the men in our studies appeared to be equally attracted to the moderately-attractive, high-status women and the highly-attractive, low-status women, future research should seek to understand this unanticipated result. Beauty may be more beneficial for high-status women because people expect high status women to be beautiful (Ramati-Ziber, Shnabel & Glick, 2019). It is also possible that men are sensitive to status-incongruity (Rudman et al., 2012), and thus are most attracted to women when their status and attractiveness are congruent (i.e., high/high) rather than incongruent (i.e., low/high). However, we are hesitant to go too far with any of these interpretations because the effects in question were unexpected and inconsistent with prior research. So these effects need to be replicated in experiments designed for that purpose before drawing theoretical conclusions.

## Conclusion

Our findings have implications for attraction theory and methods.



Specifically, our research affirms the importance of using behavioral measures to examine attraction, as self-reported attraction can often be misleading. For instance, our results suggest that men may evaluate the whole constellation of a woman's traits simultaneously rather than sequentially (e.g., Li et al., 2002), which subsequently calls into question the use of certain methods to study romantic partner preferences. Methods that involve hypothetical scenarios or imaginary future partners may fail to reproduce the complex interplay of individual characteristics and interpersonal dynamics that occur when people consider actual romantic partners, ultimately making it more difficult for researchers to detect the finer nuances of interpersonal attraction.

### Author note

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### CRedit authorship contribution statement

**Alexandra N. Fisher:** Conceptualization, Methodology, Writing - original draft, Formal analysis, Data curation, Writing - review & editing, Visualization, Project administration, Funding acquisition. **Danu Anthony Stinson:** Conceptualization, Methodology, Formal analysis, Resources, Writing - review & editing, Supervision, Funding acquisition.

### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.paid.2019.109681.

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