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Demonstrate Values: Behavioral Displays of Moral Outrage As a Cue To Long-Term Mate Potential

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Abstract

Recent findings suggest that moral outrage signals trustworthiness to others and such perceptions play a uniquely important role in identifying social opportunities. We conducted four studies (*N* = 870) investigating how displays of moral outrage are perceived in the specific context of mating. Results indicated participants, particularly women, found prospective mates describing outrage-signaling activism to be more desirable for long-term mating (Study 1), and this perception of desirability was similarly inferred among same-sex raters (Study 2). We further replicated findings in Study 1, while additionally considering the basis of women's attraction toward outraged behavior through candidate mediators (Studies 3). Although we found consistent evidence for the desirability of an ostensibly outraged target, Study 4 finally identified a boundary condition on the desirability of outrage, wherein mere expression of outrage (without activism) was insufficient to bolster attraction. We frame results from complementary perspectives of trust signaling and sexual strategies theory.

Keywords: Moral outrage, Long-term mating, Evolutionary psychology, Prosocial behavior, Virtue signaling

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Sharing one's attitudes and values has become a ubiquitous form of social communication in everyday life. Nonetheless, it is unclear whether espousing concern over moral issues is beneficial in fostering positive perceptions from others or is perceived as inauthentic. This espousal could serve as little more than "virtue signaling," or merely displaying agreement with a moral stance without intentions to act (Brady & Crockett, 2019; Brady, Crockett, & Van Bavel, in press; Jordan & Rand, 2019).

Implicit in these accusations is awareness that moral outrage has a *signaling* function, or that expressing outrage may communicate information to others in the social environment. Moral outrage could have less to do with promoting social change that would remedy a perceived moral transgression, and more with signaling potential social value. Such signaling could prove advantageous when communicating moral status to demonstrate social value. Recent research suggests espousing outrage over wrongdoings, even if such wrongs are self-directed, signals trustworthiness and prosociality (Jordan, Hoffman, Bloom, & Rand, 2016; Jordan & Rand, 2020).

Based on this signaling function perspective, it is plausible that one specific function of expressing outrage could be as a strategy to attract potential mates. People seeking mates for long-term relationships typically rely on various interpersonal cues and signals to infer a partner's benevolence and ability to commit, which are inferred through acts of benevolence (Barclay, 2010; Buss & Schmitt, 1993; Li, Bailey, Kenrick, & Linsenmeier, 2002; Li et al., 2013; Lukaszewski & Roney, 2010). Accordingly, outrage over behaviors conventionally deemed immoral, both within relationships (e.g., infidelity) and more global moral standards (e.g.,

fairness) effectively conveys relationship-specific moral standards, such as investing in offspring and refraining from infidelity. We thus posit that expressed outrage may implicate an espouser as an optimum long-term mate. This program of research investigates how outrage influences perceptions of prospective mates (Study 1) and intrasexual rivals (Study 2), then explores the specific personality attributions underlying the long-term desirability of outraged mates (Study 3) while also distilling expressions of outrage even further to the mere espousal (Study 4).

Outrage as an Interpersonal Signal

Moral outrage refers to the anger elicited by the perception of a moral violation, typically committed by and against parties other than the outraged individual (Batson et al., 2007; Thomas, McGarty, & Mavor, 2009). Unlike other forms of anger, such emotional responses typically motivate individuals to respond aggressively toward transgressors (often called third-party punishment) or to intervene on behalf of perceived victims.

Although outrage is a response to uphold moral norms, a burgeoning literature suggests espoused moral outrage sometimes serves to maintain a moral self-image. Feelings of guilt elicit espousals of outrage toward harmful third parties, which subsequently bolstered self-ratings of moral character (Rothschild & Keefer, 2017; see also Green et al., 2017). Similar attempts to enhance one's self-image are already commonplace in attempts to attract a mate, with individuals seeking to present themselves optimally. Although typically considered in terms of increasing attractiveness, salient mating opportunities similarly lead individuals to demonstrate their moral character (e.g., Guadagno, Okdie, & Kruse, 2012; Li, Cohen, Weeden, & Kenrick, 2010; Makhanova, McNulty, & Maner, 2017).

While bolstering self-perceptions of moral worth, outrage can effectively communicate one's prosocial orientation to others. Strong emotional responses to moral transgressions are

most apparent in the presence of an audience (Kurzban, DeScioli, & O'Brien, 2007) or when individuals have no other outlet to demonstrate prosociality (Jordan & Rand, 2020). A game theoretic model of prosociality suggests that third-party punishment could serve as an interpersonal signal of prosociality to others that the outraged individuals are trustworthy and will be altruistic in the future (Jordan, McAuliffe, & Rand, 2016). From within a mating context, this demonstration of one's own prosociality could be in the service of competitive altruism. Indeed, costly behavior signaling prosociality is useful in heightening social status within a group, which would further increase one's opportunities to mate (Griskevicius, Tybur, & Van den Bergh, 2010; Griskevicius et al., 2007).

Presenting oneself as prosocial is essential for group living to ensure continued access to resources and mates. However, prosociality leaves one vulnerable to exploitation, necessitating selection to favor cooperative groups (Trivers, 1971). Thus, early forms of morality may have evolved to facilitate the reciprocal altruism necessary for group living to be adaptive by defining socially appropriate treatment of others (Krebs, 2008). Game theoretic models of social interactions posit that morality emerged to facilitate cooperative exchanges necessary for group living, with group members espousing outrage toward, and subsequently punishing, those transgressing against shared moral standards (Pedersen, Kurzban, & McCullough, 2013). The positive reputational consequences of outrage could also produce several downstream perceptions of individuals as desirable in other contexts that require prosociality. Beyond general social contexts that implicate outrage as particularly desirable, this current program of research focuses on the downstream consequences of outrage's signal value in relationships.

Contextual Mate Preferences

Humans' highly social nature necessitates selection of group members most capable of

facilitating reciprocal altruism, which would therefore reduce the likelihood of their exploitation. This selection of benevolent conspecifics for group living is critical for various social contexts that include friendships, coalitional alliances, and relationships. This implicates those espousing outrage as particularly desirable for group living. Despite the potential import of selecting those espousing outrage across various contexts (Jordan et al., 2017), given the considerable investments required for successful reproduction, selecting a mate who readily espouses outrage could be especially crucial. Humans' reproductive success is contingent on identifying physical and psychological traits indicating a potential mate's ability to satisfy reproductive goals and therefore offset the costs of reproduction. This requires identifying prospective mates exhibiting complementary genetic traits and the potential to invest in offspring (Trivers, 1972). Given that social environments are rich with potential partners, all of whom might be expected to only partially satisfy all of one's criteria, individuals must prioritize certain traits over others.

One key distinction in priorities is based on whether one is pursuing a short-term (STM) or long-term mating (LTM) strategy (Buss & Schmitt, 1993; Li et al., 2013). Upon prioritizing one approach, individuals identify contextually desirable constellations of traits that would optimize salient reproductive goals (Jonason, Raulston, & Rotolo, 2012). STM emphasizes acquisition of multiple partners for uncommitted sexual encounters, eliciting prioritization of physical attractiveness (Kenrick, Groth, Trost, & Sadalla, 1993; Li & Kenrick, 2006). Women prefer more muscular men in STM, given its connotation of good genes (Frederick & Haselton, 2007). Conversely, men pursuing similar strategies prioritize female body shapes connoting fertility (e.g., narrow waists) to increase reproductive success (Singh, Dixson, Jessop, Morgan, & Dixson, 2010). Furthermore, STM-oriented individuals prefer mates whose behavioral repertoire connotes matched interest in promiscuity, implicating such mates as willing to dissolve a current

pairbond following a sexual encounter (Brown & Sacco, 2017; Brown, Sacco, & Medlin, 2019; Jonason & Buss, 2012).

LTM refers to monogamous, committed pair-bonding. Despite still preferring physically attractive mates, LTM prioritizes mates demonstrating prosocial behavioral repertoires, with women additionally preferring traits connoting men's access to resources and willingness to invest those resources in relationships (Barclay, 2010; Brown & Sacco, 2019; Jonason, Li, & Madson, 2012; Li et al., 2002). For individuals pursuing LTM, a central challenge is identifying prosocial mates who are therefore likely to adhere to normative relationship behaviors, including commitment and fidelity. Previous work has indeed demonstrated the importance of morality in facilitating and maintaining relationships (Heiphetz, Gelman, Strohminger, & Young, 2018; Heiphetz, Strohminger, & Young, 2017), which could subsequently foster an interest in those directly espousing a moral framework and thus implicate a prospective mate as capable of satisficing LTM needs. Long-term mates espousing morality would solve specific adaptive problems men and women face. Selecting women whom men perceive as especially committed to a current pairbond (i.e., relationship) would reduce their concerns of paternal uncertainty; men's commitment similarly indicates proclivity to commit resources to a current pairbond.

Previous work has further suggested that individuals are capable of inferring others' value in LTM through certain aspects of a prospective mate's morality. For example, consider work on so-called deontological decisional strategies. Humans frequently prefer to adhere to socially prescribed rules rather than calculated decisions (i.e., utilitarianism) and prefer to engage those who reflexively seek to follow social rules reflexively and espouse greater levels of outrage (Conway & Gawronski, 2013; Jordan, Hoffman, Nowak, & Rand, 2016; Tetlock, 2013). Those reflexively engaging in such socially conventional morality, whether it be refusing to make a

utilitarian decision in a moral dilemma or administering a third-party punishment in response to an injustice, are perceived as especially desirable interaction partners and warm (Everett, Pizarro, & Crocket, 2016; Jordan et al., 2016; Rom, Weiss, & Conway, 2017; Sacco, Brown, Lustgraaf, & Hugenberg, 2017). Those reflexively espousing their adherence to social rules further perceived as disinterested in promiscuity and desirable in LTM, as they would be perceived as more capable of adhering to relationship conventions (Brown & Sacco, 2019). Given the possibility that outrage emerged to foster perceptions of immediate adherence to the rules governing reciprocal altruism, prospective mates' outrage would seem likely to similarly augment their LTM desirability. Conversely, such reflexive adherence to social rules would necessarily implicate someone consistently espousing outrage as less capable of engaging in social behaviors not deemed conventionally moral (i.e., promiscuity). This desirability in LTM would necessarily undermine their STM desirability, wherein an emotional aversion to deviating from social rules in relations (i.e., relational dissolution) would be disadvantageous in satisfying STM goals (Jonason & Buss, 2012).

Current Research

The current program of research sought to identify the communicative properties of moral outrage in relation to mating goals. Given that moral outrage signals prosociality (Jordan et al., 2016), and that strict moral rules have been shown to connote long-term mating goals (Brown & Sacco, 2019), we predicted that moral outrage would both bolster attractiveness as a mate and convey mating intentions of outraged individuals. We first considered how inferences shape perceptions of one's preferred mating strategies.

We specifically considered outraged individuals' desirability for STM and LTM by opposite-sex raters (Study 1) and perception of such targets by same-sex raters (Study 2) using

within-subjects designs. This latter test has important implications for identifying likely sources of intrasexual competition that could interfere with one's own mating goals. Navigating mating competition requires detecting same-sex individuals competing for the same goals (Griskevicius et al., 2007).

Studies 3 and 4 provided additional evidence for the desirability of outraged targets using between-subjects designs intended to test why these effects were observed. First, we sought to identify potential evaluative bases for the desirability of outraged mates (Study 3). To the extent that outraged targets seem more appropriate for LTM, there are open questions about what personality information is conveyed by expressions of outrage. Accordingly, we assessed perceptions of outraged targets to test our prediction that expressed outrage bolsters suitability for LTM via an increase in the perceived trustworthiness of those outraged targets. Finally, we addressed the possibility that the observed effects are due to expressed outrage and not just non-outraged concern about the topics (Study 4). Studies received IRB approval across two separate institutes. Data and materials for these four studies, as well as results of a separate replication of Study 3, are openly available at: https://osf.io/ntgvw/

Study 1

Study 1 was based on previous research indicating that people perceive prospective mates who espouse aversion to deviating from social rules as especially interested in LTM and disinterested in STM (Brown & Sacco 2019). However, unlike research assessing prosociality through an actor's decision to hypothetical dilemmas (e.g., trolley problems) or participation in a hypothetical economic game (Barclay, 2010), moral outrage may provide a concrete signal of prosociality by addressing the righting of a wrong. We predicted participants would report greater attraction toward outraged targets given that this is a signal of one's moral integrity.

Given the prioritization of benevolence in LTM (Li et al., 2002), we further predicted this attraction toward outraged prospective mates would be most apparent for individuals with a greater preference for LTM.

Method

Participants. A sample of 256 participants from a public university in the Southeastern U.S. completed this study for course credit; although we did not conduct an a priori power analysis, we sought to collect as many participants as possible during a semester. We excluded 5 participants reporting no heterosexual attraction, a common exclusion criteria for studies involving attraction to opposite-sex targets (Brown & Sacco, 2018, 2019), leaving a sample of n = 251 (M_{Age} = 19.55 years, SD = 3.00; 128 women, 123 men; 59.8% White, 37.6% Black, 3.6% Other). There were no other exclusion criteria. Discrepancies in degrees of freedom in this study, and others in this paper, reflect missing data. Sensitivity analyses indicated that we were sufficiently powered to detect small effects (Cohen's f = 0.07, β = 0.80).

Materials and Procedures.

Target Signals. Participants viewed two opposite-sex targets on a simulated dating site. Targets indicated preferred campus activities and were represented by single images of a neutrally expressive Caucasian young adult of equivocally average attractiveness (Minear & Park, 2004). Importantly, activities included behaviors designed to connote both anger toward perceived injustice and an effortful response to it that could not be construed merely as virtue signaling (e.g., advocacy work to pay NCAA athletes, working to end human trafficking, removing plastic straws from beaches to help sea turtles), or control activities (e.g., intramural sports, working as an RA, playing video games; see Table 1 for example passage describing activities).

We utilized specific behaviors as our index for the presence/absence of outrage, as a dating site paradigm may not necessarily afford participants the opportunity to identify the specific emotions through verbalized anger, given that disambiguating anger from outrage is already difficult without a computer interface (O'Mara, Jackson, Batson, & Gaertner, 2011). The behaviors connoting outrage were specifically selected because they ostensibly connoted interest in fostering justice (i.e., ensuring NCAA athletes are not continually exploited for their services, saving sex workers from victimization, reducing the number of animals affected by pollution), a consequence of outrage, beyond behavior merely suggesting benevolence (e.g., simply donating prize money to charity; Van de Vyver & Abrams, 2015). Such displays further suggest the espoused outrage from the target is not merely virtue signaling. This distinction suggests behaviors seeking to right a perceived wrong are indeed putative behavioral indices of outrage.

Images were counterbalanced with activities and presented in a random order. Participants indicated the extent to which targets participated in their respective activities due to three outrage-related motives (outrage, anger, justice) along 7-point Likert-type scales (1 = *Not at All*; 7 = *Very Much*); items were embedded within five additional items not tapping outrage specifically (compassion, fun, friendship, recognition, enjoyment). Outrage items demonstrated acceptable reliability for both outraged and control targets ($\alpha s > 0.65$).

Attraction. Participants indicated their behavioral attraction toward targets by indicating the extent to which they would be interested in messaging the targets through the dating site, a behavioral index of attraction that extends beyond a desirability assessment (Montoya, Kershaw, & Prosser, 2018). Attraction was assessed with a single face-valid item (1 = *Not at All Interested*; 7=*Very Interested*).

Contextual Desirability. Participants also indicated the desirability of targets in specific

mating contents using single items (Brown & Sacco, 2018). Participants rated how desirable each target would be for STM (i.e., "A short-term partner is someone whom you would desire for casual dating or a one-night stand. Overall, how desirable would you find this person as a short-term partner?") and LTM (i.e., "A long-term partner is someone whom you would desire for a long-term, committed romantic relationship. Overall, how desirable would you find this person as a long-term partner?") on separate 9-point Likert-type scales (1 = *Not at All Desirable*; 5 = *Average*; 9 = *Very Desirable*).

Consenting participants indicated their sex before being filtered to respective targets for the dating site. Then, they responded to opposite-sex targets in a randomized and counterbalanced order. Finally, participants were debriefed.

Results

Manipulation Check. A paired-samples *t*-test indicated that participants perceived targets whose behavior connoted outrage as more outraged (M = 3.72, SD = 1.40) than control targets (M = 2.30, SD = 1.25), $t(249) = 12.28$, $p < 0.001$, $d = 1.06$.

Attraction. We submitted attraction to a 2 (Participant Sex: Male vs. Female) × 2 (Target Signal: Outrage vs. Control) mixed-model ANOVA with repeated factors over the latter factor. A Target Signal main effect indicated participants reported greater attraction toward outraged targets (M = 2.79, SD = 1.79) than control (M = 2.48, SD = 1.70), $F(1, 247) = 4.90$, $p = 0.028$, $\eta_p^2 = 0.019$. A Participant Sex main effect indicated men reported greater attraction (M = 2.81, SD = 1.77) than women (M = 2.46, SD = 1.67), $F(1, 247) = 4.30$, $p = 0.039$, $\eta_p^2 = 0.017$.

Effects were qualified by a Participant Sex × Target Signal interaction, $F(1, 247) = 6.91$, $p = 0.009$, $\eta_p^2 = 0.027$ (Figure 1). Because this and subsequent interactions were predicted a priori, we utilize an alpha level of 0.05 in subordinate analyses (Lakens, 2016). Simple effects

tests indicated we found no evidence for a significant difference in men's attraction toward outraged (M = 2.79, SD = 1.69) and control targets (M = 2.84, SD = 1.86), $F(1, 246) = 0.08$, p = 0.772, $\eta_p^2 < 0.001$. Conversely, women reported greater attraction toward outraged targets (M = 2.80, SD=1.89) than control targets (M = 2.13, SD = 1.46), $F(1, 247) = 11.96$, $p < 0.001$, η_p^2 = 0.046.

Desirability. We submitted desirability scores to a 2 (Participant Sex: Male vs. Female) × 2 (Target Signal: Outrage vs. Control) × 2 (Context: STM vs. LTM) mixed-model ANOVA with repeated factors over the latter two factors. A main effect of Target Signal indicated participants found outraged targets more desirable (M = 3.67, SD = 2.33) than control targets (M = 3.29, SD = 2.17), $F(1, 246) = 9.65$, $p = 0.002$, $\eta_p^2 = 0.038$. Another main effect of Context indicated participants perceived targets as more desirable in LTM (M = 3.63, SD = 2.34) than STM (M = 3.33, SD = 2.34), $F(1, 247) = 6.31$, $p = 0.013$, $\eta_p^2 = 0.025$. Effects were qualified by a Participant Sex × Target Signal × Context interaction, $F(1, 247) = 4.25$, $p = 0.040$, $\eta_p^2 = 0.017$. Participant Sex elicited no main effect, $F(1, 247) = 0.12$, $p = 0.722$, $\eta_p^2 = 0.001$.

We decomposed the 3-way interaction by conducting separate 2-way ANOVAs for men and women. Women's effects were qualified by a 2-way interaction (Figure 2a), $F(1, 126) = 19.00$, $p < 0.001$, $\eta_p^2 = 0.131$. Simple effects revealed women found outraged targets more desirable in LTM (M = 4.28, SD = 2.66) than STM (M = 3.24, SD = 2.12), $F(1, 126) = 21.23$, $p < 0.001$, $\eta_p^2 = 0.144$. No significant difference emerged for LTM (M = 3.00, SD = 2.09) and STM desirability toward control targets (M = 3.26, SD = 2.07), $F(1, 125) = 2.54$, $p = 0.113$, η_p^2 = 0.020.

Effects for men were qualified by a 2-way interaction, albeit at a reduced magnitude, $F(1, 121) = 6.19$, $p = 0.014$, $\eta_p^2 = 0.049$ (Figure 2b). Simple effects tests indicated men perceived

outraged targets as more desirable in LTM (M = 3.81, SD = 2.30) than in STM (M = 3.33, SD = 2.21), $F(1, 121)=5.79$, $p=0.018$, $\eta_p^2 = 0.046$. No significant difference emerged in STM (M = 3.49, SD = 2.23) and LTM (M = 3.44, SD = 2.28) desirability for control targets, $F(1, 121) = 0.09$, $p = 0.758$, $\eta_p^2 = 0.001$.

Discussion

Supporting predictions, participants indicated greater overall interest in targets whom they perceived as more outraged, although this effect was most apparent for women. Given that outrage is itself a costly interpersonal signal and that women's investment in reproduction is much costlier than men's, it would be advantageous for women to identify men more capable of offsetting these costs through incurring their own for a prospective mate (Iredale, Van Vugt, & Dunbar, 2008; Sundie et al., 2011; Trivers, 1972). Additionally, as reflected by the overall desirability of an outraged behavioral repertoire, this heightened interest in an outraged partner could coincide with an aversion to a prospective mate not espousing outrage. The control target could have provided little information on their relational value to women, who are particularly judicious in their selection of mates based on their reproductive costs (Haselton & Buss, 2000; Kenrick et al., 1993).

Considering specific mating goals, both men and women found mates whom they perceived as outraged especially desirable in LTM. This preference for outraged targets specifically in LTM would be especially adaptive, given the prioritization men and women both place on benevolence in long-term mates (Barclay, 2010; Li et al., 2013; Li et al., 2002). Both men and women downregulated this preference for outraged mates in STM. This likely reflects different priorities in STM at odds with perceived goals of outraged individuals (Jonason & Buss, 2012; Jonason, Garcia, Webster, Li, & Fisher, 2015).

Study 2

Whereas Study 1 sought to identify the contextual mating desirability of behavior indicating moral outrage, it did not consider same-sex perceptions in this context. Study 2 considered how potential intrasexual rivals perceive outrage as a signal. Humans demonstrate considerable sensitivity and vigilance toward attractive intrasexual rivals, including greater sustained attention toward rivals (Maner, Gailliot, Rouby, & Miller, 2007) and perceptual acuity toward cues of sexual receptivity (Sacco, Hugenberg, & Sefcek, 2009). Given this vigilance, it would be adaptive to identify behavioral repertoires connoting benevolence in prospective intrasexual rivals and determine their preferred mating strategies. We predicted men and women would perceive same-sex targets espousing higher levels of moral outrage as especially interested in LTM.

Method

Participants. We recruited 204 participants from a mid-sized public university in the Southeastern U.S. in exchange for course credit. We excluded 10 from final analyses for indicating no heterosexual attraction or being older than 40 years (see Brown, Keefer, & Sacco, 2020). The latter methodological decision was to ensure our sample most accurately represented a typical reproductive window, as the average onset age of menopause is 40 to 60 years (te Velde & Pearson, 2002). This resulted in a final sample of n = 194 (M_{Age} = 19.67 years, SD = 2.18; 119 women, 75 men; 68.6% White, 23.7% Black, 5.8% Other). Sensitivity analyses indicated that we were sufficiently powered to detect small effects (Cohen's f = 0.08, β = 0.80).

Materials and Procedure

Perceived Mating Interest. Participants evaluated the same targets in a similar capacity

as the previous study, albeit those of the same sex. Participants indicated their perceptions of targets as being interested in LTM and STM using similar face-valid single item measures (1 = *Not at All Interested*; 7 = *Very Interested*).

Consenting participants were directed to same-sex targets and evaluated the outraged and control targets in their perceived interest in LTM and STM. They also indicated the extent to which targets appeared motivated by outrage (αs > 0.59). Participants were then debriefed.

Results

Manipulation Checks. A paired-samples *t*-test indicated that participants viewed the outraged target as more outraged (M = 3.75, SD = 1.25) than the control target (M = 2.00, SD = 1.18), $t(188) = 14.20$, $p < 0.001$, $d = 1.44$.

Perceived Mating Interest. We submitted perceived mating interest scores to a 2 (Participant Sex: Male vs. Female) × 2 (Target Signal: Outrage vs. Control) × 2 (Context: STM vs. LTM) mixed-model ANOVA with repeated factors over the latter two factors. A main effect of Context indicated targets appeared more interested in LTM (M = 3.77, SD = 1.96) than in STM (M = 2.42, SD = 1.56), $F(1, 189) = 113.61$, $p < 0.001$, $\eta_p^2 = 0.375$. Another main effect of Target Signal indicated outraged targets were perceived as more interested in mating (M = 3.18, SD = 1.80) than control targets (M = 3.01, SD = 1.73), $F(1, 189) = 4.17$, $p = 0.043$, $\eta_p^2 = 0.022$.

Effects were qualified by a Participant Sex × Context interaction, $F(1, 189) = 13.92$, $p < 0.001$, $\eta_p^2 = 0.068$. Simple effects tests indicated men perceived more STM interest in same-sex targets (M = 2.84, SD = 1.76) than did women (M = 2.25, SD = 1.56), $F(1, 192) = 14.38$, $p < 0.001$, $\eta_p^2 = 0.071$. The difference between men's (M = 3.65, SD = 1.91) and women's (M = 3.84, SD = 1.96) same-sex perceptions for LTM was not significant, $F(1, 189) = 0.52$, $p = 0.471$, $\eta_p^2 = 0.003$. Given the fact that women typically exhibit more of a disposition toward monogamy

and men are more receptive to promiscuity (Schmitt, 2003), it is unsurprising for individuals to infer these respective mating intentions in potential intrasexual competition. The larger effect for women suggests pair-bonding capacity may play a stronger role in women's mating decisions, given women's considerably larger investment in offspring compared to men's (Trivers, 1972).

Critically, effects were further qualified by a Target Signal × Context interaction, $F(1, 189) = 26.62$, $p < 0.001$, $\eta_p^2 = 0.123$ (Figure 3). Simple effects tests indicated that outraged targets were perceived as more interested in LTM ($M = 4.14$, $SD = 2.13$) than STM ($M = 2.22$, $SD = 1.47$), $F(1, 189) = 112.91$, $p < 0.001$, $\eta_p^2 = 0.374$. Further, control targets were viewed as more interested in LTM ($M = 3.40$, $SD = 1.80$) than STM ($M = 2.62$, $SD = 1.66$), albeit at a reduced magnitude $F(1, 189) = 23.69$, $p < 0.001$, $\eta_p^2 = 0.111$.

Discussion

Participants viewed same-sex targets espousing moral outrage as especially interested in LTM. Just as opposite-sex raters perceived targets whose behavior connotes outrage as more attractive for LTM but not STM in Study 1, same-sex raters showed corresponding sensitivity to their perceived goals. This supports our theoretical supposition that outrage signals prosociality to same-sex audiences and therefore provides information about an individual as potential intrasexual competition in long-term contexts, given that individuals are averse toward group members who behave kindly toward potential competition (Lukaszewski & Roney, 2010).

These first two studies identified the social value of outrage within a mating context by demonstrating how outraged individuals are perceived as especially interested and desirable in LTM, with women being particularly interested in pursuing partners whose behavioral repertoires suggest outrage toward injustice. However, these studies lack evidence of *how* the prosocial signal of outraged behavior serves as a perceptual basis of these value judgments. We

considered several perceptual mediators in Study 3 to determine a potential basis for the desirability of outrage.

Study 3

Research on the social value of outrage suggests its signal value is rooted in connoting one's overall prosociality toward others (e.g., Jordan & Rand, 2020). Implicit in the connotation of prosociality is an understanding that outraged individuals possess benevolent intentions, which could manifest as a perception of the trustworthiness requisite for attraction (Montoya & Insko, 2008). Within a mating domain, this trustworthiness could implicate a prospective mate as having less proclivity toward infidelity and being more capable of meeting relational needs. We thus considered the extent to which a prospective mate is perceived as trustworthy as a potential mediator of the effects of espoused outrage that we observed in Studies 1 and 2.

Additionally, the previous two studies considered outrage through an experimental manipulation describing a behavioral repertoire ostensibly connoting outrage. Although participants nonetheless perceived such repertoires as connoting higher levels of outrage compared to the control, in addition to being a putative signal of outrage behaviorally (Van de Vyver & Abrams, 2015), the results failed to demonstrate whether inferred outrage was the basis of these targets' LTM desirability or participants' espoused attraction. This prompted us to consider perceptions of outrage as a mediator in this study.

Because of our interest in identifying the specific signal value of outrage that could elicit attraction, we further considered several additional mediators for contextual desirability and attraction. First, we wanted to identify how outraged behavioral repertoires connote an actor's perceived personality traits while determining how these traits may inform subsequent mate choices. Certain personality traits are considered especially desirable for prospective mates, with

individuals consistently desiring mates who are extraverted, open to experience, and conscientious (Figueredo, Sefcek, & Jones, 2006). Agreeable partners are further considered the most satisfying in marriage (Botwin, Buss, & Shackelford, 1997), with conscientiousness and agreeableness being associated with disinterest in promiscuity (Schmitt & Shackelford, 2008). Consideration of these traits afforded us an opportunity to understand the personality basis of an attraction to outrage by identifying whether personality inferences led perceivers to recognize whether prospective mates possessed desirable traits for LTM.

We further considered previous work demonstrating the value of outrage as a trustworthiness cue (Jordan et al., 2016; Jordan & Rand, 2020). This signal of trustworthiness could implicate outraged targets as capable of the fidelity necessary for successful LTM. Further, because of the importance of trust in facilitating the approach of prospective mates (Montoya, Faiella, Lynch, Thomas, & DeLuca, 2015; Montoya & Insko, 2008), we further predicted that the basis for the attraction to outraged behavioral repertoires would be rooted in outraged individuals' trustworthiness in relationships.

Methods

Participants. We recruited 182 undergraduate women from a public Southeastern university in exchange for course credit. Six women were excluded from final analyses for reporting either non-heterosexual attraction or being older than 40 years (n = 176; M_{Age} = 19.82, SD = 3.55; 65.3% White, 29.5% Black. 4.6% Other). We exclusively sampled women in Studies 3 and 4, because the effects for contextual desirability in Study 1 were especially large for women and only women's behavioral attraction was influenced by target moral outrage. Sensitivity analyses indicated that we were sufficiently powered to detected small effects (Cohen's f = 0.10, β = 0.80).

Materials and Procedures. Consenting participants were randomly assigned to read one of the two male dating profiles from the previous studies after completing demographics information to confirm they were female. Importantly, these were randomly assigned on a between-subjects basis for participants to read about the target either espousing outrage (n = 86) or the control (n = 90).

After reading the profiles, participants initially indicated the extent to which the target exhibited clusters of attributes representing the Big Five traits using a modified 10-item inventory (TIPI; Gosling, Rentfrow, & Swann, 2003). For instance, the target's trait extraversion was assessed by asking participants how much the target seemed "Extraverted, enthusiastic" and "Reserved, quiet" (reverse-scored).[1] Items operated along 7-point scales (1 = *Strongly Disagree*; 7 = *Strongly Agree*) and were aggregated across the two items for each trait, with one item being reverse-scored per trait. Combined scores for extraversion (M_{Grand} = 4.30, SD = 1.60), conscientiousness (M_{Grand} = 5.29, SD = 1.38), openness (M_{Grand} = 4.84, SD = 1.31), and neuroticism (M_{Grand} = 3.07, SD = 1.16) showed weak reliabilities (see Table 2), as expected with shorter measures (Kline, 2000). Nonetheless, such scores were sufficiently high enough to justify their aggregation as a 2-item subscale (see Jonason, Valentine, Li, & Harbeson, 2011). The reliability for agreeableness was negative (α = -0.06), prompting us to consider agreeableness in these analyses no further.[2]

Participants then responded to the same outrage manipulation check as the previous studies (α = 0.64, M_{Grand} = 2.79, SD = 1.35). This was followed by indicating the extent to which the target appeared trustworthy using a single, face-valid measure of the extent to which the target appeared trustworthy in relationships (1 = *Not at All*; 7 = *Very Much*; Rempel, Holmes, & Zanna, 1985; M_{Grand} = 4.57, SD = 1.43) before rating the contextual desirability of their

respective target for both LTM (M_{Grand} = 3.94, *SD* = 2.49) and STM (M_{Grand} = 2.56, *SD* = 1.66), as well as attraction (M_{Grand} = 2.26, *SD* = 1.44) with the same items from Study 1.

Results

Manipulation Check. An independent samples *t*-test indicated participants evaluated the outraged targets as more outraged (*M* = 3.71, *SD* = 1.05) than control targets (*M* = 1.90, *SD* = 0.95), $t(174) = 12.01$, $p < 0.001$, $d = 1.81$.

Personality Inferences. Participants found the target espousing outrage to be more extraverted, conscientious, and open to experience than the control target (all *p*s < 0.001); no differences emerged for neuroticism. See Table 2 for descriptive and inferential statistics for comparisons. Additionally, perceived extraversion, conscientiousness, and openness were positively correlated with attraction (Table 3).

Accordingly, we then tested the extent to which differences in trait ratings varied as a function of perceived target outrage. To do this, we estimated a path model treating the outraged profile condition (dummy-coded with 1 = outrage profile, 0 = control) as our predictor, each of the four trait ratings as our outcomes, and outrage ratings as a candidate mediator. The path model and proposed indirect effects were estimated using bootstrapped standard error estimation in Lavaan (Rosseel, 2012). The resulting model (Figure 4) found that perceived outrage partially explained the effect of Condition on extraversion ratings (indirect effect = .55, 95% CI [.12, .98], *SE* = 0.22, *z* = 2.50, *p* = 0.010). However, because perceived outrage did not predict unique variance in the other traits after controlling for condition, no other indirect effects were significant (*p*s > 0.170).

Contextual Desirability. We next conducted a 2 (Target Espousal: Outrage vs. Control) × 2 (Context: LTM vs. STM) mixed-model ANOVA with repeated factors over the latter factor

(Figure 5). A main effect emerged for Context, such that participants viewed their respective target as more desirable in LTM (M = 3.94, SD = 2.49) than in STM (M = 2.56, SD = 1.65), F(1, 174) = 60.91, $p < 0.001$, $\eta_p^2 = 0.259$. Another main effect of Condition emerged indicating that participants found the outraged target as more desirable (M = 3.75, SD = 2.04) than the control target (M = 2.77, SD = 1.95), F(1, 174) = 15.73, $p < 0.001$, $\eta_p^2 = 0.083$. Effects were qualified by a Target Espousal × Context interaction, F(1, 174) = 19.43, $p < 0.001$, $\eta_p^2 = 0.100$. Simple effects tests indicate that the outraged target was more desirable in LTM (M = 4.85, SD = 2.74) than the control target (M = 3.08, SD = 2.29), F(1, 174) = 25.33, $p < 0.001$, $\eta_p^2 = 0.127$. Conversely, the difference in STM desirability was not significant for outraged (M = 2.65, SD = 1.70) and control targets (M = 2.47, SD = 1.61), F(1, 174) = 0.54, $p = 0.461$, $\eta_p^2 = 0.003$.

Next, we explored the extent to which perceived outrage might explain the effects of condition on LTM desirability (versus STM). To do so, we fit a similar path model with condition as our predictor, LTM and STM desirability as our outcomes and perceived outrage as a candidate mediator (Figure 6). The model indicated that the effect of Condition on LTM was due in part to the perceived outrage of the target (indirect effect = 0.68, 95% CI [0.06, 1.29], SE = 0.32, z = 2.13, p = 0.030). No significant direct or indirect effects emerged predicting STM desirability.

Although the pattern of significance was specific to LTM, we tested specifically whether the effects of perceived outrage and/or condition were specifically moderated within-subjects by context (i.e., LTM v. STM). To do so, we compared this base model to a nested model that constrained the slopes of outrage condition and perceived outrage to equality across domains. To the extent that this equality constraint across context causes a loss of model fit, the model comparison indicates that effects of the predictors differ as a function of context (i.e., that

context moderates the slopes of the path model). Consistent with the mixed model ANOVA results, the data demonstrated a severe loss of model fit from this alternative, $\Delta\chi^2$ (2) = 20.48, p < 0.001. In other words, the data demonstrated that the effects of outrage condition (and resulting perceptions) were specific to LTM (i.e., did not extend to STM).

Attraction and Trust. An independent samples *t*-test indicated that participants were more attracted to the outraged target (*M* = 2.66, *SD* = 1.59) than the control target (*M* = 1.87, *SD* = 1.17), *t*(174) = 3.79, *p* < 0.001, *d* = 0.56. Another *t*-test indicated that participants trusted the outraged target (*M* = 4.91, *SD* = 1.32) more than the control target (*M* = 4.26, *SD* = 1.46). *t*(173) = 3.07, *p* = 0.002. *d* = 0.46.

Were these condition effects on trust and attraction due to outrage? A similar path model treating condition as the predictor, trust and attraction as the outcomes, and perceived outrage as the mediator returned only reliable effects of condition on both trust (*b* = 0.74, β = 0.26, *SE* = 0.33, *z* = 2.24, *p* = 0.025) and attraction (*b* = 0.52, β = 0.18, *SE* = 0.26, *z* = 2.01, *p* = 0.044) after controlling for perceived outrage after the manipulation. Perceived outrage was unrelated to both outcomes (*p*s > 0.200) and, accordingly, there was no evidence that it explained the effects of condition (indirect effect *p*s > 0.200). This prompted us not to consider a sequential mediation with perceived outrage and trust as mediators predicting behavioral attraction. [3]

Discussion

Replicating previous findings, in both this program of research and others (e.g., Jordan & Rand, 2020), increased outrage was especially desirable in LTM and elicited greater attraction. Outraged behavioral repertoires were further perceived as more trustworthy in relationship domains. In addition to these findings, we further identified the personalities individuals infer among those espousing outrage, with the outraged target appearing more extraverted,

conscientious, and open to experience. Such findings suggest an overall social desirability of moral outrage, given that a personality constellation of high levels of these traits are especially desirable in a romantic partner (Figueredo et al., 2006).

We further extended previous findings by demonstrating mediational underpinnings of these social perceptions in shaping relationship decision-making. Specifically, we found that perceiving a prospective mate whose behavior connotes outrage as especially outraged heightened their LTM desirability. This mediational pathway may reflect the fact that outrage signals social benevolence, a behavioral repertoire that is paramount in women's selection of a long-term mate to offset the costs of reproduction through parental investment (Barclay, 2010; Li et al., 2002, 2013; Trivers, 1972). Consideration of perceived outrage further indicated that such a basis in desirability was limited to long-term contexts, as the effects were absent for STM desirability, an effect indicating outraged behavioral repertoires are not necessarily relevant in selecting mates for single sexual encounters.

This identified mediational pathway was nonetheless absent in predicting behavioral attraction in a general capacity. That is, although targets perceived the outraged target as indeed more outraged, this perception did not necessarily motivate participants to espouse greater interest in behaviorally pursuing the prospective mate. This discrepancy between LTM desirability and attraction may reflect the distinctiveness of affective and behavioral components in attraction that elicit different consequences toward outraged behavioral repertoires (Montoya & Horton, 2014). For example, viewing a mate as desirable may not elicit behavioral attraction if a perceiver may not have enough evidence to consider approaching a prospective mate (e.g., reciprocal liking) despite knowing their relational value (Montoya & Sloat, 2019).

. Although Studies 1-3 yielded consistent effects of our manipulation, that manipulation

relied on participants' ability to infer outrage as a key motive. In all those studies, the outraged profile described their activism and, as we anticipated, manipulation checks indicated that this profile was viewed as considerably more outraged relative to the control (Studies 1-3). Nevertheless, this manipulation confounds actual prosocial behavior with mere perceptions of outrage. To address this potential limitation in understanding moral outrage's desirability in mating domains, we conducted Study 4 to decouple the expression of outrage from the prosocial behavior that may emerge following injustices.

Study 4

The extant literature suggests that reflexive responses toward perceived injustices are both indicative of moral outrage and ultimately desirable (e.g., Jordan et al., 2016). Despite these findings likely demonstrating the consequences of outrage within interpersonal exchanges, they are nonetheless focused on how outrage motivates prosociality and not necessarily the expression of outrage in isolation. At the crux of many salient concerns of those regarded as "virtue signaling" in their expression of outrage is that such expressions are merely an interest in appearing socially desirable without it necessarily translating into actual prosociality that would indicate one's capability of actually satisfying a mate's reproductive needs (Barclay, 2010; Capraro et al., 2018; Jordan & Rand, 2019). Studies 1-3 were limited insofar as the prospective mates' outrage was coupled with behavioral repertoires that could have similarly connoted a general interest in prosociality that was not motivated by outrage. Although we selected behaviors that would have connoted outrage, it remains ambiguous whether the outrage inferred in prosociality is indeed desirable in LTM. This prompted us to conduct a subsequent study that decouples the emotional expression of outrage from concomitant outraged behaviors.

The purpose of this study is to determine whether the mere expression of outrage

(without engaging in prosocial behaviors diagnostic of outrage) similarly heightens LTM desirability. If the expression of outrage itself sufficiently indicates one's capability as a long-term partner, individuals will continue to find the outraged target desirable in LTM. Conversely, if the expression of outrage without subsequent intent to rectify injustices are insufficient in connoting one's LTM capabilities, no difference should in the desirability of outraged and non-outraged mates. Through this distillation of outrage into the expression, we further continue to assess behavioral attraction and the various trait inferences that could facilitate the proposed attraction.

Method

Participants. We recruited 228 undergraduate women from two public universities in Southeastern U.S. in exchange for course credit for an online study. This recruitment decision was rooted in the difficulty of recruiting participants quickly during the COVID-19 pandemic. Five women were excluded for reporting no heterosexual attraction or reporting themselves as older than 40 years (n = 223; M_{Age} = 19.09 years, SD = 1.97; 74.4% White, 15.7% Black, 4% Hispanic, 5.9% Other). A sensitivity analysis indicated we were sufficiently powered to detect medium effects (Cohen's f = 0.37, β = 0.80). No difference emerged between both locations for our critical outcome variables (i.e., attraction, contextual desirability), nor did the location in which the study was conducted interact with the experimental condition (ps > 0.139). This prompted us to collapse across location in our primary analyses.

Materials and Procedure. Consenting participants underwent the same procedures as described in Study 3, wherein they were randomly assigned either to evaluate a prospective mate espousing outrage (n = 112) or a control target not expressing outrage (n = 111), albeit with a critical difference in the procedures. The same three social issues from the previous studies to

demonstrate outraged targets' outrage were used, which became the crux of ostensible responses from both the outraged and control targets. The target either expressed outrage in response to a prompt asking them about a given issue or merely acknowledged concerns about them, which afforded us the opportunity to hold the content of responses constant while manipulating the emotional expression toward issues with injustice (for example statements, see Table 4).

Like the previous studies, participants indicated the extent to which they perceived their respective target to be outraged using the same three items ($\alpha = 0.81$; $M_{Grand} = 4.39$, $SD = 1.63$). Participants further responded to the TIPI to assess inferred personality traits. Combined scores for extraversion ($M_{Grand} = 4.36$, $SD = 1.34$), conscientiousness ($M_{Grand} = 4.98$, $SD = 1.18$), openness ($M_{Grand} = 4.25$, $SD = 1.17$), and neuroticism ($M_{Grand} = 4.03$, $SD = 1.37$) showed weak reliabilities, albeit in a range that was acceptable for aggregation with short scales; scores for agreeableness also demonstrated adequate reliability in this study ($M_{Grand} = 3.56$, $SD = 1.26$; see Table 5 for reliabilities). Participants responded to the same items for STM ($M_{Grand} = 3.41$, $SD = 2.02$) and LTM desirability ($M_{Grand} = 3.65$, $SD = 2.30$) in addition to behavioral attraction ($M_{Grand} = 2.59$, $SD = 1.61$) and trust ($M_{Grand} = 4.33$, $SD = 1.21$). Participants further indicated the extent to which they perceived the target as prosocial along a single face-valid item ($M_{Grand} = 4.90$, $SD = 1.61$; 1 = *Not at All*; 7 = *Very Much*).

Results

Manipulation Check. An independent samples *t*-test indicated participants evaluated the outraged targets as more outraged ($M = 5.45$, $SD = 1.12$) than control targets ($M = 3.31$, $SD = 1.34$), $t(221) = 12.91$, $p < 0.001$, $d = 1.73$. Subsequent one-sample t-tests weighted against the scalar midpoint of 4 indicates that the outraged target was perceived as categorically outraged, $t(111) = 13.71$, $p < 0.001$, $d = 1.29$. The control target was perceived as categorically not

outraged, $t(110) = -5.37$, $p < 0.001$, $d = -0.51$.

Personality Inferences. Participants found the outraged target to be more extraverted, conscientious, open to experience, and neurotic than the control target in addition to being less agreeable (Table 5 for descriptive and inferential statistics for comparisons). Additionally, giving slightly different findings from Study 3, perceived conscientiousness, openness, and agreeableness were positively correlated with attraction and perceived neuroticism was negatively correlated with attraction (Table 6).

Contextual Desirability. We submitted our data to 2 (Condition: Outrage vs. Control) × 2 (Context: STM vs. LTM) mixed-model ANOVA with repeated factors over the latter factor. Neither main effect emerged, nor did an interaction, prompting us to consider contextual desirability no further, Fs < 2.81, ps > 0.094. Nonetheless, the LTM desirability of the outraged target was descriptively higher. See Table 7 for descriptive statistics.

Attraction, Trust, and Prosociality. An independent samples t-test indicated participants perceived the outraged target as more prosocial ($M = 5.54$, $SD = 1.32$) than the control target ($M = 4.26$, $SD = 1.63$), $t(211.12) = 6.40$, $p < 0.001$, $d = 0.86$. However, the outraged target did not significantly differ in perceived trustworthiness ($M = 4.41$, $SD = 1.36$) from the control target ($M = 4.26$, $SD = 1.25$), $t(219) = 0.84$, $p = 0.403$, $d = 0.11$. Participants additionally did not report significantly greater attraction toward the outraged target ($M = 2.71$, $SD = 1.63$) than the control target ($M = 2.47$, $SD = 1.60$), $t(221) = 1.13$, $p = 0.257$, $d = 0.15$.

Discussion

Results for Study 4 provided evidence for a boundary condition for the desirability of outrage in LTM. Mere expressions of outrage appeared no more desirable (versus control) in the absence of specific behaviors that may veridically implicate an outraged actor as willing to

engage others prosocially. This null effect could potentially reflect that the mere expression of outrage may heighten prosociality, but also several undesirable traits (e.g., neuroticism, disagreeableness) that could negate the benefits of prosociality in mating domains. Espoused outrage nonetheless did not result in the expresser as being less desirable than the control target, which may also be rooted in the inferred prosociality through outrage potentially buffering prospective mates from appearing too disagreeable in their behavior. Furthermore, the lack of effects for trustworthiness could have reflected a need for additional evidence before seeking engagement with an ostensibly prosocial mate that would otherwise be absent without a behavioral display of prosociality.

Like with Study 3, we found consistent evidence of espoused outrage heightening perceptions of desirable traits including extraversion, conscientiousness, and openness to experience. This consistency in effects may suggest that outrage connotes an assertive interpersonal style through extraversion, as outrage could motivate more dominant approaches to righting wrongs (Cheng, Tracy, & Henrich, 2010). The perceptions of conscientiousness and openness may further implicate expressing outrage as sufficient in connoting these traits; prosociality is a ubiquitous behavior that occurs independent of them (Habashi, Graziano, & Hooper, 2016). Interestingly, perceptions of outrage subsequently elicited perceptions of targets as disagreeable and neurotic. These findings may reflect the possible costs associated with appearing particularly angry (Lukaszewski et al., in press). Highly outraged individuals could view their desire to right a wrong as morally the correct decision, yet it may undermine subsequent affordance judgments in affiliative and reproductive domains, given both the aversiveness of disagreeable and neurotic conspecifics and mates (Brown et al., 2019; Figueredo et al., 2006; Sacco & Brown, 2018). This suggests outrage's connotation of reproductive

desirability is contingent upon how individuals respond to what they perceive to be an injustice.

General Discussion

Across four studies, we found that moral outrage serves as a signal that is utilized to infer mate goals and mate value, but only when such outrage manifests through demonstrated prosociality. Participants viewed prospective mates engaging in behaviors diagnostic of outrage as especially desirable in LTM (Study 1) and potential rivals espousing similar viewpoints as interested in LTM (Study 2). These findings suggest behavioral displays of outrage can specifically signal benevolence that is inferred as particularly desirable in mating domains, aligning with previous findings indicating reflexive moral strategies are desirable for LTM and elicit perceptions of interest in monogamy (Brown & Sacco, 2019).

The preference for a prospective mate espousing outrage was primarily apparent for LTM domains and this effect was due in part to the perception that the target was more outraged in Study 3 based on attempting to rectify social injustices. This perceived outrage identified through the putative displays in dating profiles could implicate outraged mates as being especially capable of the monogamy necessary for a long-term pairbond or being a benevolent partner, given the prosocial function of outrage. The inferred monogamous disposition of outraged behavioral repertoires could similarly be perceived as costly in STM. For example, highly monogamous individuals are deemed especially “clingy” and may be less capable of ending a short-term relationship (Jonason & Buss, 2012). Nevertheless, we found that perceptions of greater outrage on the part of the target corresponded with greater STM desirability in Study 4, suggesting greater complication in identifying why outrage is desirable in LTM that future research would benefit in clarifying. Put another way, the perception that the target was outraged served to bolster STM desirability, although the outraged profile was not more desirable in this

context across studies; this finding could reflect the interest across both contexts that benevolent mates would be desirable, albeit with kindness being most critical for LTM (Li et al., 2002).

Furthermore, this is not to say outrage is itself without any social costs, as evidenced by Study 4 demonstrating the augmented desirability of outrage is limited to when it is accompanied by prosocial behaviors. Although espoused outrage itself indeed connotes prosociality, the expression itself could implicate the espouser as particularly costly within a long-term pairbond. More outraged targets were also seen as more neurotic and disagreeable (Study 4) in addition to being perceived as more extraverted, so the inferred traits of outrage behavior are somewhat ambivalent. Broadly, outrage expressed for the purpose of increasing desirability may not accurately reflect their concerns over transgressions, suggesting it not to be an honest signal of one's attitudes (e.g., Capraro et al., 2018). In other words, people's espoused outrage may feel inauthentic at a certain point and therefore undermine the espouser's desirability. Future research would benefit from specifically assessing whether particularly high levels of espoused outrage could produce diminishing returns in desirability.

Sex Differences in Outrage Prioritization

Women placed greater valuation on outrage for a prospective mate, a result consonant with women's roles as selectors in parental investment theory (Trivers, 1972). Women incur a substantially larger minimal cost in reproduction (e.g., 9-month gestation, lactation) compared to men (e.g., single instance of sperm provision), which necessitates employment of stringent mate selection criteria to offset these costs. Identification of prospective mates whose behaviors connote a willingness to invest in others would be adaptive in selecting mates who could match women's investment. Men's outrage signals could implicate them as capable of investing in a relationship, thereby matching women's investment in a complementary fashion. These findings

align with previous work implicating emotionally aversive reactions to interpersonal transgressions connote trustworthiness, with women being especially attuned to such perceptions (Everett et al., 2016; Sacco et al., 2017).

Furthermore, not only did women espouse greater attraction toward outraged targets compared to control targets, women also reported less attraction toward control targets than men in Study 1. This difference in attraction could reflect both women's judiciousness in mate selection to those explicitly demonstrating value and men's less stringent criteria (Haselton & Buss, 2000). Women could perceive the costly prosocial signal provided by outrage as indicative of men's suitability as a mate, as outrage could connote explicit interest to offset women's reproductive costs unlike men not espousing outrage. This considerable stringency in mate selection criteria in women could further be the basis of the small differences in desirability scores reported across these studies. Because of the considerable reproductive costs that women could incur through a single act of intercourse, selection would likely favor women who employ more stringent criteria for what constitutes an acceptable mate (Kenrick et al., 1993).

Despite an overall desirability toward outrage emerging across different independent laboratories, it could be possible that the valuation of an outraged behavioral repertoire may be especially high where these studies were conducted. All four studies were conducted in the Southeastern U.S., an environment with salient honor culture norms that encourage aggressive responses toward perceived injustices (Cohen & Nisbett, 1997; Cohen, Nisbett, Bowdle, & Schwartz, 1996). Because of these norms' prevalence in the South, which appear rooted in an ability to ensure continued access to resources, expressed outrage could provide an additional cue to an individual's ability to secure resources and therefore provide for offspring. This additional signal value of aggression could be valuated to a larger degree in areas where these

norms are prevalent, which parallels previous work demonstrating that men capable of engaging others physically are particularly attractive to women with salient concerns of crime (Snyder et al., 2011). Nonetheless, women in Northern states could similarly view outraged behavior as desirable for LTM themselves, given the benevolent intention outrage ostensibly connotes; it could be possible this desirability for outrage differs at different magnitudes as a function of one's location. Future research would benefit from considering a cross-cultural comparison between Northern and Southern women in the U.S. to determine whether the honor culture augments the desirability of outraged behavior.

Limitations and Future Directions

Although our findings generally supported predictions, they were not without their limitations. One potential limitation includes a lack of systematic consideration for various manifestations of outrage. Outrage could similarly manifest as specific behaviors directed toward cheaters (e.g., third-party punishment; Jordan et al., 2016), and public assertions of one's stance without necessarily resulting in discrete prosocial behavior. This inconsistency could suggest a disconnect between attitudes and behaviors when considering mating goals, which is further evidenced by the results of Study 4. Future research would benefit from considering the interplay between both aspects of outrage more comprehensively. This could include comparing mere expression of outrage and actual behavior within the same study to determine which aspect is more desirable and if one is a more honest signal than the other. Given that outraged behaviors are a more honest signal of prosocial intent, compared to simply espousing an emotional moral stance (Van de Vyver & Abrams, 2015), it would seem sensible to predict that outraged behaviors would be more desirable than mere espousal.

The current program of research focused primarily on contextualized preferences that

may not account for salient mating interests rooted in environmental cues. Previous research indicates that individuals alter their reproductive goals when they perceive environmental threats that could impede future goal attainment, suggesting preferences for outrage could be contextually sensitive in mating domains (Griskevicius et al., 2011; Sacco, Young, Brown, Bernstein, & Hugenberg, 2012). One potential direction for future research is to consider contextual mating primes. Participants could read about an explicit STM or LTM experience before indicating their preferences for outraged targets, given that temporally activated mating motives heighten sensitivity toward mating-relevant cues (Brown & Sacco, 2018; DiDonato & Jakubiak, 2016). This study could provide experimental evidence for mating motives shaping individuals' outrage preferences. The current findings would suggest LTM-primed individuals prefer outraged targets, particularly women.

One potential caveat of the current program of research is its focus on ideal preferences rather than simultaneously considering the potential influence of mate choices (Eastwick & Finkel, 2008). Although mate preferences do reflect actual mate choice (Fletcher, Kerr, Li, & Valentine, 2014; Li et al., 2013), it would be important for future studies to have explicit empirical evidence for how espoused outrage specifically predicts choices. A future study could implement speed dating with prospective mates describing themselves as outraged and participants indicating their decision to pursue such mates (Finkel & Eastwick, 2008). It would further be important to consider utilizing ipsative scales, with participants selecting an actual mate (e.g., Jonason, Luevano, & Adams, 2012). In extending beyond mere descriptions of potential outrage in hypothetical paradigms, future work could further consider actual emotional expressions of outrage real-world environments. The current research utilized a proxy for outrage through expressions of prosocial behavior to fight perceived injustices that would be

amenable to a dating site where viewing an expression of outrage may be less possible than identifying behaviors connoting outrage (Van de Vyver & Abrams, 2015). Nonetheless, the current program of research remained limited in identifying how the espousal of these emotions predict mate preferences in an actual mating market. A speed dating study could specifically assess participants' interest in prospective mates based on their espousals of outrage.

Although the current program of research specifically addressed the desirability of espoused outrage within mating domains, future research would benefit from considering other relational domains more explicitly. For example, selection of friends nonetheless requires individuals to recognize who would best satisfy one's relational needs, with previous work demonstrating that individuals similarly employ judicious selection criteria for best friends as they do with long- and short-term mates (Krems & Conroy-Beam, in press). Friendship selection similarly operates along the recognition of another's prosociality that would enhance the inclusive fitness of group members (Eisenbruch, Grillot, Maestripieri, & Roney, 2016; Eisenbruch & Roney, in press). Future work could implement a social networking paradigm to identify the extent to which participants would like to associate with prospective friends espousing outrage while identifying friend contexts when outrage would be most desirable.

Conclusion

Moral outrage certainly possesses a powerful signaling function from which individuals can infer another's prosociality in various capacities. The current program of research demonstrates how this signal of prosociality can extend into mating domains, particularly as it relates to contexts in which benevolence is prioritized (i.e., LTM). This work further demonstrated how such a signal is perceived differently by men and women, with future work seeking to understand the full extent of this signal's prosociality in mating domains, which could

inform the basis for understanding why someone would want to demonstrate value.

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Notes

[1]TIPI Scale is available at: https://gosling.psy.utexas.edu/wp-content/uploads/2014/09/tipi.pdf

[2]When considering the reliability of the reverse-scored item as non-reversed, the reliability remained almost zero ($\alpha = 0.05$).

[3]We conducted an additional study largely replicating these basic findings while testing for potential moderating effects of attachment style. No effects emerged as a function of attachment but results from this study are available in the online supplemental materials. We additionally provide analyses for the single compassion item from the manipulation check in Studies 3 and 4 in the supplemental materials.

Target	Example Description of Activities
Outrage	On the weekend, I petition for Students for Fair Athletics. This is a letter-writing campaign for university students around the country to change NCAA policies and allow student-athletes to be fairly compensated for their work on and off the field.
Control	I am also on an intramural basketball team here. We try to play once a week when I can, but I have been dealing with a shoulder injury.

Table 1. Example descriptions of prospective mates' extracurricular activities from the mock dating site in Study 1.

Trait	$M_{Outrage}$ (*SD*)	$M_{Control}$ (*SD*)	*t*	*d*	α
Conscientiousness	6.07 (0.93)	4.54 (1.34)	8.88***	1.34	0.68
Extraversion	4.90 (1.49)	3.71 (1.48)	5.28***	0.79	0.68
Neuroticism	3.07 (1.29)	3.06 (1.03)	0.02	0.00	0.40
Openness	5.27 (1.16)	4.42 (1.31)	4.54***	0.68	0.38

Notes. *** $p < 0.001$

Table 2. Perceived levels of Big Five traits in targets in Study 3.

	1	2	3	4	5
1. Conscientiousness					
2. Extraversion	0.46**				
3. Neuroticism	-0.25**	-0.28**			
4. Openness	0.54**	0.59**	-0.36**		
5. Trust	0.47**	0.26**	-0.41**	0.43**	
6. Attraction	0.24**	0.31**	-0.24**	0.33**	0.42**

Notes. $^{**}p < 0.01$

Table 3. Bivariate correlations between candidate mediator traits, trust, and attraction in Study 3.

Target	Example Description of Activities
Outrage	It may shock you to realize this but slavery has not ended with the Civil War, as human trafficking remains an unacceptable epidemic in this country. I sneer with disdain when I see traffickers in court smugly defending their heinous actions.
Control	Several news reports are indicating these days that modern day slavery exists in the form of human trafficking. It seems incomprehensible how this can happen.

Table 4. Example descriptions of prospective mates' responses for social issues from the mock dating site in Study 4.

Trait	$M_{Outrage}$ (*SD*)	$M_{Control}$ (*SD*)	*t*	*d*	α
Conscientiousness	5.23 (1.13)	4.72 (1.18)	3.32**	0.44	0.53
Extraversion	5.07 (1.34)	3.65 (1.18)	8.36***	1.12	0.65
Neuroticism	4.65 (1.38)	3.39 (1.05)	7.67***	1.02	0.56
Openness	4.43 (1.11)	4.06 (1.20)	2.44*	0.32	0.42
Agreeableness	3.26 (1.28)	3.87 (1.16)	-3.66***	-0.49	0.39

Notes. * $p < 0.05$, ** $p < 0.01$, ** $p < 0.001$

Table 5. Perceived levels of Big Five traits in targets in Study 4.

	1	2	3	4	5	6	7
1. Conscientiousness							
2. Extraversion	0.26**						
3. Neuroticism	-0.10	0.23**					
4. Openness	0.43**	0.23**	-0.36**				
5. Agreeableness	0.09	-0.10	-0.11	0.37**			
6. Prosociality	0.50**	0.38**	0.13	0.45**	0.06		
7. Trust	0.41**	0.10	-0.25**	0.34**	0.45**	0.45**	
8. Attraction	0.25**	0.08	-0.27**	0.33**	0.30**	0.34**	0.45**

Notes. $^{**}p < 0.01$

Table 6. Bivariate correlations between candidate mediator traits, trust, and attraction in Study 4.

	Outrage	Control
STM	3.42 (2.05)	3.40 (2.00)
LTM	3.79 (2.37)	3.51 (2.22)

Table 7. Means (and standard deviations) for STM and LTM desirability of outraged and control targets in Study 4.

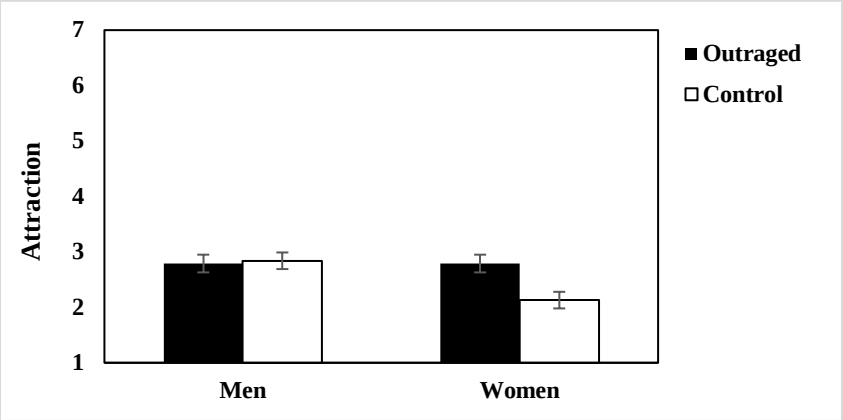

Figure 1. Men and women's attraction toward outraged and control targets (*Study 1*), with standard error bars. *Note*. Higher scores indicate greater attraction.

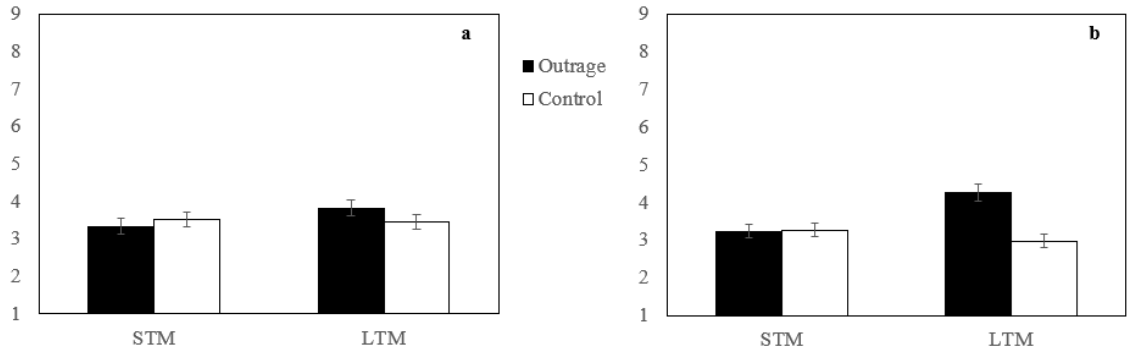

Figure 2. Men's (a) and women's (b) short-term (STM) and long-term mating (LTM) desirability ratings of outraged and control targets (*Study 1*), with standard error bars. *Note*. Higher scores connote greater desirability in the given context.

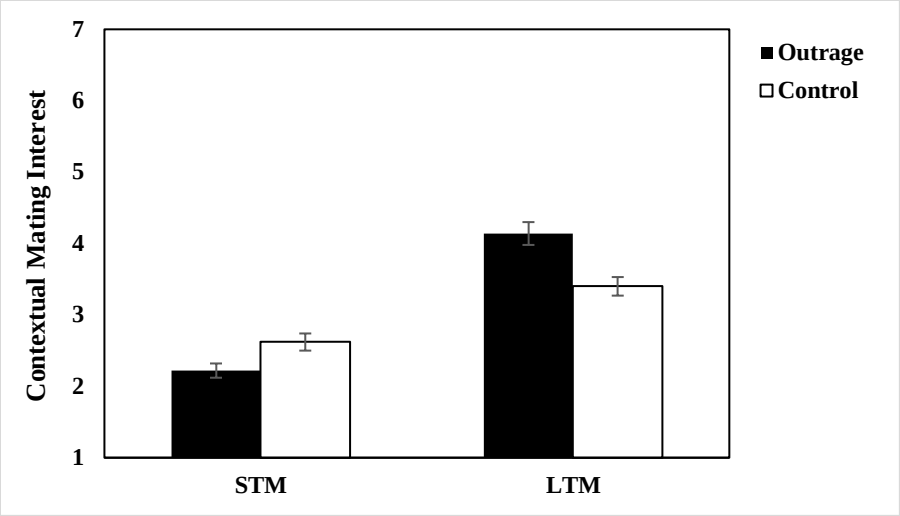

Figure 3. Perceived interest in short-term (STM) and long-term mating (LTM) for outraged and control targets (*Study 2*), with standard error bars. *Note.* Higher scores indicate greater perceived interest in the given mating context.

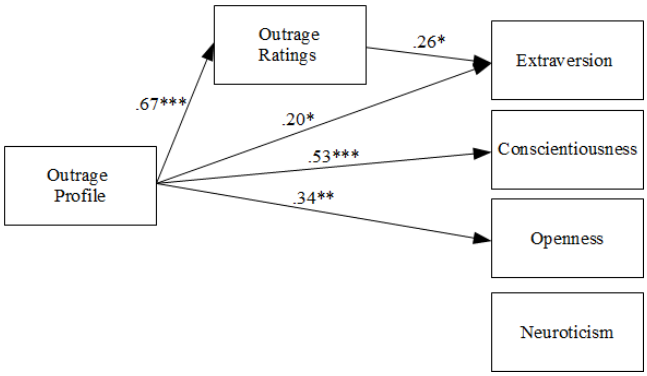

Figure 4. Mediational path model examining trait ratings as a function of outrage condition and ratings (*Study 3*).

Notes. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$ Parameters represent standardized regression coefficients and only significant paths are included; All other paths $p > .15$.

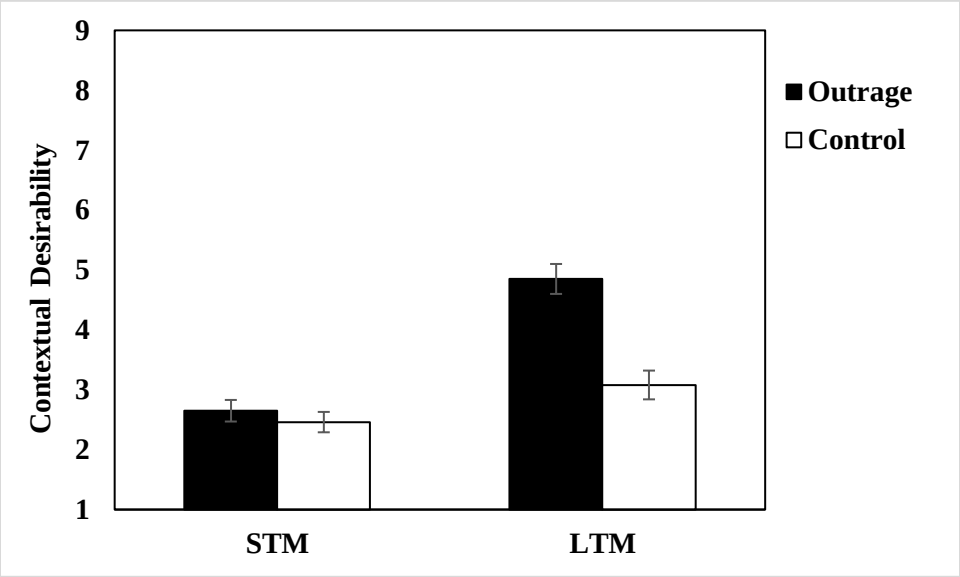

Figure 5. Contextual desirability for outraged and control targets (*Study 3*), with standard error bars. *Note.* Higher scores greater interest in a given context.

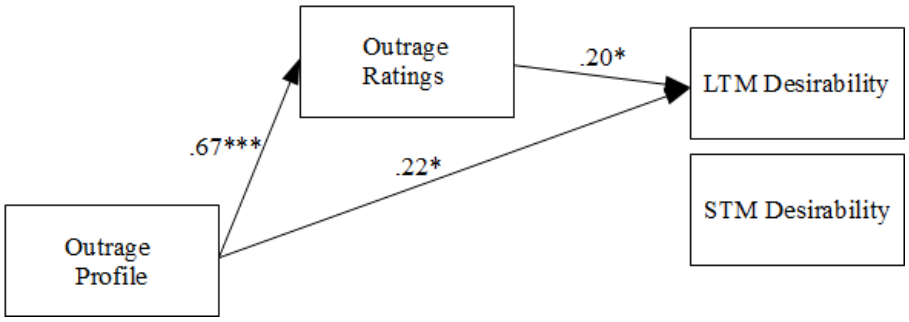

Figure 6. Mediational path model examining LTM and STM desirability as a function of outrage condition and ratings (*Study 3*).

Notes. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$ Parameters represent standardized regression coefficients and only significant paths are included; All other paths $p > .28$.