Adaptive Human Behavior and Physiology
https://doi.org/10.1007/s40750-022-00188-6

ORIGINAL ARTICLE

Changes in Positive Affect Due to Popularity in an Experimental Dating Context Influence Some of Men's, but Not Women's, Socio-Political Attitudes

Francesca R. Luberti[1,2] · **Khandis R. Blake**[1,3] · **Robert C. Brooks**[1]

Received: 28 September 2021 / Revised: 15 February 2022 / Accepted: 16 February 2022

Abstract

Objective Trait mate value covaries with several socio-political attitudes. One's dating popularity in a mating market can, however, shift one's self-perceived mate value in that market. We tested whether dating popularity could therefore also shift socio-political attitudes, and whether trait mate value could moderate this effect.

Method Heterosexual participants ($N = 237$) reported their trait mate value. Participants then recorded a video of themselves and received video responses from five opposite-sex peers, each consisting of either positive or negative romantic feedback—forming the manipulation (popularity: from low to high). Afterwards, we measured participants' attitudes to traditional gender roles, casual sex, minimum wage and healthcare, and implicit sexual and political attitudes.

Results Unpopular men reported less support for casual sex than popular men. There was no main effect on women. Unpopular men had lower positive affect than popular men, and in turn men with lower positive affect reported less support for casual sex and for increasing the minimum wage and access to healthcare than men with higher positive affect. Unpopular low mate-value women reported more support for casual sex than popular low mate-value women. Unpopular men of low and average mate value reported less support for casual sex than popular men of low and average mate value. There was no effect on average mate-value women and high mate-value women and men.

Conclusions Changes in positive affect due to dating popularity influence some of men's, but not women's, socio-political attitudes, and trait mate value moderates the effects of popularity on attitudes to casual sex.

Keywords Casual sex · Dating popularity · Self-perceived mate value · Sex differences · Socio-political attitudes

✉ Francesca R. Luberti
f.luberti@unswalumni.com

Extended author information available on the last page of the article

Published online: 14 March 2022

Introduction

Romantic successes and failures, as well as reproductive decisions, might seem trivial to other spheres of an individual's life, especially their politics. Instead, differences between individuals in reproductive interests can generate important ideological differences (Alexander, 1982, 1987). Multiple strands of evidence have shown that mating and reproductive events significantly influence individual socio-political attitudes. For example, a higher preference for a restricted sexual lifestyle is connected to higher religiosity cross-culturally (e.g., Weeden & Kurzban, 2013), and parenthood is connected to increases in social conservatism (Kerry & Murray, 2018, 2019b). Romantic rejection can significantly increase both men's and women's hostile attitudes and aggressive behaviours towards the opposite sex (e.g., Andrighetto et al., 2019; Ayduk et al., 1999; Blake et al., 2018; Stratmoen et al., 2018). Local ecologies characterized by heightened male intrasexual competition for mates, such as areas with high income inequality, male-biased sex ratios, and with cultural practices like high bride-prices, can distort mating markets and lead on to radicalisation and violence (Brooks et al., 2022; Hudson & Matfess, 2017). In short, romance, mating, and reproduction can impact politics.

Evolutionary insights into human behaviour suggest that mating can influence socio-political attitudes because individuals, although unconsciously, endorse socio-political attitudes that advance, or at least reflect, their mating self-interest (e.g., Petersen, 2017; Pinsof & Haselton, 2016; Weeden et al., 2016). Sexually restricted individuals (i.e., individuals who generally disapprove of, and do not engage in, short-term casual mating), for example, embrace religiosity, because religion promotes values that discourage casual sex (e.g., Weeden & Kurzban, 2013; Weeden et al., 2008, 2016). An individual's mate value (i.e., their value as a sex/romantic partner) can also covary with the individual's sexual attitudes (e.g., Gangestad & Simpson, 2000; Landolt et al., 1995; Price et al., 2015; Regan, 1998), because individuals hold sexual attitudes that best benefit their reproductive fitness based on their mate value in their current mating market (e.g., Noë, 2017). There is even some evidence that experimentally manipulating an individual's popularity among potential romantic partners can shift the individual's sexual attitudes (e.g., Kavanagh et al., 2014; Reeve et al., 2017; Surbey & Brice, 2007), and even broader attitudes, such as attitudes towards increasing the minimum wage and access to healthcare (Luberti et al., 2020).

Here, we investigated whether dating popularity (i.e., a reflection of one's temporary mate value in a specific mating market), applied through romantic feedback in an ostensible dating game, would cause a shift in participants' sexual attitudes and broader socio-political attitudes. Unlike most previous experiments that used discrete manipulations of dating popularity (for example, participants were either assigned to a control group or to an experimental group where they received a rejection from ostensible potential romantic partners; e.g., Andrighetto et al., 2019), here we created a continuous manipulation that allowed us to test whether individuals unpopular with potential partners (i.e., those who receive a

higher number of rejections/a lower number of acceptances) express significantly different attitudes than popular individuals (i.e., individuals who receive a lower number of rejections/a higher number of acceptances). In this experiment, heterosexual participants received romantic feedback videos from five opposite-sex peers. Each video consisted of either positive feedback (romantic acceptance) or negative feedback (rejection). This continuous manipulation effectively mimics realistic dating situations (e.g., online dating on apps like Tinder or mingling with strangers in a bar), where individuals interact with several potential partners, and receive either a rejection or a positive response from each person they have interacted with.

After the experimental manipulation, we measured participants' sexual attitudes (i.e., participants' self-reported attitudes to casual sex and traditional gender roles, as well as implicit preference for casual over committed sexual relationships) and broader socio-political attitudes (i.e., participants' self-reported attitudes towards the minimum wage and access to healthcare, and implicit preference for progressive over conservative politics). An improved understanding of how this type of dating popularity affects sexual attitudes would provide valuable knowledge for the study of human mating psychology, by testing directly whether mating-related attitudes are adaptable to the circumstances of a specific mating market. By assessing whether dating popularity can affect broader socio-political attitudes, we would also contribute new knowledge to the study of politics, by showing how romantic feedback can have relevant impacts on current socio-political issues.

Trait Mate Value Covaries with Sexual Attitudes and Broader Socio-Political Attitudes

Cross-culturally, men are, on average, more interested in casual sex than women are (e.g., Baumeister & Vohs, 2004; Baumeister et al., 2001; Buss & Schmitt, 1993; Petersen & Hyde, 2011; Schmitt et al., 2001). Men are more supportive of casual sex than women are, because casual sex is a mating strategy that, on average, is more advantageous—in terms of enhancing reproductive fitness—for men than for women (e.g., Buss & Schmitt, 1993; Schmitt et al., 2001). However, contextual cues, such as an individual's mate value, matter (e.g., Gangestad & Simpson, 2000). The relationship between 'trait' mate value (i.e., the trait that represents the overall stable romantic/sexual value of a person) and sexual attitudes seems to be straightforward for men. Researchers have argued that high mate-value men should be more willing to support casual sex than low mate-value men because high mate-value men attract a higher number of romantic partners, so short-term mating is less costly and more advantageous to them and their reproductive fitness, than it is to low mate-value men (e.g., Gangestad & Simpson, 2000; Landolt et al., 1995).

Empirical findings support the prediction that high mate-value men are more sexually unrestricted than low mate-value men. In a laboratory experiment where men were asked to choose whether to engage in short-term or long-term relationships with potential partners of varying attractiveness and earning potential levels, high mate-value men were more likely to choose short-term mating than low

mate-value men were, especially if the prospective partners were physically attractive (Landolt et al., 1995). High mate-value men are also less likely to engage in cost-inflicting mate retention behaviours than low mate-value men, suggesting that high mate-value men might be less concerned about losing a mate than low mate-value men (Miner et al., 2009). Men's self-esteem is sensitive to their mate value (more than women's self-esteem is), especially with regards to short-term mating, suggesting that self-perceived low mate value might push men to avoid short-term mating (Penke & Denissen, 2008). Taken together, these results suggest that short-term mating might benefit high mate-value men's reproductive fitness but might be too costly for low mate-value men.

The relationship between trait mate value and sexual attitudes is more complex for women. Some researchers suggest that high mate-value women should be choosier than low mate-value women, because high mate-value women, more so than low mate-value women, can afford to be conservative and only mate with high-quality and highly-investing partners, giving them a fitness advantage (e.g., Buss & Schmitt, 1993; Regan, 1998). Contrary to the prediction that high mate-value women should be sexually restricted, however, there is evidence that mate value might have the same effect on women as on men. A series of three experiments provided partial support for the prediction that self-perceived attractiveness would positively correlate with unrestricted socio-sexuality in women: Two of these experiments found a significant effect in the predicted direction, but one did not (Clark, 2004). Another study found that women with low waist-to-hip ratios (i.e., a cue of women's physical attractiveness) were significantly more likely to report a very large number of past sexual partners than women with higher waist-to-hip ratios (Mikach & Bailey, 1999). This evidence constitutes at least partial support for the notion that high mate-value women are more sexually unrestricted than low mate-value women, too. In line with this argument, a recent meta-analysis examining data from over 5,000 research participants found that higher self-perceived mate value is positively correlated with more unrestricted socio-sexuality in both women and men, although the size of the effect is larger for men (Arnocky et al., 2021). These findings suggest that high mate-value women's reproductive fitness, like high mate-value men's fitness, might benefit from engaging in short-term mating, but that short-term mating is too costly for low mate-value women.

Trait mate value might also significantly correlate with egalitarian attitudes. Several studies have shown that physically formidable men (i.e., one cue of men's mate value) are less egalitarian than less formidable men (Petersen & Laustsen, 2019; Petersen et al., 2013; Price et al., 2017). Another study found that (1) attractive men report less egalitarian attitudes than less attractive men (but there was no effect for men's formidability), and (2) attractive women and men, and formidable men, are judged by others to be less egalitarian than less attractive women and men, and less formidable men, respectively (Price et al., 2015). High mate-value individuals might be less egalitarian than low mate-value individuals because an unequal hierarchical society allows high mate-value individuals to monopolize resources and mates, giving them a fitness advantage (e.g., Petersen & Laustsen, 2019). In three experiments Kerry and Murray (2019a), however, found partial and inconsistent support for the notion that formidable men and women are more economically conservative than

their less formidable counterparts. Together, these results suggest that high mate-value men and women might be less egalitarian than lower mate-value individuals, but the evidence is somewhat inconsistent.

Experimental Manipulations of Romantic Acceptance and Rejection

Trait mate value significantly covaries with sexual attitudes, and perhaps even egalitarian attitudes, but can experimental manipulations of dating popularity in the form of romantic acceptance and rejection (i.e., cues of one's current mate value in the mating market) significantly shift sexual and broader socio-political attitudes? In one study, Surbey and Brice (2007) measured heterosexual participants' trait mate value and socio-sexual attitudes in two experimental sessions. In the first session, the participants received no information about their dating popularity, whereas in the second session participants were told that individuals of the opposite sex rated them as excellent dating partners (within-subject experimental design). The authors found that men's, but not women's, trait mate value was positively correlated with their endorsement of casual sex. They also found that the experimental manipulation significantly increased men's, but not women's, mate value, and that after the manipulation men reported: (1) More unrestricted sexual attitudes, (2) higher intention to pursue relationships with attractive rather than average-looking women, and (3) lower intention to pursue committed relationships with average-looking women. This study confirmed arguments that men's mating strategies are more attuned to their trait mate value, as well as changes in their mate value, than women's are (Gangestad & Simpson, 2000; Penke & Denissen, 2008), suggesting that shifting mating strategies based on one's current mate value might benefit men's reproductive fitness, more so than women's fitness.

Other experimental work, however, found significant effects of dating popularity not only on men, but also on women. For example, one study found that, regardless of participant sex, after romantic rejection participants reported more satisfaction with and commitment to their current relationships, whereas other participants who were randomly assigned to receiving romantic acceptance (between-subjects design) reported less satisfaction and commitment (Kavanagh et al., 2014). It follows that both women and men might become more oriented towards commitment and long-term mating after romantic rejection, and less oriented towards them after romantic acceptance. This study then provides some support for the idea that shifting strategies towards short-term mating with an increase in dating popularity, and towards long-term mating with a decrease in dating popularity, might give a fitness advantage to both women and men.

Like for trait mate value, the relationship between experimentally manipulated dating popularity and sexual attitudes might be less straightforward for women than it is for men. Men are significantly more likely to accept casual sex offers than women are (e.g., Baranowski & Hecht, 2015; Clark & Hatfield, 1989; Greitemeyer, 2005; Schützwohl et al., 2009). However, women's likelihood to respond positively to casual sex has been found to depend on the women's own mate value and that of the proposer. That is, women are more open to accept casual sex offers from

attractive men (Conley, 2011; Greitemeyer, 2005; Schützwohl et al., 2009), and low mate-value women have more positive implicit attitudes towards men interested in casual relationships than high mate-value women (Millar et al., 2018). Low mate-value women, and/or women whose potential romantic partners are of high mate value, might then be more likely to endorse casual sex when receiving positive romantic feedback than high mate-value women, and/or women with low mate-value potential partners.

Not every past experiment has found significant effects of dating popularity on participants' sexual attitudes. In one of our recent experiments, we found no effects of online dating popularity on men's and women's sexual attitudes, but we found that, regardless of participant sex, participants who were led to believe they were popular among hundreds of online dating partners had more egalitarian attitudes than participants led to believe they were popular among dozens or thousands (Luberti et al., 2020). These results suggest that dating popularity might affect some socio-political attitudes not directly related to mating, even though it is unclear how a shift in these attitudes in response to dating popularity would advance individuals' mating self-interest. Since higher dating popularity increases an individual's self-perceived mate value, and since there is some evidence that high mate-value individuals are less egalitarian than low mate-value individuals (e.g., Petersen & Laustsen, 2019; Price et al., 2015, 2017), popular individuals might be less egalitarian than unpopular individuals, but this is not the pattern we found in our previous experiment (Luberti et al., 2020).

Based on the experiments we reviewed in this section, we predicted that men led to believe they were popular among potential partners would be more sexually unrestricted than men led to believe they were unpopular. We also predicted that the effects of dating popularity on women might be complicated by other factors, such as the women's own trait mate value or the mate value of their potential partners. Given our previous findings (Luberti et al., 2020), we expected that experimentally primed dating popularity might also affect egalitarian attitudes. We were not sure what the direction of the effect might be, however, since in our previous study participants were told they were successful with a certain percentage of thousands of potential online dating partners, whereas in the current experiment participants received direct romantic video feedback from five opposite-sex peers (i.e., the experimental manipulations were very different).

The Role of Negative Affect

Most psychological research on dating popularity has focused on how romantic rejection might increase hostility towards the opposite sex, and has explored possible mediating effects. In an experiment that simulated romantic rejection in an ostensible dating website, Andrighetto et al. (2019) found that, compared to the control group, romantically rejected men, but not women, reported higher hostility towards the ostensible dating partners, and higher endorsement of rape myths (i.e., beliefs that the victims of rape are to blame for the rape) and dating violence; this effect was mediated by anger. Romantic rejection made men angrier, which in turn made them

more hostile towards women (Andrighetto et al., 2019). Women also report hostility towards the opposite sex upon either imagined or actual romantic rejection, but only if the women are 'rejection-sensitive' (Ayduk et al., 1999).

Taken together, this evidence suggests that anger and hostility are common reactions to romantic rejection. We thus predicted that unpopular participants in our experiment might report higher negative affect (e.g., upset, hostility, irritability) than popular participants, and that negative affect might mediate any effects of dating popularity on socio-political attitudes. Even though we know less about the relationship between dating popularity and positive affect (emotions such as enthusiasm, pride, and excitement), research has shown that negative and positive affect are not necessarily complementary nor correlated with each other (Watson et al., 1988), meaning that changes in negative affect do not necessarily imply corresponding and opposite changes in positive affect. We thus decided to also explore possible mediating effects of positive affect. It might be that a decrease in positive affect, in addition to or instead of an increase in negative affect, for example, mediates the effects of dating popularity on socio-political attitudes.

The Current Research

We aimed to test whether dating popularity among potential romantic partners would influence sexual and other broader socio-political attitudes, extending previous approaches and using an explicit form of romantic feedback that mimicked realistic dating scenarios. We led heterosexual participants to believe they would be sending a self-introduction video to five opposite-sex peers, and that in turn, the five peers would send them back one video each. In these five response videos, each peer told participants that they would either date them or would not want to date them (each response video consisted of either positive or negative feedback). We told participants that the five peers were volunteer research participants, too (although they were actually paid actors/actresses). After the experimental manipulation, we measured participants' self-reported attitudes towards casual sex, traditional gender roles, and the minimum wage and healthcare.

We measured sexual attitudes concerning casual sex and egalitarian attitudes concerning increasing the minimum wage and access to healthcare because the evidence we reviewed showed that dating popularity might affect these attitudes. We also measured attitudes towards traditional gender roles (e.g., men should provide for and take care of women, the 'weaker' sex). Biological market theory suggests that in humans and nonhuman animals, unrelated individuals cooperate by exchanging resources and services in biological markets (Noë et al., 2001). Sexual economics theory (Baumeister & Twenge, 2002; Baumeister & Vohs, 2004), which heavily borrows from biological market theory, posits that sex can be conceptualized as a social exchange within a mating market. That is, those who want to have sex, offer valuable nonsexual resources (i.e., commitment, affection, financial resources, etc.) in exchange for sex (Baumeister & Vohs, 2004). The theory implies that those individuals who support and engage in casual sex should desire a society where sex is relatively cheap (i.e., common), and where

'buyers of sex' (mostly men according to the theory) provide fewer resources or less commitment to 'sellers of sex' (mostly women according to the theory). It follows that, if being popular among potential romantic partners makes individuals more supportive of casual sex, it might also make them more disapproving of traditional gender roles, which is what we also aimed to test with this experiment.

We measured the effects of dating popularity, moreover, not only on these explicit attitudes, but also on implicit sexual and political attitudes. Unlike explicit measures, which consist of intentionally self-reported attitudes, implicit measures assess attitudes that are beyond participants' control—i.e., spontaneous, unintentional, and automatic attitudes (e.g., Greenwald et al., 1998). Although implicit attitudes are generally harder to 'fake' than explicit attitudes (e.g., Banse et al., 2001), they also reflect long-learned biases and beliefs that are usually harder to sway when providing a new piece of information than explicit attitudes, especially if the information is not extreme or convincing (Cone & Ferguson, 2015; Ferguson et al., 2019; Greenwald et al., 1998). The implication is that experimental manipulations might not be as successful at shifting implicit attitudes as they are at shifting explicit attitudes.

Recent research, however, has shown that implicit attitudes are actually less stable over time than explicit attitudes (e.g., Gawronski, 2019; Gawronski et al., 2017), and that implicit attitudes can shift in response to new information and contextual factors (e.g., Cone & Ferguson, 2015; Ferguson et al., 2019; Gawronski, 2019), especially if the information is extreme and highly diagnostic (i.e., revealing) of the reality of a situation, believable, and provides enough explanation for individuals to reinterpret a situation (Cone & Ferguson, 2015; Ferguson et al., 2019). Using two Brief Implicit Association Tests (BIATs; Sriram & Greenwald, 2009), we measured participants' implicit preference for casual over committed sexual relationships, and their implicit preference for progressive over conservative politics. If we were to find significant effects of dating popularity on participants' implicit attitudes, it would mean that dating popularity can affect not only intentionally self-reported attitudes, but also implicit beliefs.

Based on the reviewed theory and evidence, and the above-mentioned considerations, we proposed the following hypotheses:

Hypothesis 1 (H1): Popular men (i.e., those randomly assigned to receive fewer rejections/more acceptances) will report more support for casual sex and less support for traditional gender roles than unpopular men (i.e., men randomly assigned to receive more rejections/fewer acceptances).

Hypothesis 2 (H2): High popularity will decrease negative affect, whereas low popularity will increase it, and this change in negative affect will mediate the effect of dating popularity on each socio-political dimension we measured.

Given some of the inconsistencies in the theories and empirical evidence we reviewed, we took an exploratory approach for the rest of the tests we conducted. First, dating popularity might or might not influence women's attitudes

towards casual sex and traditional gender roles; we make no prediction on which direction the effect should manifest itself if significant. Second, dating popularity should affect both women's and men's attitudes towards the minimum wage and healthcare, but we make no specific prediction on which direction the effect should manifest itself. Third, we decided to explore whether changes in positive affect (other than changes in negative affect) caused by dating popularity could also mediate the potential effects of dating popularity on socio-political attitudes. Fourth, we explored whether dating popularity could also influence implicit attitudes. Finally, given that the effects of dating popularity might depend on trait mate value, especially for women, we explored whether trait self-perceived mate value would moderate any of the effects of dating popularity on the measured socio-political dimensions.

Method

Participants

We recruited participants through the university's SONA paid-participant pool and through advertisements sent to our email lists. Participants were students at UNSW Sydney or members of the neighbouring community. We paid each participant AU$10 for completing the 40-min experiment. During a screening survey, participants had to confirm that they were single (i.e., not in a committed romantic relationship), heterosexual, fluent in English, and between 18 and 25. We collected data from 301 individuals, although the first participant completed a different survey from the rest of the sample (a test survey), and two participants withdrew, leaving a total sample size of 298. We eliminated 27 participants who correctly guessed the dating game was fake (9.06%), and an additional 34 participants who did not pass the manipulation attention check (11.41%). These elimination processes left us with a sample size of 237 (148 women and 89 men, $M_{age} = 21.13$, $SD_{age} = 2.02$).

Experimental Procedure

The study consisted of one 40-min-long experimental session, during which participants completed several survey tasks and ostensibly participated in a dating game. Each participant came in at a different time and completed the study in a private room on the university's main campus (data were collected between 2017 and 2019). Participants completed all tasks for the study on a desktop computer. As soon as each participant arrived, the study's investigator pretended to make a phone call to ostensible colleagues at another Australian university to coordinate the study with them. During the fictitious phone call, the investigator made sure that participants heard that all the other ostensible participants at the other Australian university (the five opposite-sex peers) were ready to start the study, too. If any of the participants arrived late, the investigator also apologized to her colleagues for the delay during the fake call. Before starting the experiment, the investigator informed participants

that they would take part in a dating game where they were going to receive romantic feedback. All participants provided informed written consent to take part in the study.

Throughout the experiment (except for a few tasks), the investigator sat on the opposite end of the table from the participant and the computer. She was not able to see the participant's responses to the survey's questions. Participants first completed a scale that measured their trait self-perceived mate value (from here on simply referred to as 'mate value'). Then, participants were asked to record a short video of themselves (using the desktop computer's webcam). All participants were given a maximum of five minutes to prepare their speech and then record a one- to two-minute-long video. The investigator told participants they needed to describe themselves in the video with the goal of making a good impression and explaining why they would make a good dating partner (see Supplementary Materials for script). The investigator left the room and participants recorded the video in private.

After recording the video, participants were instructed to call the investigator back into the room. The investigator then showed the participants how to upload their video on the survey's webpage, ostensibly to send it to the other Australian university. Participants were told that five opposite-sex peers at the other Australian university were going to watch their video and then send them short video feedback (i.e., approximately 10–30 s video responses to the participants' self-description video). While waiting for the ostensible video feedback from their opposite-sex peers, participants completed demographic questions. Participants also rated the attractiveness of the opposite-sex peers based on photographs of their faces, which the peers ostensibly sent to the participants as another part of the dating game. Both the photographs and the feedback videos were pre-taken/pre-recorded with paid actors/actresses, before we started data collection for this study.

After rating the photographs, participants were instructed to wait for the feedback videos to load on the computer. Participants were shown an ostensible loading survey page where they saw the links to the videos from their peers appear slowly one by one. In the meantime, the investigator pretended to be texting her colleagues at the other university. She told the participants that everything was proceeding well and that the five peers had all separately watched the self-presentation video while participants had been answering demographic and attractiveness rating questions, and that they were now recording their feedback and it should not take too long.

After about 3 min, once all videos had ostensibly loaded on the computer, the investigator left the room again and participants watched the feedback videos by themselves. Immediately after watching the feedback videos, participants were asked to report the number of positive and negative feedback videos they received. We inserted this attention check to ensure that participants had watched the videos, had paid attention, and had interpreted the feedback correctly. The investigator then came back into the room and participants completed several survey tasks in the following order: A first Brief Implicit Association Test (BIAT; Sriram & Greenwald, 2009), self-report questions about their socio-political attitudes, a second BIAT, and finally the Positive Affect Negative Affect Schedule (PANAS; Watson et al., 1988). Which of the two BIATs participants completed first was randomly assigned, as well as the order of the self-report socio-political questions.

After completing all tasks for the study, participants were debriefed using a funnel debriefing procedure (similar to Chartrand & Bargh, 1996), which allowed the investigator to assess whether participants had any suspicion about the dating game before revealing it was fake (see Supplementary Materials for the debriefing script). All participants were informed that the dating game was fictitious before leaving the experimental session. No participant appeared to be distressed upon leaving.

Measures

Dating Popularity Experimental Manipulation

For the dating popularity experimental manipulation, five actors and five actresses recorded one positive (i.e., romantic acceptance) and one negative (i.e., romantic rejection) feedback video each (see Supplementary Materials for feedback videos' transcripts). No videos were ambiguous; each video either consisted of romantic acceptance or rejection. All participants saw one video from each of the five actors/actresses (i.e., a total of five videos). Participants were randomly assigned to receive one of these six feedback combinations: 0 negative/5 positive, 1 negative/4 positive, 2 negative/3 positive, 3 negative/2 positive, 4 negative/1 positive, or 5 negative/0 positive videos. To achieve this experimental design, each participant was first assigned at random to have either a 1/6 or a 5/6 chance (i.e., $p_a = 0.1666$ or $p_b = 0.8333$) of getting the negative feedback form of each video, as an independent Bernoulli trial, from each of the five actors/actresses. Then, for each actor/actress, we drew one of the two video feedback forms (positive or negative) according to the assigned probability (i.e., p_a or p_b).

The probability $f(k, 5, p)$ of drawing exactly k rejections from 5 independent Bernoulli trials where the probability of rejection in a given trial is p, is given by the probability mass function of the Binomial Distribution as follows:

$$f(k,5,p) = \binom{5}{k} p^x (1-p)^{5-x}$$

We adopted this sampling procedure to generate roughly even numbers of participants in five categories: Those who received 0, 1, 4, 5, or either 2 or 3 negative feedback videos. More specifically, using this sampling procedure, we ensured that roughly 20% of participants would receive 0 negative/5 positive feedback videos, 20% 1 negative/4 positive videos, 20% either 2 negative/3 positive or 3 negative/2 positive videos, 20% 4 negative/1 positive videos, and 20% 5 negative/0 positive videos. If we had simply randomly assigned participants to receive either the positive or negative version of the video from each of the five actors/actresses (i.e., if the probability of receiving the negative feedback version of the video was 0.5 from each actor/actress), the number of participants in each feedback category would have been too uneven. On average, for example, the percentage of participants in the 0 negative/5 positive and 5 negative/0 positive categories would have only been about 3% each, compared to about 30% of participants each in the 2 negative/3 positive and 3 negative/2 positive categories. Because

we believed that extreme romantic feedback (many rejections/few acceptances or many acceptances/few rejections) would be more relevant to our research questions than intermediate feedback (about the same number of rejections and acceptances), we used a sampling procedure that would result in a substantial number of participants being randomly assigned to the more extreme categories.

The expected probability distribution of each feedback combination (i.e., the number of negative and positive feedback videos) and the actual number of participants who received a certain feedback video combination are shown in Fig. 1. Interestingly, the number of participants randomly assigned to receive 5 negative (0 positive) feedback videos is smaller than the number expected by theoretic probability among the 237 participants who passed the manipulation attention check and did not report suspicion. We considered the possibility that participants who received five rejections were more inclined to believe the dating game was fake. Our data indicated that participants who received five rejections were not over-represented among the 27 participants who reported suspicion. We conclude that the slightly lower number of participants with five rejections occurred by chance.

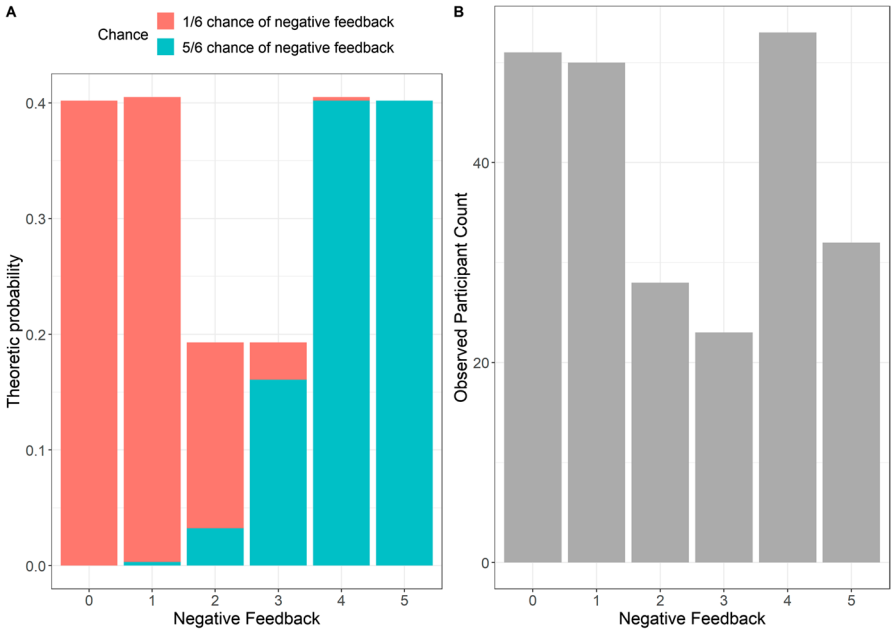

Fig. 1 Panel **A** The theoretic probability distribution for each feedback combination (number of negative and positive feedback videos). The probability is plotted on the *y*-axis, whereas negative feedback on the *x*-axis is the number of negative feedback videos 'v' a participant could have been randomly assigned to (the number of positive feedback videos is not pictured, but it is simply '5 – v'). Panel **B** Actual participant distribution in each experimental feedback combination—here, count on the *y*-axis is the number of participants who received a certain number of negative/positive feedback videos and negative feedback on the *x*-axis is the number of negative feedback videos 'v' a participant was randomly assigned to (the number of positive feedback videos is not pictured, but it is simply '5 – v')

Trait Mate Value

Four items from the Mate Value Scale (MVS; Edlund & Sagarin, 2014) measured participants' mate value, e.g., "Overall, how would you rate your level of desirability as a partner on the following scale?". All answers to the four MVS items were recorded on a Likert scale from 1 to 7; e.g., *1- extremely undesirable* to *7- extremely desirable*. Higher scores on each item represented higher trait self-perceived mate value ($\alpha = 0.86$).

Rating of Opposite-Sex Peers' Attractiveness

As part of the experimental manipulation cover-story, participants were required to rate the attractiveness of the five peers of the opposite sex who sent them video feedback. Participants saw five photographs, with each photograph portraying one of the actors'/actresses' faces (female participants saw the five actors' faces and male participants saw the five actresses' faces). Underneath each photograph, a scale from *1- extremely unattractive* to *7- extremely attractive* measured the participants' rating of each actor's/actress's attractiveness. Overall, male participants rated all actresses as slightly more attractive than the midpoint, with all five actresses' attractiveness mean scores being between 4 and 5 and significantly higher than 4 (the scale midpoint): $M = 4.91$, $SD = 1.08$ for actress 1, $M = 4.81$, $SD = 1.19$ for actress 2, $M = 4.62$, $SD = 1.23$ for actress 3, $M = 4.70$, $SD = 1.11$ for actress 4, and $M = 4.63$, $SD = 1.28$ for actress 5. Instead, female participants rated all actors as slightly less attractive than the midpoint, with all five actors' attractiveness mean scores being between 3 and 4, and all but one (actor 1) being significantly lower than 4: $M = 3.87$, $SD = 1.43$ for actor 1, $M = 3.32$, $SD = 1.39$ for actor 2, $M = 3.51$, $SD = 1.38$ for actor 3, $M = 3.39$, $SD = 1.43$ for actor 4, and $M = 3.45$, $SD = 1.45$ for actor 5.

Demographics

Participants were asked to report their biological sex (female or male), gender (open-ended), sexual orientation, age, ethnicity, annual income, combined parental annual income, and occupation. Biological sex was the only variable we included in our main models for the data analysis. We included the other questions in the survey to ensure participants were occupied for long enough that it would seem believable the opposite-sex peers had watched the participants' self-description video and recorded and sent back video feedback. We only used the screening survey as our selection criterion to include or exclude research participants.

Explicit Measures of Socio-Political Attitudes

Nine self-report items measured participants' explicit attitudes towards several socio-political dimensions. We wanted to keep this explicit questionnaire as short as possible to ensure participants would still be thinking about their dating popularity whilst completing all the survey tasks after the feedback. Our goal was to make sure that participants would complete all post-feedback tasks within approximately

10 min of receiving the feedback. Six of the items derived from scales used in previously published research, whereas we came up with the other three to measure participants' explicit attitudes towards certain dating customs.

Two items measured participants' attitudes to casual sex: "It is fine for a woman to have sex with a man she has just met, if they both want to" (Price et al., 2014); "If you were to start a relationship, how long would you ideally want to wait to have sex?" (item created by the authors). Five items measured attitudes to traditional gender roles, "Men should be ready to accept the financial responsibility for a date" (Murnen & Byrne, 1991); "Men should cherish and protect women" (Glick & Fiske, 1996); "Men should sacrifice to provide for women" (Glick & Fiske, 1996); "If you could go on a date tonight, where would you like to go?" (item created by the authors; participants had to choose from a list of increasingly expensive restaurants); "If you could go on a date tonight, who do you think should pay?" (item created by the authors). Finally, two items adapted from Terrizzi et al. (2010) measured attitudes to increasing the minimum wage and access to healthcare: "The minimum wage should be raised" and "The government should adopt a policy to guarantee health care to all workers and their families".

Answers to all pre-existing items were recorded on a 7-point Likert scale from *1- strongly disagree* to *7- strongly agree*. Answers to the questions we came up with were measured on scales of differing length, but, for all questions, the higher the scores, the lower the support for casual sex and the higher the support for traditional gender roles and for "expensive" dating.

Implicit Measures of Socio-Political Attitudes

Participants completed two Brief Implicit Association Tests (BIAT; Sriram & Greenwald, 2009). We used two BIATs, instead of normal IATs, to ensure that participants would be able to complete these tasks in a timely manner. As mentioned in the previous section, we wanted to make sure that participants would complete all post-feedback tasks within about 10 min of receiving the feedback. We used Inquisit version 5 (Inquisit5, 2016) to run both BIATs on the desktop computer in the study room. We used Inquisit v5 script templates to code both BIATs, as the Inquisit scripts strictly follow the BIAT procedures outlined by Sriram and Greenwald (2009), and the resulting Inquisit data output files use the improved scoring algorithm described by Greenwald et al. (2003) to calculate the BIATs' *D-score* (more information on the BIATs' procedures can be found in the Supplementary Materials).

One BIAT measured participants' implicit preference for casual over committed relationships. The attribute categories and words were: 'GOOD- Wonderful, Best, Superb, Excellent, Good' and 'BAD- Terrible, Awful, Worst, Horrible, Bad'. The target categories and words were: 'CASUAL DATING- Casual sex, One-night stand, Promiscuity, Hook up, Friends with benefits' and 'COMMITTED RELATIONSHIPS- Family, Love, Marriage, Monogamy, Romantic commitment'. The other BIAT measured participants' implicit preference for progressive over conservative politics. The 'GOOD' and 'BAD' attribute words were identical to those of the first BIAT. However, for this BIAT the target categories and words were:

'PROGRESSIVE- Equality, Sharing, Free education, Universal healthcare, Pro-immigration' and 'CONSERVATIVE- Tradition, Private ownership, Private schools, Anti-immigration, Pro-military spending'. We ran a pilot study to select political words for this BIAT, see Supplementary Materials.

Affect

We used the Positive Affect Negative Affect Schedule (PANAS; Watson et al., 1988) to measure participants' positive and negative affect after participating in the ostensible dating game. Participants were asked to report to what extent they felt certain emotions on the following scale: *1- Very slightly or not at all*, *2- A little*, *3- Moderately*, *4- Quite a bit*, *5- Extremely*. Ten words measured positive affect (e.g., Proud, Excited, Determined) and ten words measured negative affect (e.g., Upset, Hostile, Irritable). For Positive Affect $\alpha = 0.91$, and for Negative Affect $\alpha = 0.86$.

We provide a complete list of all study's questions in the Supplementary Materials.

Data Analysis

To ensure manuscript clarity and brevity, here we summarized our data analysis steps in Table 1. A complete and detailed description of all the data analysis steps we performed for this experiment is available in the Supplementary Materials. We performed all steps of the data analysis in the R programming software version 3.6.3. Data and code for this analysis are available at: https://osf.io/hgeqc/?view_only=058b1889350b4d8ab62740fc4645bcc2.

Results

PCA

We found that three components captured the socio-political dimensions in the nine explicit DVs ($\chi^2 = 157.48$, $p < 0.001$). Table 2 shows the loadings of each of the nine DVs on each Principal Component (PC). Only loadings $>|0.40|$ are presented in this table, as a cut-off value of $|0.40|$ is commonly used for PCAs (Field, 2009; Matsunaga, 2010; Stevens, 2012). All DVs but one loaded on only one component with a loading $>|0.40|$. The exception was the 7th DV ("If you could go on a date tonight, where would you like to go?"), which loaded weakly on two separate components with a loading just above $|0.40|$ for both components. Based on the DVs that strongly loaded on each component, PC1 represents attitudes towards traditional gender roles, PC2 attitudes towards casual sex, and PC3 attitudes towards increasing the minimum wage and access to healthcare.

We calculated correlations between PC1 scores (traditional gender roles) and BIAT1 scores (implicit preference for casual over committed relationships), as well as PC2 scores (casual sex) and BIAT1 scores, to test whether explicit and implicit

Table 1 A summary of the performed data analysis steps. Details on each data analysis step can be found in the Supplementary Materials

Step 1. Preparing the variables of interest for data analysis
• We calculated Cronbach's αs for the Mate Value Scale (MVS), and the Positive Affect (PA) and Negative Affect (NA) scales • We averaged participants' scores across scale items for each of these three scales and then *z*-score standardised them • We re-coded participants' sex as 0 (Women) and 1 (Men), and dummy coded the 8th explicit Dependent Variable (i.e., DV8, "If you could go on a date tonight, who do you think should pay?") as -1 (Woman), 0 (Split the bill equally), and 1 (Man)
Step 2. Running a Principal Component Analysis on the nine explicit socio-political items
• First, we performed a parallel analysis on the items to determine the numbers of components to be specified in the PCA, which suggested we should specify three components • We then ran a PCA specifying three components, with Oblimin rotation • We used the components' scores from this PCA as the outcome variables representing the explicit measures in subsequent analyses
Step 3. Calculating *D-scores* for the two BIATs
• The Inquisit program automatically calculated *D-scores* for our BIATs using the improved scoring algorithm outlined by Greenwald et al. (2003) ◦ In our BIATs, the higher the *D-scores*, the higher the implicit preference for casual rather than committed relationships, and for progressive rather than conservative politics • We used the *D-scores* as the outcome variables representing the implicit measures • Following instructions from Greenwald et al. (2003), in analyses using the BIATs *D-scores* as outcomes, we discarded participants who had more than 10% of their response times < 300 ms
Step 4. General linear models testing our hypotheses and exploratory predictions
• We used the number of negative feedback videos each participant saw (an integer number between 0 and 5) as the continuous independent variable representing our dating popularity experimental manipulation in these models and subsequent analyses (if we had used the number of positive feedback videos, results would have been unchanged, but they would have had an opposite sign) • We ran 3 identical general linear models for the five outcome variables (the scores of the three Principal Components from the PCA and the *D-scores* from the two BIATs): ◦ Model 1 predictors: sex + negative feedback + sex * negative feedback ◦ Model 2 predictors: sex + negative feedback + sex * negative feedback + trait mate value ◦ Model 3 predictors: sex + negative feedback + sex * negative feedback + trait mate value + sex * trait mate value + negative feedback * trait mate value + sex * negative feedback * trait mate value • In cases where we found there were significant main or interaction effects for an outcome, we calculated estimated marginal means, as well as pairwise contrasts and simple slopes, to correctly interpret the magnitude and direction of the significant main and interaction effects
Step 5. Mediation analyses
• We ran a mediation analysis with PA and NA on each outcome variable for women and men separately • We used 10,000 bootstrap re-samplings. We specified the number of negative feedback videos as the main predictor variable, PA and NA as the mediating variables, whilst controlling for trait mate value

attitudes towards relationships were significantly related to each other. We found that BIAT1 scores were not significantly correlated with PC1 scores (r=-0.01, df=228, p=0.828), but they were significantly positively correlated with PC2 scores (r=0.20, df=228, p=0.002), meaning that participants who were more explicitly approving of casual sex were also more implicitly approving of it. We also calculated the correlation between PC3 scores (minimum wage and healthcare) and BIAT2 scores (implicit preference for progressive over conservative politics), and it was not significant (r=0.06, df=231, p=0.399). Overall, correlations between

Table 1 (continued)

Step 6. Running secondary sets of analysis to ascertain that any significant effects of dating popularity on socio-political attitudes were robust
• First, we re-ran all analyses with 'weighted feedback' as the main predictor representing dating popularity, rather than number of negative feedback videos. We *z*-score standardized weighted feedback ◦ The highest weighted feedback values meant that participants received many acceptances from opposite-sex peers they had rated as very attractive, whereas the lowest scores meant participants received many rejections from opposite-sex peers they had rated as very attractive • Second, we also re-ran all analyses excluding DV7. That is, we ran the PCA on all explicit DVs except DV7 and used the component scores from this new PCA as the outcome variables for the models ◦ We excluded DV7 because this item only weakly loaded on both the 'traditional gender roles' and the 'casual sex' components of the PCA • Third, we re-ran all analyses again, both using weighted feedback as the dating popularity predictor variable and excluding DV7 from the analyses

implicit and explicit attitudes were small or nonsignificant, suggesting that the implicit BIATs were measuring somewhat different constructs than explicit items.

Main Models

Table 3 shows the results for Model 2 for each outcome. We report results for Models 1 and 3 in the Supplementary Materials (SM) to ensure brevity. In the following subsections, we focus on the significant effects from these three models for each outcome separately. We also report the results of pairwise contrasts and simple slope tests in cases when there were significant main or interaction effects (complete outputs of estimated marginal means, pairwise contrasts, and simple slopes can also be found in the SM).

PC1: Traditional Gender Roles

Participant sex was the only statistically significant predictor in Models 1 and 2 (see Output SM1 in the SM for Model 1 and Table 3 for Model 2). Pairwise contrasts from Model 2 suggested that, on average, the men in our sample endorsed traditional gender roles more than women did regardless of the number of negative/positive feedback videos they received; see Output SM2. In Model 3, the 3-way participant sex*negative feedback*mate value interaction was not significant (Output SM3).

PC2: Casual sex

In Model 1, sex and the sex*negative feedback interaction were statistically significant (Output SM4). In Model 2, sex and sex*negative feedback were still significant, and participant mate value was also significant (Table 3). Based on the parameter estimate from Model 2 for mate value, high mate-value participants were, on average, more supportive of casual sex than lower mate-value participants were.

To interpret the significant 2-way interaction between participant sex and number of negative feedback videos, we looked at pairwise contrasts for participant sex at

Table 2 The loadings of each DV on each component of the PCA ($N = 237$). Only loadings larger in absolute value than |0.40| are presented in this table

DV #	DV Text	PC1 Traditional gender roles	PC2 Casual sex	PC3 Minimum wage and healthcare
1	It is fine for a woman to have sex with a man she has just met, if they both want to		0.81	
2	Men should cherish and protect women	0.62		
3	Men should sacrifice to provide for women	0.75		
4	Men should be ready to accept the financial responsibility for a date	0.86		
5	The minimum wage should be raised			0.82
6	The government should adopt a policy to guarantee health care to all workers and their families			0.87
7	If you could go on a date tonight, where would you like to go?	0.46	0.45	
8	If you could go on a date tonight, who do you think should pay?	0.71		
9	If you were to start a relationship, how long would you ideally want to wait to have sex?		-0.88	

Total variance explained = 64%; PC1: variance explained = 27%, eigenvalue = 2.43; PC2: variance explained = 21%, eigenvalue = 1.86; PC3: variance explained = 17%, eigenvalue = 1.51

Table 3 Results for Model 2 for each outcome variable (*F*-tests of the model terms and *t*-tests of the parameter estimates)

PC1: Traditional Gender Roles						
	F	*p*	estimate	SE	*t*	***p***
Negative feedback	0.00	0.977	0.04	0.04	0.81	0.421
Sex	30.50	< 0.001***	0.79	0.20	3.89	< 0.001***
Mate value	1.14	0.287	0.06	0.06	1.03	0.304
Sex*Negative feedback	0.37	0.542	-0.04	0.07	-0.61	0.542
PC2: Casual Sex						
	F	*p*	estimate	SE	*t*	***p***
Negative feedback	0.98	0.323	0.04	0.04	0.94	0.350
Sex	5.82	0.017*	0.64	0.21	3.10	0.002**
Mate value	13.04	< 0.001***	0.22	0.06	3.48	< 0.001***
Sex*Negative feedback	4.71	0.031*	-0.16	0.07	-2.17	0.031*
PC3: Minimum Wage and Healthcare						
	F	*p*	estimate	SE	*t*	***p***
Negative feedback	1.43	0.233	-0.08	0.05	-1.78	0.077
Sex	1.64	0.202	-0.39	0.22	-1.81	0.072
Mate value	0.27	0.607	0.04	0.07	0.59	0.556
Sex*Negative feedback	1.61	0.206	0.10	0.08	1.27	0.206
BIAT1: Implicit preference for casual over committed relationships						
	F	*p*	estimate	SE	*t*	***p***
Negative feedback	0.59	0.443	-0.01	0.02	-0.69	0.491
Sex	4.70	0.031*	0.09	0.08	1.03	0.304
Mate value	0.16	0.688	0.01	0.03	0.43	0.671
Sex*Negative feedback	0.17	0.681	0.01	0.03	0.41	0.681
BIAT2: Implicit preference for progressive over conservative politics						
	F	*p*	estimate	SE	*t*	***p***
Negative feedback	0.44	0.508	-0.03	0.02	-1.44	0.151
Sex	2.83	0.094	-0.15	0.08	-1.86	0.064
Mate value	5.49	0.020*	-0.06	0.03	-2.27	0.024*
Sex*Negative feedback	1.22	0.270	0.03	0.03	1.11	0.271

Numerator *degrees of freedom* for all model terms in all models are 1. Denominator *degrees of freedom* for models where PC1, PC2, and PC3 are the outcome variables are 232; for the model where BIAT1 is the outcome variable 225; and for the model where BIAT2 is the outcome variable 228. $*p < 0.05$; $**p < 0.01$; $***p < 0.001$

each value of negative feedback (i.e., 0 to 5), and the simple slopes for negative feedback for women and men separately (Output SM5). The pairwise contrasts showed that men reported significantly more support for casual sex than women did when men and women received 0–2 negative feedback videos out of 5, but the sex difference was not significant when men and women received 3–5 negative feedback videos out of 5. The slopes of the effect of negative feedback on PC2 were significantly different for women and men. For women, the slope was not significantly different

from 0, whereas for men the slope was significantly different from 0 and negative. These results suggested that there was no main effect on women. Instead, men led to believe they were unpopular with opposite-sex peers reported significantly less support for casual sex than men led to believe they were popular. See Fig. 2.

In Model 3, the 3-way participant sex*negative feedback*mate value interaction was significant (Output SM6). Pairwise contrasts for the sex difference at each value of negative feedback and at low mate value (1 SD below the mate value mean), average mate value (at the mate value mean), and high mate value (1 SD above the mate value mean), showed that: (1) for women and men with low and average mate value, men were significantly more supportive of casual sex than women were when women and men received 0–2 rejections out of 5, but there was no sex difference when women and men received 3–5 rejections out of 5; (2) for women and men with high mate value, there was no sex difference in the support for casual sex at any value of negative feedback.

The slope of negative feedback for low mate-value women was significantly different from 0 and positive, whereas that for low mate-value men was significantly different from 0 and negative. These results meant that low mate-value women's support for casual sex increased with more rejections (fewer acceptances), whereas low mate-value men's support for casual sex decreased with more rejections (fewer acceptances). For average mate-value men, the slope was also significantly different

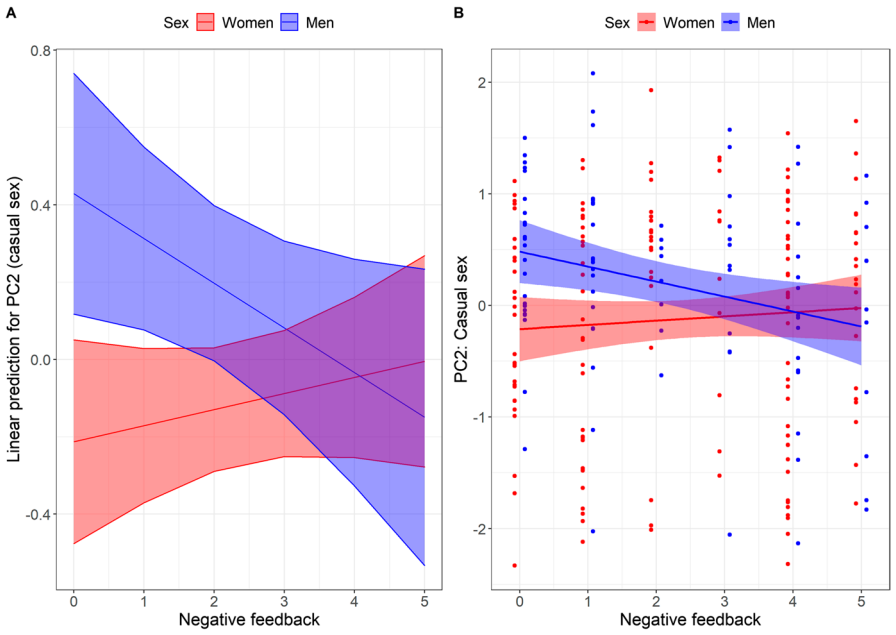

Fig. 2 The effect of dating popularity (number of negative feedback videos; *x*-axis) on PC2 (casual sex; *y*-axis) by participant sex (colours). Men who received more rejections (fewer acceptances) reported less support for casual sex than men who received fewer rejections (more acceptances), whereas women were not significantly affected by dating popularity. Panel **A** Linear prediction for each sex for PC2 from Model 2. Panel **B** Graph of the interaction using the raw data

from 0 and negative, meaning that average mate-value men's support for casual sex also decreased with more rejections (fewer acceptances). The slope was not significantly different from 0 for high mate-value men and average and high mate-value women, meaning that dating popularity did not affect these groups. The slopes that were significantly different from each other were those of men and women with low mate value, and those of women with low mate value and men with average mate value (Output SM7 and Fig. SM1).

PC3: Minimum Wage and Healthcare

In Models 1 and 2 (Output SM8 and Table 3, respectively), none of the independent variables significantly predicted participants' attitudes towards the minimum wage and healthcare. In Model 3 (Output SM9), the 3-way interaction of negative feedback by participant sex and participant mate value was also not significant.

BIAT1: Implicit Preference for Casual Over Committed Relationships

In Model 1 (Output SM10) and Model 2 (Table 3), participant sex was the only predictor which significantly improved the models (i.e., the only predictor with a significant *F*-statistic). However, the parameter estimate for sex from the models was not significant (meaning that for the reference value of negative feedback—0 rejections—the sex difference was not significant). Pairwise contrasts for the sex difference from Model 2 (Output SM11) showed that men were significantly more implicitly supportive of casual over committed relationships than women were only when women and men received 2 or 3 rejections out of 5. In Model 3 (Output SM12), the 3-way interaction was not significant.

BIAT2: Implicit Preference for Progressive Over Conservative Politics

No model terms were significant in Model 1 (Output SM13). In Model 2, participant mate value was the only significant predictor (Table 3). On average, the higher the participants' mate value, the lower their implicit preference for progressive over conservative values. In Model 3 (Output SM14), the 3-way interaction was not significant.

Mediation Analyses

We were interested in understanding whether positive and/or negative affect would mediate the effects of dating popularity on socio-political attitudes. We thus ran mediations for each outcome on women and men separately. Some researchers consider mediations 'significant' only when the total effect of the predictor on the outcome is significant, and its direct effect after controlling for the indirect mediation pathway is close or equal to 0. However, others (e.g., Hayes, 2009; Zhao et al., 2010) have argued that mediations should be considered significant simply when the indirect mediation pathway's confidence interval (CI) does not cross 0. That is, mediations are significant when the indirect pathway is

significant, even when the total effect of the predictor on the outcome is not significant and/or its direct effect is not equal to 0 (Hayes, 2009; Zhao et al., 2010). We used the latter criterion to determine which of our mediation models were significant.

The only two significant mediation models were those for men when attitudes towards casual sex and attitudes towards the minimum wage and healthcare were specified as the outcome variables (Table 4 and Fig. 3). In the mediation model for PC2 (casual sex) for men, the indirect mediation pathway 'ab' through positive affect was significant (its CI did not cross 0), whereas the one through negative affect was not (Table 4). The estimate of the effect of negative feedback on positive affect (pathway 'a') was significant and negative, and the estimate of the effect of positive affect on PC2 (pathway 'b') was significant and positive. These results meant that unpopular men reported lower positive affect than popular men. In turn, men with lower positive affect reported less support for casual sex than men with higher positive affect.

Similarly, although there was no total significant effect of dating popularity on PC3 (minimum wage and healthcare), the indirect mediation pathway 'ab' through positive and negative affect from the mediation model for PC3 for men was overall significant (its CI did not cross 0). Looking at the mediation pathways through positive and negative affect separately, the indirect mediation pathway 'ab' through positive affect was significant (its CI did not cross 0), but the one through negative affect was not (Table 4). The estimate of the effect of negative feedback on positive affect (pathway 'a') was significant and negative, and that of positive affect on PC3 (pathway 'b') was significant and positive. Unpopular men reported lower positive affect than popular men, and in turn men with lower positive affect reported less support for increasing the minimum wage and access to healthcare than men with higher positive affect. The fact that there was no total significant effect of dating popularity (i.e., negative feedback) on PC3, but the mediation pathway was significant, simply means that dating popularity affects men's attitudes to the minimum wage and healthcare only through changes in positive affect, but there are no main effects of dating popularity alone.

None of the other mediation models were significant. We report all the outputs of the nonsignificant mediation models in the SM, see Outputs SM15-22.

Secondary Analyses

As mentioned in Table 1, we-ran all analyses three additional times: (1) using weighted feedback instead of the number of negative feedback videos as the predictor variable representing dating popularity; (2) using component scores from a PCA that excluded DV7; and (3) using weighted feedback as the dating popularity predictor variable and excluding DV7. Results from these three secondary analyses were largely identical to those from the main analyses reported here. See the outputs of these analyses in the SM. The code for the secondary analyses is also available at https://osf.io/hgeqc/?view_only=058b1889350b4d8ab62740fc4645bcc2.

Table 4 Parameter estimates for the significant mediation models showing that for men the relationship between dating popularity and PC2 and PC3 respectively was mediated by positive affect, but not negative affect (mediation models were run separately for women and men)

Mediation model for men for PC2 (casual sex)					
Effect	estimate	SE	*t*	df	*p*
Negative feedback → PC2 (total effect; c pathway)	-0.12	0.05	-2.32	86	0.022*
Negative feedback → PC2 (direct effect; c' pathway)	-0.07	0.06	-1.17	84	0.246
Negative feedback → positive affect (a pathway)	-0.22	0.05	-4.68	86	< 0.001***
Negative feedback → negative affect (a pathway)	0.09	0.06	1.53	86	0.129
Positive affect → PC2 (b pathway)	0.27	0.11	2.42	85	0.018*
Negative affect → PC2 (b pathway)	0.09	0.09	1.01	85	0.313
Effect	estimate	SD	Lower CI		Upper CI
ab total effect estimates	-0.05	0.03	-0.12		0.01
ab effect estimates for positive affect	-0.06	0.03	-0.13		-0.01
ab effect estimates for negative affect	0.01	0.01	-0.01		0.03
Mediation model for men for PC3 (minimum wage and healthcare)					
Effect	estimate	SE	*t*	df	*p*
Negative feedback → PC3 (total effect; c pathway)	0.01	0.06	0.19	86	0.852
Negative feedback → PC3 (direct effect; c' pathway)	0.13	0.07	1.98	84	0.051
Negative feedback → positive affect (a pathway)	-0.22	0.05	-4.68	86	< 0.001***
Negative feedback → negative affect (a pathway)	0.09	0.06	1.53	86	0.129
Positive affect → PC3 (b pathway)	0.58	0.13	4.28	85	< 0.001***
Negative affect → PC3 (b pathway)	0.07	0.10	0.67	85	0.504
Effect	estimate	SD	Lower CI		Upper CI
ab total effect estimates	-0.12	0.05	-0.22		-0.03
ab effect estimates for positive affect	-0.13	0.04	-0.22		-0.05
ab effect estimates for negative affect	0.01	0.01	-0.01		0.04

For men for PC2: $R = 0.36$, $R^2 = 0.13$, $F = 4.25$ on 3 and 84 *DF*, $p = 0.008$**; for men for PC3: $R = 0.44$, $R^2 = 0.19$, $F = 6.67$ on 3 and 84 *DF*, $p < 0.001$***

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Discussion

After manipulating participants' popularity among opposite-sex peers in an ostensible dating game, unpopular men (i.e., those who received more rejections/fewer acceptances) reported, overall, less support for casual sex than popular men (i.e., those who received fewer rejections/more acceptances), but there was no effect of dating popularity on men's attitudes towards traditional gender roles (H1 was only

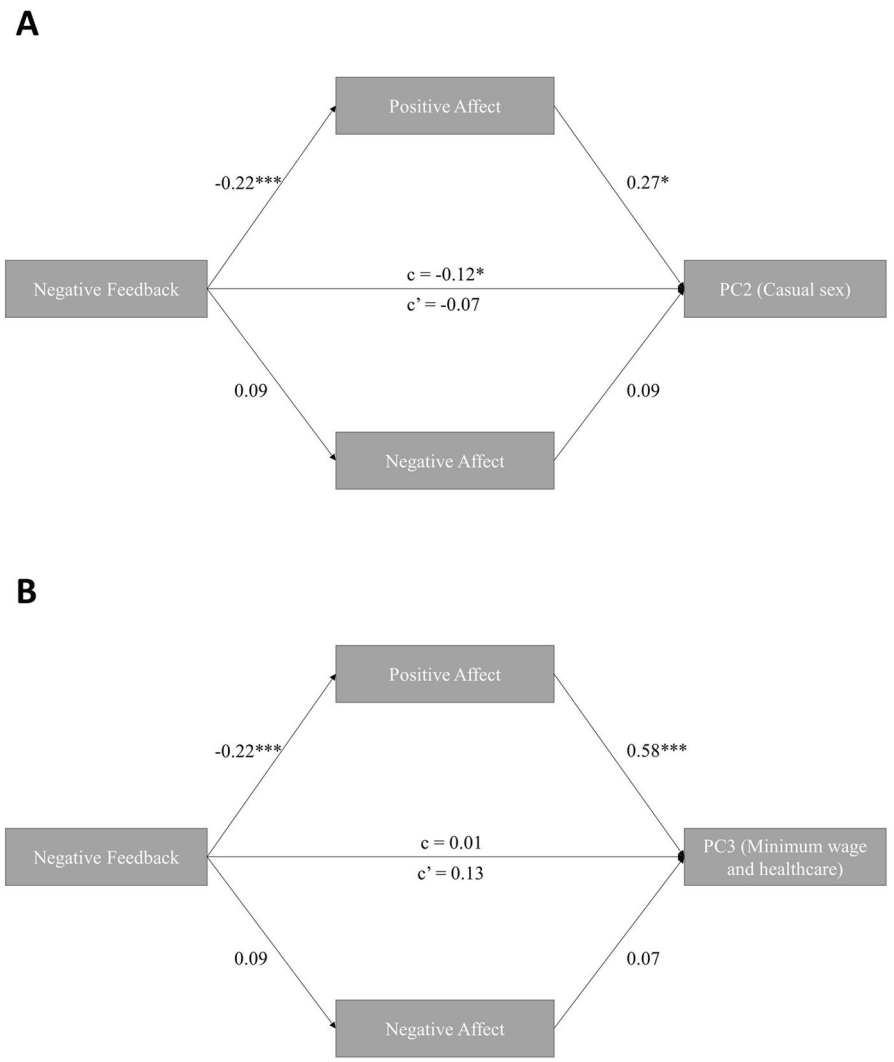

Fig. 3 Panel **A** Visualization of the mediation effect for men for PC2 (casual sex). Panel **B** Visualization of the mediation effect for men for PC3 (minimum wage and healthcare). $*p < 0.05$; $**p < 0.01$; $***p < 0.001$

partially supported). Exploratory analyses with mate value revealed that low mate-value women's and low and average mate-value men's attitudes towards casual sex were affected by dating popularity, but dating popularity did not influence high mate-value individuals' attitudes. Contrary to our hypothesis (H2), negative affect did not mediate the effects of dating popularity on socio-political attitudes. Unpopular men, instead, reported lower positive affect than popular men, and men with lower positive affect in turn reported less support for casual sex and for increasing the minimum wage and access to healthcare than men with higher positive affect.

There were no other significant effects of dating popularity on either explicit or implicit attitudes.

The Effects of Dating Popularity on Attitudes to Casual Sex

Previous evidence showed that dating popularity (i.e., a reflection of one's mate value in a specific mating market) influences men's, but not women's, support for casual sex (e.g., Gangestad & Simpson, 2000; Landolt et al., 1995; Surbey & Brice, 2007), and that men are more attuned to changes in their mate value than women are (e.g., Gangestad & Simpson, 2000; Penke & Denissen, 2008). In line with these previous findings, there was no main effect of dating popularity on women, but unpopular men were less accepting of female promiscuity and willing to wait longer for sex than popular men were, suggesting that being unable to attract romantic partners makes men more against other people having casual sex and more unwilling to have casual sex themselves. Based on the logic of fitness costs and benefits, our results suggest that short-term mating is costlier for unpopular men than it is for popular men, and that disapproving of casual sex therefore advances the mating interests of unpopular men more so than those of popular men. Our findings also support arguments that decreases in self-perceived mate value turn men away from casual sex (Penke & Denissen, 2008), and that socio-political attitudes can reflect mating self-interest (e.g., Kurzban et al., 2010; Pinsof & Haselton, 2016; Weeden et al., 2008). These results, instead, suggest that dating popularity might not be as impactful for women's mating interests and reproductive fitness as it is for men's.

These findings have important implications for the study of human mating. We provided experimental evidence that can help mating researchers answer questions such as whether and how a universal mating psychology can adjust to the demands encountered by a specific person in a specific mating market. Here, we showed that, at least in men, attitudes to casual sex respond to dating popularity in an experimental mating market, suggesting that mating-related attitudes can shift to benefit an individual's fitness in certain specific mating market conditions. In men, these shifts might largely occur through changes in positive emotions (we will discuss the significant mediation effects through positive affect in more detail in the next section).

We pointed out that cross-culturally men are, on average, more sexually unrestricted than women are (e.g., Baumeister & Vohs, 2004; Baumeister et al., 2001; Buss & Schmitt, 1993; Petersen & Hyde, 2011; Schmitt et al., 2001). The men in our sample were significantly more supportive of casual sex than women were only when they were popular with opposite-sex peers. There was no significant sex difference in the support for casual sex when men had received many rejections/few acceptances. This pattern in the results suggests that receiving many rejections might make men more against casual sex than they normally would be (rather than the alternative/complementary possibility: i.e., receiving more acceptances might make men more open to casual sex).

In terms of practical implications, these results can shed light on current societal issues. In recent years, the rise of phenomena such as the 'Incel' movement seems to have become more common. The Incels are part of an online community where men

express their hostile attitudes towards women and their opposition to liberal sexual attitudes and gender equality. Incel online social media activity is particularly prevalent in areas with high income inequality or where men are abundant and women scarce, i.e., areas where low mate-value men have little to no mating opportunities (Brooks et al., 2022). The incels, in fact, attribute their attitudes to their involuntary celibate status—e.g., they are hostile towards women and are against gender equality because they are unpopular with potential romantic partners. The results from this large experiment with young heterosexual participants show that there might be some truth to the incels' statement that men become more sexually conservative when they are romantically rejected.

These arguments are only speculative though, since through our data we could only prove that unpopular men were less supportive of casual sex than popular men. A limitation of our experimental design was that we did not include a control group, meaning that we cannot say whether the effects of dating popularity on attitudes to casual sex were due to receiving more/fewer rejections, receiving more/fewer acceptances, or both. We proved that dating popularity can shift men's attitudes to casual sex, but whether it is rejections, acceptances, or both that affect men's attitudes to casual sex should be explored in additional research studies.

Through exploratory analyses, moreover, we showed that it was only low and average mate-value men (not high mate-value men) who were more opposed to casual sex when they were unpopular vs. popular with women. We thus provided novel evidence that it is particularly lower mate-value men, not high mate-value men, who are attuned to changes in their mate value, adjusting their sexual attitudes accordingly. These results suggest that switching sexual attitudes/mating strategies in response to current dating popularity might only benefit lower mate-value men's reproductive success; high mate-value men might instead be better off always supporting more unrestricted sexual attitudes despite apparent changes in their current dating popularity.

It was only low mate-value women (not average or high mate-value women) who were affected by dating popularity in their attitudes to casual sex, in the opposite direction of men. That is, unpopular low mate-value women were *more* supportive of casual sex than popular low mate-value women. The fact that low mate-value women were, on average, more against casual sex than high mate-value women, and were even more against it when they were popular with many men, supports the notion that low mate-value women are more sexually restricted than high mate-value women (e.g., Arnocky et al., 2021; Clark, 2004; Mikach & Bailey, 1999) and contradicts the opposite idea that low mate-value women should be more open to casual sex than high mate-value women (e.g., Baumeister & Vohs, 2004; Buss & Schmitt, 1993; Millar et al., 2018). Similarly to men, these findings suggest that shifting sexual attitudes in response to changes in dating popularity might only benefit low mate-value women's fitness, but not higher mate-value women's fitness. Unlike men, being popular with the opposite sex reinforced low mate-value women's sexual attitudes (i.e., disapproval of casual sex), rather than making them more open to casual sex, suggesting that sexual restrictedness might advance the mating interests of low mate-value women even when they have many mating opportunities.

We also explored the possibility that the attractiveness of the actors and actresses we chose for this experiment might have influenced the effects of dating popularity on participants' socio-political attitudes. In the Introduction, we mentioned that although men are, on average, more likely to accept a casual sex offer than women are (e.g., Clark & Hatfield, 1989), this sex difference can decrease in certain circumstances (e.g., Baranowski & Hecht, 2015; Conley, 2011; Schützwohl et al., 2009). Women, for example, become more likely to accept a casual sex offer from an exceptionally attractive man (Schützwohl et al., 2009). It follows that, if we considered the attractiveness ratings of the actors by the female participants, we might find some significant effects of dating popularity on women's sexual attitudes. We also decided to consider male participants' ratings of the actresses' attractiveness. In a secondary set of analyses, we used the feedback weighted based on the attractiveness ratings of the actors/actresses as the main predictor variable representing dating popularity (rather than the number of negative feedback videos received by the participants). Results were identical to what we had previously found, suggesting that women's attitudes might largely not be swayed by dating popularity even when considering their perceptions of the attractiveness of their potential romantic partners.

We do note, however, that women had, on average, rated all actors as not very attractive (all actors' attractiveness ratings were slightly below the scale midpoint). We do not know if women's attitudes towards casual sex (and even broader attitudes) might have been influenced by dating popularity if their potential romantic partners were all exceptionally attractive, a possibility that should be further explored in future research. Women, moreover, value both physical attractiveness, especially in short-term mates (e.g., Li & Kenrick, 2006), and high status in men (e.g., Buss, 1989; Li et al., 2002). In this experiment, we did not manipulate the actors' apparent social status. If we had done that, we might have seen shifts in the women's socio-political attitudes dependent upon the confederates' ostensible status. Future studies could thus also consider status.

The fact that there were no significant main effects of dating popularity (nor any significant mediations through negative or positive affect, discussed in the next section) on attitudes towards traditional gender roles suggests that these attitudes might be less susceptible to changes in dating popularity/mate value than attitudes towards casual sex. Similarly, there were no significant main or mediation effects of dating popularity on implicit sexual and political attitudes. While implicit attitudes might be harder to sway than explicit attitudes, recent evidence has shown that implicit attitudes can shift in response to new information, especially if the information is extreme, believable, and impactful (Cone & Ferguson, 2015; Ferguson et al., 2019). The participants we retained for data analysis did not suspect the romantic feedback they received and receiving romantic feedback from five opposite-sex peers should feel extreme and impactful. The fact that we did not find any significant effects of dating popularity on implicit attitudes might then mean that dating popularity only influences intentional self-reported attitudes, but not implicit beliefs. We do also note, however, that we found low or nonsignificant correlations between explicit sexual and implicit sexual attitudes, and a nonsignificant correlation between explicit political and implicit political attitudes, suggesting that another reason we did not find any significant effects of dating popularity on implicit attitudes might be that

these implicit measures captured different constructs than the explicit measures did, and that dating popularity does not affect these specific constructs.

It is also important to note that, in the interests of brevity, we only used nine items to measure participants' explicit self-reported attitudes. Additional studies could test the effects of dating popularity on socio-political attitudes using more substantial scales. Also, in the interests of simplicity, we only collected data from heterosexual and young participants. Focusing on non-exclusively heterosexual samples might provide interesting new insights into mating market mechanisms (e.g., Whyte et al., 2019). In one study, pansexual and bisexual women reported higher self-perceived attractiveness than heterosexual women, but there was no significant difference in self-perceived attractiveness between pan- and bisexual men and heterosexual men (Whyte et al., 2019). It would be interesting to understand whether dating popularity would affect heterosexual and non-heterosexual individuals differently, too. Other recent evidence has shown that whereas men are more interested in casual sex than women are, the sex difference is larger among younger than older adults (Ko et al., 2019). It is then possible that older adults would be differently affected by dating popularity than younger adults, another possibility that could be further explored.

The Mediating Effects of Positive Affect

Changes in men's positive affect due to dating popularity influenced men's attitudes towards casual sex and the minimum wage and healthcare. Interestingly, dating popularity did significantly impact both the positive and negative affect of women. Popular women reported significantly higher positive and lower negative affect than unpopular women. Unlike for men, however, changes in women's emotions did not influence any of women's socio-political attitudes.

The fact that unpopular men reported lower positive affect than popular men, and were in turn more opposed to casual sex, makes sense from a mating market perspective. As we explained in the previous section, disapproving of casual sex advances the mating self-interest and ultimately benefits the reproductive fitness of unpopular men more than popular men. One of the novel findings of this experiment was that unpopularity decreases men's positive affect (e.g., it decreases their happiness, their excitement, etc.), and this worsened mood in turn makes men more likely to promote values through which they can restrict their own and others' sexuality. Men's regulation of their sexual attitudes in response to mating market circumstances might thus occur through changes in positive emotions, which is a causal relationship that should be further explored by mating researchers.

It is less clear, however, why, even though there was no main effect of dating popularity on men's attitudes towards the minimum wage and healthcare, changes in men's positive emotions after romantic feedback also influenced men's thoughts about increasing the minimum wage and access to healthcare. One of our previous experiments did show that online dating popularity and mating market size affect attitudes towards the minimum wage and healthcare (Luberti et al., 2020), but it did not account for changes in positive affect. It is possible that, similarly to other types of social exclusion, negative romantic feedback worsens mood and in turn a

worse mood (i.e., lower positive affect and/or higher negative affect) makes people less cooperative and less pro-social. A meta-analysis on the effects of social exclusion on positive and negative affect found that, across many experiments, socially excluded participants consistently reported lower positive mood and higher negative mood than socially included participants (Blackhart et al., 2009). In seven experiments, Twenge et al. (2007) found that socially excluded participants were also significantly less pro-social and cooperative than participants in control groups. These results seem, at first, consistent with our findings on attitudes to the minimum wage and healthcare. However, neither positive nor negative affect mediated the effects of social exclusion on pro-social behaviour in any of these seven experiments (Twenge et al., 2007).

Our findings, then, indicate that there might be something unique about being unpopular romantically (as a form of social exclusion), and its effects on pro-social behaviours like supporting an increase in the minimum wage and access to healthcare, through changes in positive affect. As mentioned above for the effects on sexual attitudes, being less, rather than more, popular with the opposite sex signals to men that they have few mating opportunities and, in our experiment, this self-awareness curbed men's enthusiasm, excitement, and pride, among other positive emotions. A reduction in these positive emotions might have made men less approving of increasing the minimum wage and access to healthcare, because lower positive affect corresponds to lower pro-sociality. In support of this idea, there is evidence that shows that positive affect is significantly positively correlated with pro-sociality in several contexts (e.g., George, 1991; Snippe et al., 2018). Future studies could further corroborate our novel findings and these arguments if they showed that changes in positive affect due to dating popularity in particular (rather than social exclusion in general) not only affect men's attitudes towards the minimum wage and healthcare, but also other pro-social attitudes.

We also note that the fact that the total effect of dating popularity on men's attitudes to the minimum wage and healthcare was close to zero suggests that being unpopular makes men more against increasing the minimum wage and access to healthcare *only* through a decrease in positive affect. Dating popularity has no straightforward main effects on these attitudes. The fact that dating popularity's direct effect on these attitudes was positive, albeit nonsignificant, after controlling for affect (i.e., receiving a higher number of negative feedback videos corresponded to higher support for increasing the minimum wage and access to healthcare after controlling for affect; c' in Fig. 3B) suggests there might be other possible mediators we did not account for, through which unpopular individuals would report more support for these attitudes than popular individuals.

These results, moreover, did not support our hypothesis that negative affect would mediate the effects of dating popularity on attitudes, which we based on previous research that mostly focused on the effects of romantic rejection on men's negative emotions and aggression (e.g., Andrighetto et al., 2019; Blake et al., 2018). These past findings showed that romantic rejection significantly increased men's negative emotions, such as anger, which then increased men's hostility towards the opposite sex (Andrighetto et al., 2019). While negative affect might mediate the effects of dating popularity on aggression towards the opposite sex, our results suggest that

changes in men's positive affect due to dating popularity might play a more important role than negative affect in influencing their attitudes towards casual sex and pro-social attitudes like increasing the minimum wage and access to healthcare.

Individual Trait Differences Covary with Some Socio-Political Attitudes

Men were significantly more approving of traditional gender roles than women were, regardless of the romantic feedback that men and women received. This socio-political dimension included ideas that men should take care of women and pay for dating-related expenses. Cross-culturally, men were found to be, on average, more invested in benevolent sexism (i.e., holding seemingly positive attitudes towards women, but stereotyping women as the 'weaker' sex) than women were, at least in some Western countries including Australia (Glick et al., 2000). In line with this previous research, the results from the current study suggest that traditional gender roles might promote men's interests more so than women's interests and that these attitudes, as well as the sex difference in these attitudes, might not be susceptible to changes in perceived dating popularity. In support of this argument, women's economic dependence on men might allow men to have higher control over female sexuality, which ultimately benefits men's over women's fitness (Smuts, 1995). In our previous experiment where we manipulated online dating popularity, we similarly found that men were significantly more approving of benevolent sexism and traditional family values than women were, and that these attitudes were not affected by dating popularity (Luberti et al., 2020).

Here, however, there were also no sex differences in explicit attitudes towards the minimum wage and healthcare, nor significant sex differences in the implicit preference for progressive over conservative politics, which contradicts previous evidence that women are more egalitarian than men are (e.g., Ekehammar & Sidanius, 1982; Luberti et al., 2020; Sidanius & Ekehammar, 1980). One possibility for this discrepancy between current and previous findings is that our sample might have been different from previous samples. For example, here we collected data from young Australians between 18–25, whereas in our earlier work we had collected data from Americans between 18–60 (Luberti et al., 2020). It is then possible that sex differences in egalitarian attitudes only emerge in older adults. However, other previous work (Ekehammar & Sidanius, 1982; Sidanius & Ekehammar, 1980) had found these sex differences in high school students (median age 18), which does not support this explanation. Further evidence should address reasons for these contradictory findings.

Finally, trait mate value significantly predicted attitudes to casual sex and implicit political attitudes. High mate-value participants (both women and men) were more supportive of casual sex than lower mate-value participants, in line with evidence from a recent meta-analysis (Arnocky et al., 2021), and arguments that casual sex is a more beneficial mating strategy for high mate-value individuals than low mate-value individuals. High mate-value participants were also more implicitly conservative than lower mate-value participants. These findings agree with previous evidence on the effect of trait mate value on egalitarianism, showing that physically attractive and/

or formidable individuals are less egalitarian than others, perhaps because an unequal hierarchical society satisfies their self-interest more so than the self-interest of low mate-value individuals (e.g., Petersen & Laustsen, 2019; Petersen et al., 2013; Price et al., 2015, 2017). The fact that we did not find significant effects of trait mate value on explicit attitudes towards the minimum wage and healthcare, and the fact that recent studies did not find support for the argument that formidable individuals might be more conservative than others (Kerry & Murray, 2019a), however, suggests that the relationship between trait mate value and egalitarian attitudes might be complex. Further research should shed more light on these somewhat contradictory findings.

Conclusions

We tested whether popularity in an experimental dating context would affect heterosexual individuals' sexual and broader socio-political attitudes. We found that changes in men's (but not women's) positive affect due to dating popularity shifted men's attitudes towards casual sex and the minimum wage and healthcare. We also found that low mate-value individuals were those most susceptible to changes in their dating popularity and those most likely to shift their attitudes towards casual sex based on romantic feedback (whereas high mate-value individuals were not affected). We found no other significant effects of dating popularity on other explicit or implicit socio-political attitudes. These findings suggest that decreases in men's positive emotions might play a vital role in influencing their negative responses to being unpopular with the opposite sex, such as limiting others' and their own sexual expression, and opposing egalitarian policies such as increasing the minimum wage and access to healthcare. We have provided experimental evidence that can advance researchers' understanding of human mating psychology, as we showed that sexual attitudes/mating strategies can respond to mating market circumstances. We have also provided further evidence that romance and mating can have profound impacts on important societal issues, and that studying how dating popularity affects attitudes can shed light on how to tackle some of these issues.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s40750-022-00188-6.

Acknowledgements We would like to thank UNSW and the Australian Research Council for supporting this research project. We would also like to thank the research confederates (i.e., the paid actors and actresses) who recorded the feedback videos for this experiment.

Funding This work was funded by the Australian Research Council (DP160100459) and the University of New South Wales internal funds. The funding sources were not involved in the implementation of the research project.

Data and Code Availability Data and code available at https://osf.io/hgeqc/?view_only=058b1889350b4d8ab62740fc4645bcc2.

Declarations

Ethical Approval This research project was approved by the UNSW Human Research Ethics Committee. Approval Number HC17518. All procedures were performed in accordance with the ethical standards of the 1964 Declaration of Helsinki and its later amendments. All participants provided informed consent before taking part in this research.

Conflict of Interest The authors declare that they have no conflict of interest.

References

Alexander, R. D. (1982). Biology and the moral paradoxes. *Journal of Social and Biological Structures, 5*, 389–395.

Alexander, R. D. (1987). *The biology of moral systems*. Aldine de Gruyter.

Andrighetto, L., Riva, P., & Gabbiadini, A. (2019). Lonely hearts and angry minds: Online dating rejection increases male (but not female) hostility. *Aggressive Behavior, 45*(5), 571–581. https://doi.org/10.1002/ab.21852

Arnocky, S., Desrochers, J., Rotella, A., Albert, G., Hodges-Simeon, C., Locke, A., Belanger, J., Lynch, D., & Kelly, B. (2021). Men's Mate Value Correlates with a Less Restricted Sociosexual Orientation: A Meta-Analysis. *Archives of Sexual Behavior*. https://doi.org/10.1007/s10508-021-01937-6

Ayduk, O., Downey, G., Testa, A., Yen, Y., & Shoda, Y. (1999). Does rejection elicit hostility in rejection sensitive women? *Social Cognition, 17*(2), 245–271. https://doi.org/10.1521/soco.1999.17.2.245

Banse, R., Seise, J., & Zerbes, N. (2001). Implicit attitudes towards homosexuality: Reliability, validity, and controllability of the IAT. *Zeitschrift Für Experimentelle Psychologie, 48*(2), 145–160.

Baranowski, A. M., & Hecht, H. (2015). Gender differences and similarities in receptivity to sexual invitations: Effects of location and risk perception. *Archives of Sexual Behavior, 44*(8), 2257–2265. https://doi.org/10.1007/s10508-015-0520-6

Baumeister, R. F., Catanese, K. R., & Vohs, K. D. (2001). Is There a Gender Difference in Strength of Sex Drive? Theoretical Views, Conceptual Distinctions, and a Review of Relevant Evidence. *Personality and Social Psychology Review, 5*(3), 242–273. https://doi.org/10.1207/S15327957PSPR0503_5

Baumeister, R. F., & Twenge, J. M. (2002). Cultural suppression of female sexuality. *Review of General Psychology, 6*(2), 166–203. https://doi.org/10.1037/1089-2680.6.2.166

Baumeister, R. F., & Vohs, K. D. (2004). Sexual economics: Sex as female resource for social exchange in heterosexual interactions. *Personality and Social Psychology Review, 8*(4), 339–363. https://doi.org/10.1207/s15327957pspr0804_2

Blackhart, G. C., Nelson, B. C., Knowles, M. L., & Baumeister, R. F. (2009). Rejection Elicits Emotional Reactions but Neither Causes Immediate Distress nor Lowers Self-Esteem: A Meta-Analytic Review of 192 Studies on Social Exclusion. *Personality and Social Psychology Review, 13*(4), 269–309. https://doi.org/10.1177/1088868309346065

Blake, K. R., Bastian, B., & Denson, T. F. (2018). Heightened male aggression toward sexualized women following romantic rejection: The mediating role of sex goal activation. *Aggressive Behavior, 44*(1), 40–49. https://doi.org/10.1002/ab.21722

Brooks, R. C., Russo-Batterham, D., & Blake, K. R. (2022). Incel activity on social media linked to local mating ecology. *Psychological Science, 33*(2), 249–258. https://doi.org/10.1177/09567976211036065.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*(1), 1–14. https://doi.org/10.1017/S0140525X00023992

Buss, D. M., & Schmitt, D. P. (1993). Sexual Strategies Theory: An evolutionary perspective on human mating. *Psychological Review, 100*(2), 204–232. https://doi.org/10.1037/0033-295X.100.2.204

Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology, 71*(3), 464–478. https://doi.org/10.1037/0022-3514.71.3.464

Clark, A. P. (2004). Self-perceived attractiveness and masculinization predict women's sociosexuality. *Evolution and Human Behavior, 25*(2), 113–124. https://doi.org/10.1016/S1090-5138(03)00085-0

Clark, R. D., & Hatfield, E. (1989). Gender differences in receptivity to sexual offers. *Journal of Psychology & Human Sexuality, 2*(1), 39–55. https://doi.org/10.1300/J056v02n01_04

Cone, J., & Ferguson, M. J. (2015). He did what? The role of diagnosticity in revising implicit evaluations. *Journal of Personality and Social Psychology, 108*(1), 37–57. https://doi.org/10.1037/pspa0000014

Conley, T. D. (2011). Perceived proposer personality characteristics and gender differences in acceptance of casual sex offers. *Journal of Personality and Social Psychology, 100*(2), 309–329. https://doi.org/10.1037/a0022152

Edlund, J. E., & Sagarin, B. J. (2014). The mate value scale. *Personality and Individual Differences, 64*, 72–77. https://doi.org/10.1016/j.paid.2014.02.005

Ekehammar, B., & Sidanius, J. (1982). Sex differences in sociopolitical attitudes: A replication and extension. *British Journal of Social Psychology, 21*(3), 249–257. https://doi.org/10.1111/j.2044-8309.1982.tb00546.x

Ferguson, M. J., Mann, T. C., Cone, J., & Shen, X. (2019). When and How Implicit First Impressions Can Be Updated. *Current Directions in Psychological Science, 28*(4), 331–336. https://doi.org/10.1177/0963721419835206

Field, A. (2009). *Discovering statistics using SPSS* (Third ed.). Sage Publications.

Gangestad, S. W., & Simpson, J. A. (2000). The evolution of human mating: Trade-offs and strategic pluralism. *Behavioral and Brain Sciences, 23*(04), 573–587. https://doi.org/10.1017/S0140525X0000337X

Gawronski, B. (2019). Six Lessons for a Cogent Science of Implicit Bias and Its Criticism. *Perspectives on Psychological Science, 14*(4), 574–595. https://doi.org/10.1177/1745691619826015

Gawronski, B., Morrison, M., Phills, C. E., & Galdi, S. (2017). Temporal Stability of Implicit and Explicit Measures: A Longitudinal Analysis. *Personality and Social Psychology Bulletin, 43*(3), 300–312. https://doi.org/10.1177/0146167216684131

George, J. M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. *Journal of Applied Psychology, 76*(2), 299–307. https://doi.org/10.1037/0021-9010.76.2.299

Glick, P., & Fiske, S. T. (1996). The Ambivalent Sexism Inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*(3), 491–512. https://doi.org/10.1037/0022-3514.70.3.491

Glick, P., Fiske, S. T., Mladinic, A., Saiz, J. L., Abrams, D., Masser, B., Adetoun, B., Osagie, J. E., Akande, A., Alao, A., Annetje, B., Willemsen, T. M., Chipeta, K., Dardenne, B., Dijksterhuis, A., Wigboldus, D., Eckes, T., Six-Materna, I., Expósito, F., … López, W. L. (2000). Beyond prejudice as simple antipathy: Hostile and benevolent sexism across cultures. *Journal of Personality and Social Psychology, 79*(5), 763–775. https://doi.org/10.1037/0022-3514.79.5.763

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*(6), 1464–1480. https://doi.org/10.1037/0022-3514.74.6.1464

Greenwald, A. G., Nosek, B. A., Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology, 85*(2), 197–216. https://doi.org/10.1037/0022-3514.85.2.197

Greitemeyer, T. (2005). Receptivity to sexual offers as a function of sex, socioeconomic status, physical attractiveness, and intimacy of the offer. *Personal Relationships, 12*(3), 373–386. https://doi.org/10.1111/j.1475-6811.2005.00121.x

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs, 76*(4), 408–420. https://doi.org/10.1080/03637750903310360

Hudson, V. M., & Matfess, H. (2017). In plain sight: The neglected linkage between brideprice and violent conflict. *International Security, 42*(1), 7–40. https://doi.org/10.1162/ISEC_a_00289

Inquisit 5. (2016). *[Computer Software]*. In https://www.millisecond.com.

Kavanagh, P. S., Fletcher, G. J., & Ellis, B. J. (2014). The mating sociometer and attractive others: A double-edged sword in romantic relationships. *The Journal of Social Psychology, 154*(2), 126–141. https://doi.org/10.1080/00224545.2013.872594

Kerry, N., & Murray, D. R. (2018). Conservative parenting: Investigating the relationships between parenthood, moral judgment, and social conservatism. *Personality and Individual Differences, 134*, 88–96. https://doi.org/10.1016/j.paid.2018.05.045

Kerry, N., & Murray, D. R. (2019a). Is Formidability Associated with Political Conservatism? *Evolutionary Psychological Science, 5*(2), 220–230. https://doi.org/10.1007/s40806-018-0181-5

Kerry, N., Murray, D. R. (2019b). Politics and Parental Care: Experimental and Mediational Tests of the Causal Link Between Parenting Motivation and Social Conservatism. *Social Psychological and Personality Science*. https://doi.org/10.1177/1948550619853598

Ko, A., Pick, C. M., Kwon, J. Y., Barlev, M., Krems, J. A., Varnum, M. E. W., Neel, R., Peysha, M., Boonyasiriwat, W., Brandstätter, E., Crispim, A. C., Cruz, J. E., David, D., David, O. A., de Felipe, R. P., Fetvadjiev, V. H., Fischer, R., Galdi, S., Galindo, O., Golovina, G., Gomez-Jacinto, L., Graf, S., Grossmann, I., Gul, P., Hamamura, T., Han, S., Hitokoto, H., Hřebíčková, M., Johnson, J. L., Karl, J. A., Malanchuk, O., Murata, A., Na, J., O, J., Rizwan, M., Roth, E., Salgado, S. A. S., Samoylenko, E., Savchenko, T., Sevincer, A. T., Stanciu, A., Suh, E. M., Talhelm, T., Uskul, A. K., Uz, I., Zambrano, D., Kenrick, D. T. (2019). Family Matters: Rethinking the Psychology of Human Social Motivation. *Perspectives on Psychological Science*. https://doi.org/10.1177/1745691619872986

Kurzban, R., Dukes, A., & Weeden, J. (2010). Sex, drugs and moral goals: Reproductive strategies and views about recreational drugs. *Proceedings of the Royal Society b: Biological Sciences, 277*(1699), 3501–3508. https://doi.org/10.1098/rspb.2010.0608

Landolt, M. A., Lalumière, M. L., & Quinsey, V. L. (1995). Sex differences in intra-sex variations in human mating tactics: An evolutionary approach. *Ethology and Sociobiology, 16*(1), 3–23. https://doi.org/10.1016/0162-3095(94)00012-v

Li, N. P., Bailey, J. M., Kenrick, D. T., & Linsenmeier, J. A. W. (2002). The necessities and luxuries of mate preferences: Testing the tradeoffs. *Journal of Personality and Social Psychology, 82*(6), 947–955. https://doi.org/10.1037/0022-3514.82.6.947

Li, N. P., & Kenrick, D. T. (2006). Sex similarities and differences in preferences for short-term mates: What, whether, and why. *Journal of Personality and Social Psychology, 90*(3), 468–489. https://doi.org/10.1037/0022-3514.90.3.468

Luberti, F. R., Blake, K. R., & Brooks, R. C. (2020). The effects of the mating market, sex, age, and income on socio-political orientation: Insights from evolutionary theory and sexual economics theory. *Human Nature, 31*(1), 88–111. https://doi.org/10.1007/s12110-019-09361-5

Matsunaga, M. (2010). How to factor-analyze your data right: Do's, don'ts, and how-to's. *International Journal of Psychological Research, 3*(1), 97–110. http://www.redalyc.org/articulo.oa?id=299023509007

Mikach, S. M., & Bailey, J. M. (1999). What distinguishes women with unusually high numbers of sex partners? *Evolution and Human Behavior, 20*(3), 141–150. https://doi.org/10.1016/S1090-5138(98)00045-2

Millar, M., Westfall, R. S., & Lovitt, A. (2018). The influence of mate value on women's desire for long and short-term mates: Implicit responses. *Personality and Individual Differences, 130*, 36–40. https://doi.org/10.1016/j.paid.2018.03.043

Miner, E. J., Starratt, V. G., & Shackelford, T. K. (2009). It's not all about her: Men's mate value and mate retention. *Personality and Individual Differences, 47*(3), 214–218. https://doi.org/10.1016/j.paid.2009.03.002

Murnen, S. K., & Byrne, D. (1991). Hyperfemininity: Measurement and initial validation of the construct. *Journal of Sex Research, 28*(3), 479–489. https://doi.org/10.1080/00224499109551620

Noë, R. (2017). Local mating markets in humans and non-human animals. *Behavioral Ecology and Sociobiology, 71*(10), 148. https://doi.org/10.1007/s00265-017-2376-3

Noë, R., van Hoof, J. A. R. A. M., Hammerstein, P. (2001). *Economics in nature. Social dilemmas, mate choice and biological markets*. Cambridge University Press.

Penke, L., & Denissen, J. J. (2008). Sex differences and lifestyle-dependent shifts in the attunement of self-esteem to self-perceived mate value: Hints to an adaptive mechanism? *Journal of Research in Personality, 42*(4), 1123–1129. https://doi.org/10.1016/j.jrp.2008.02.003

Petersen, J. L., & Hyde, J. S. (2011). Gender differences in sexual attitudes and behaviors: A review of meta-analytic results and large datasets. *The Journal of Sex Research, 48*(2–3), 149–165. https://doi.org/10.1080/00224499.2011.551851

Petersen, M. B. (2017). Reproductive interests and dimensions of political ideology. *Evolution and Human Behavior, 39*(2), 203–211. https://doi.org/10.1016/j.evolhumbehav.2017.12.002

Petersen, M. B., & Laustsen, L. (2019). Upper-Body Strength and Political Egalitarianism: Twelve Conceptual Replications. *Political Psychology, 40*(2), 375–394. https://doi.org/10.1111/pops.12505

Petersen, M. B., Sznycer, D., Sell, A., Cosmides, L., & Tooby, J. (2013). The ancestral logic of politics: Upper-body strength regulates men's assertion of self-interest over economic redistribution. *Psychological Science, 24*(7), 1098–1103. https://doi.org/10.1177/0956797612466415

Pinsof, D., & Haselton, M. (2016). The political divide over same-sex marriage: Mating strategies in conflict? *Psychological Science, 27*(4), 435–442. https://doi.org/10.1177/0956797615621719

Price, M. E., Brown, S., Dukes, A., & Kang, J. (2015). Bodily attractiveness and egalitarianism are negatively related in males. *Evolutionary Psychology, 13*(1), 140–166. https://doi.org/10.1177/147470491501300109

Price, M. E., Pound, N., & Scott, I. M. (2014). Female economic dependence and the morality of promiscuity. *Archives of Sexual Behavior, 43*(7), 1289–1301. https://doi.org/10.1007/s10508-014-0320-4

Price, M. E., Sheehy-Skeffington, J., Sidnaius, J., & Pound, N. (2017). Is sociopolitical egalitarianism related to bodily and facial formidability in men? *Evolution and Human Behavior, 38*(5), 626–634. https://doi.org/10.1016/j.evolhumbehav.2017.04.001

Reeve, S. D., Kelly, K. M., & Welling, L. L. M. (2017). The effect of mate value feedback on women's mating aspirations and mate preference. *Personality and Individual Differences, 115*, 77–82. https://doi.org/10.1016/j.paid.2016.06.007

Regan, P. C. (1998). Minimum Mate Selection Standards as a Function of Perceived Mate Value, Relationship Context, and Gender. *Journal of Psychology & Human Sexuality, 10*(1), 53–73. https://doi.org/10.1300/J056v10n01_04

Schmitt, D. P., Shackelford, T. K., & Buss, D. M. (2001). Are men really more "oriented" toward short-term mating than women? A critical review of theory and research. *Psychology, Evolution & Gender, 3*(3), 211–239. https://doi.org/10.1080/14616660110119331

Schützwohl, A., Fuchs, A., McKibbin, W. F., & Shackelford, T. K. (2009). How Willing Are You to Accept Sexual Requests from Slightly Unattractive to Exceptionally Attractive Imagined Requestors? *Human Nature, 20*(3), 282–293. https://doi.org/10.1007/s12110-009-9067-3

Sidanius, J., & Ekehammar, B. (1980). Sex-related differences in socio-political ideology. *Scandinavian Journal of Psychology, 21*(1), 17–26. https://doi.org/10.1111/j.1467-9450.1980.tb00336.x

Smuts, B. (1995). The evolutionary origins of patriarchy. *Human Nature, 6*(1), 1–32. https://doi.org/10.1007/BF02734133

Snippe, E., Jeronimus, B. F., Aan Het Rot, M., Bos, E. H., de Jonge, P., Wichers, M. (2018). The Reciprocity of Prosocial Behavior and Positive Affect in Daily Life. *Journal of Personality, 86*(2), 139-146.https://doi.org/10.1111/jopy.12299

Sriram, N., & Greenwald, A. G. (2009). The Brief Implicit Association Test. *Experimental Psychology, 56*(4), 283–294. https://doi.org/10.1027/1618-3169.56.4.283

Stevens, J. (2012). *Applied multivariate statistics for the social sciences.* (Fifth ed.). Routledge Taylor & Francis Group.

Stratmoen, E., Greer, M. M., Martens, A. L., & Saucier, D. A. (2018). What, I′ m not good enough for you? Individual differences in masculine honor beliefs and the endorsement of aggressive responses to romantic rejection. *Personality and Individual Differences, 123*, 151–162. https://doi.org/10.1016/j.paid.2017.10.018

Surbey, M. K., & Brice, G. R. (2007). Enhancement of self-perceived mate value precedes a shift in men's preferred mating strategy. *Acta Psychologica Sinica, 39*(3), 513–522.

Terrizzi, J. A., Shook, N. J., & Ventis, W. L. (2010). Disgust: A predictor of social conservatism and prejudicial attitudes toward homosexuals. *Personality and Individual Differences, 49*(6), 587–592. https://doi.org/10.1016/j.paid.2010.05.024

Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology, 92*(1), 56–66. https://doi.org/10.1037/0022-3514.92.1.56

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063–1070.

Weeden, J., Cohen, A. B., & Kenrick, D. T. (2008). Religious attendance as reproductive support. *Evolution and Human Behavior, 29*(5), 327–334. https://doi.org/10.1016/j.evolhumbehav.2008.03.004

Weeden, J., & Kurzban, R. (2013). What predicts religiosity? A multinational analysis of reproductive and cooperative morals. *Evolution and Human Behavior, 34*(6), 440–445. https://doi.org/10.1016/j.evolhumbehav.2013.08.006

Weeden, J., Kurzban, R., & Kenrick, D. T. (2016). The elephant in the pews: Reproductive strategy and religiosity. *The Oxford Handbook of Evolutionary Psychology and Religion*. https://doi.org/10.1093/oxfordhb/9780199397747.013.13

Whyte, S., Brooks, R. C., & Torgler, B. (2019). Sexual economic theory & the human mating market. *Applied Economics, 51*(57), 6100–6112. https://doi.org/10.1080/00036846.2019.1650886

Zhao, X., Lynch, J. G., Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research, 37*(2), 197–206. https://doi.org/10.1086/651257

Authors and Affiliations

Francesca R. Luberti[1,2] · Khandis R. Blake[1,3] · Robert C. Brooks[1]

[1] Evolution and Ecology Research Centre, The University of New South Wales, Sydney, NSW 2052, Australia

[2] Department of Psychology, Nipissing University, North Bay, ON P1B 8L7, Canada

[3] Melbourne School of Psychological Sciences, The University of Melbourne, Melbourne, VIC 3010, Australia