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THE IMPLICATIONS OF SEXUAL ASSAULT AWARENESS ON SEXUAL OVERPERCEPTION BIAS

by

Zach Buckner

A Thesis
Submitted to the Graduate School,
the College of Education and Human Sciences
and the School of Psychology
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

Approved by:

Dr. Donald F. Sacco, Committee Chair
Dr. Mitch Brown
Dr. Aaron Fath

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ABSTRACT

Heterogeneity has recently emerged in research investigating men's overperceptions of women's sexual receptivity, namely that such overperceptions are less robust than previously considered. Various social movements (e.g., #MeToo) could be a modern-day contextual factor that has reduced men's tendency toward overperception. In this study, participants viewed hypothetical information regarding sexual assault perpetration committed by men or women (or control information) before rating opposite-sex targets on perceived sexual interest in them and reporting individual differences in just and dangerous world. The results indicate that individuals who hold stronger beliefs in an unjust world are more sensitive to perceived threats from potential mates of the opposite sex when a mating opportunity is presented. These individuals are likely to view these potential mates as more sexually motivated and aggressive compared to those with weaker unjust world beliefs. However, due to the ambiguity present in these findings, as well as the complexity of interpreting cross-sex mind reading, further research is needed to determine how to minimize the risk of sexual misconduct.

Keywords: Sexual Assault, Error Management Theory, Sexual Overperception, dating

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BDW	Beliefs in a Dangerous World
BJW	Beliefs in a Just World

CHAPTER I – THE BACKGROUND TO SEXUAL OVERPERCEPTION BIAS

The advent of technological advances throughout human history has become increasingly influential in human courtship. Such influence is nowhere more apparent than in contemporary society. With the introduction of dating apps and social media, seeking out potential mating opportunities has become increasingly digital and virtual, at least in early relationship formation and development. Virtual dating options can be beneficial by expanding the pool of available mates beyond one's local geographical footprint. Nonetheless, specific experiential differences in virtual versus in-person dating suggests that there may be drawbacks rooted in specific evolutionary mismatches (Goetz et al., 2019; Li et al., 2018). That is, human social interaction has been historically multimodal, wherein individuals rely on various static and dynamic cues to identify others' mating intentions and whether a prospective mate's intentions align with the goals of the perceiver (Brown et al., 2022a, 2022b; Neuberg et al., 2020; Sng et al., 2020; Zebrowitz & Rhodes, 2006). Vocal tone, facial expressions, and body language are often critical signals for the perceiver to disambiguate others' intentions (e.g., Burch & Widman, 2021; Pazhoohi et al., 2022; Sacco et al., 2009; Schild et al., 2020). Various aspects of these signals may be lost to the perceiver when communicating virtually, creating greater perceptual ambiguity, and resulting in greater inaccuracy in identifying others sexual and relational intentions. This virtual communication has only been exacerbated by the COVID-19 pandemic (Kemp, 2020). Extended stay-at-home orders during the pandemic and lingering concern over variants have resulted in a precipitous decline in face-to-face dating and the proliferation of technology-mediated dating platforms as a novel selection pressure mismatched from the Evolutionary

Environment of Adaptiveness (e.g., Makhanova & Shepherd, 2020; Wiederhold, 2021). Given the typically ambiguous communication of others' intentions in a dating environment, particularly a virtual environment with fewer salient interpersonal cues to which humans would have evolved acuity, inferences of others' sexual interest may be critically influenced by social factors and individual differences. This study explores sexual perception biases in a simulated virtual dating experience (text chats) as moderated by awareness of gender differences in sexual perpetration and individual differences in just world beliefs.

1.1 Biases in Human Courtship

Human courtship requires a complex set of independent, and interacting, behavioral displays. Although accurate partner perception is desirable, erroneous inferences are possible and present an adaptive problem. Individuals could pursue a mate disinterested in the prospective suitor, or the target could miss the signals from that suitor entirely despite the latter presenting a desirable mating opportunity. When the costs of possible errors are not equivalent, evolution has shaped judgment and decision-making processes to engage in "error management." That is, individuals demonstrate a greater probability of making the least costly error in a given situation, whether those are Type I or Type II errors (Haselton & Nettle, 2006). Type I errors occur when one perceives the presence of a cue or stimulus that is not actually present or actually present at a magnitude less than that which was perceived, hence the term overperception bias (i.e., false positive). Type II errors occur when one fails to perceive the presence of a cue or stimulus that is actually present or present at an actual magnitude greater than that which was perceived, referred to as an underperception bias (i.e., false negative).

Within the context of human courtship, a sex asymmetry in error management is apparent (Abbey, 1982, 1987; Haselton & Buss, 2000). Men tend to overperceive women's sexual interest, argued to be an adaptation to avoid missing valuable mating opportunities (Brandner et al., 2021; Haselton, 2003). Conversely, women underestimate men's relational commitment, an adaptation to avoid mating with costly lower-quality suitors incapable of satisfying their relational needs related to greater investment costs associated with reproduction (Ackerman et al., 2012; Brown & Olkhov, 2015; Murray et al., 2017; but see Perilloux & Kurzban, 2015). Such biases are consistent with Parental Investment Theory (Trivers, 1972). That is, men have a less mandatory minimum investment in offspring (i.e., sperm provision), which would lead them to maximize success by identifying are large number of mating opportunities (Schmitt, 2005).

Men's proclivity toward overperceiving interest in prospective mates would motivate an interest in approaching more mates. Historically for men, the cost of missing out on a potential mating opportunity (Type I Error) would have been more costly than failing to detect female sexual interest if it were actually present. Men would have incurred fewer costs by assuming a high degree of female sexual interest, pursing that opportunity, and being rejected, than not assuming the woman has sexual intentions with them, and missing a viable mating opportunity. For women, however, whose mandatory minimum investment is conversely much greater (e.g., gestation, lactation), selection would have favored those who employ more judicious mate selection strategies to maximize their reproductive success, namely by avoiding mates unlikely to offset their greater reproductive costs. Thus, women would underperceive men's interest to impede reciprocal liking (Montoya & Insko, 2008).

This asymmetry in perceived attraction presents a subsequent evolutionary arms race, wherein men seek to display their attraction as women seek to prevent themselves from incurring costs from suboptimal mates. In this arms race, men are more likely to employ risky mating strategies to differentiate themselves from mating competitors, often through behaviors that could negatively impact their health and safety (e.g., Baker & Maner, 2008; Ronay & von Hippel, 2010; Vincke, 2016). Such risk-taking may be borne out of the increased necessity for men to engage in intrasexual competition that would make them more aggressive toward male rivals and potentially more prone to coerce women into sex when the consequences of their actions are less salient (Sacco et al., 2011).

1.2 Nuances in Perception Biases

Interestingly, men's overperception of women's sexual interest appears more nuanced than previously documented. Further investigations of sexual perception bias have showed mixed findings. Women underreport their own sexual intent, which could result in men's perceptions having a greater degree of accuracy (Perilloux & Kurzban, 2015). One's own sexual interest in a prospective mate could additionally explain this overperception, meaning sexual overperception is merely functional projection to motivate the perceiver to satisfy relevant mating goals (Lee et al., 2020; Maner, et al., 2005). An even more recent finding indicated that although men tended to perceive sexual interest more than women, this gender difference was situated in an overall *underperception* of sexual interest by both sexes (Brandner et al., 2021; but see Lewis et al., 2022). Within a signal detection paradigm model that accounts for sensitivity to target stimuli, these results indicated that the differences in perceptions of sexual interest

between men and women appeared driven more by sensitivity (i.e., accurately evaluating cues for sexual interest) and not biases (Type I errors). Taken together, these recent developments could suggest that changing landscapes of the mating market could be influencing how humans infer sexual intent.

Various situational and dispositional factors appear capable of modulating men's overperception bias to facilitate mate acquisition. Overperception biases are more prevalent among men with an unrestricted sociosexual orientation (Howell et al., 2012), which could foster men to employ riskier sexual behaviors typical of promiscuous mating strategies (e.g., Jonason et al., 2009; Kennair et al., 2012). The effective use of these strategies is most apparent among men possessing higher mate value (Boothroyd et al., 2008), which subsequently leads to greater overperception biases rooted in a recognition of their relative advantage in mate acquisition (Kohl & Robertson, 2014; Samara et al., 2021). This advantage on the mating market has been argued to facilitate a sense of entitlement among men given the concomitant physical size advantage these men enjoy (Sell et al., 2012). This power subsequently biases men to believe that women find them especially desirable (Kunstman & Maner, 2011). Nonetheless, such overperception remains a risky strategy itself that leaves a high margin for error. Promiscuous mating strategies are inherently risky despite the potential benefits they could afford, with this willingness to incur risk increasing the likelihood of men misperceiving women's signals (Jacque-Tiura et al., 2007). This could ostensibly increase the likelihood of sexual assault with men feeling relatively unconcerned about the consequences (McKibbin et al., 2008). Given the asymmetry in the committal of Type I Error between men and women, it would seem likely that sex differences would be likely as a function of personality. The conflict

of intersexual selection could make men less sympathetic toward women, especially in an online setting (Brooks et al., 2022). This antipathy toward women could similarly lead to derogation, particularly based on beliefs that the world is just and survivors of sexual assault "have it coming" (see Hafer et al., 2005). Indeed, just world beliefs heighten acceptance toward rape myths among men and women when evaluating survivors despite not viewing themselves as deserving of assault (Hayes et al., 2013). Men believe the world is just more readily compared to women, which could be rooted in their self-perceived entitlement afforded by their physical advantages and mate value (Sell et al., 2012; Westfall et al., 2019). For women, these beliefs are predictive of considerable derogation toward assault survivors when they appear ostensibly more sexually receptive (Bai et al., 2021; Brown et al., in press). These results suggest that just world beliefs could provide unique perceptions of sexual interest for men and women.

1.3 Recent Selection Pressures in Overperception Biases

Implicit in the nuance of this research is a continually evolving landscape on the mating market that could lead to historic advantages in mate acquisition to ensuring major sanctions in a modern setting (Buss, 2021). One of the most salient factors are social movements (e.g., #MeToo) to increase awareness of sexual misconduct following high-profile investigations on the inappropriate behavior of high-powered men in Hollywood in 2017 (e.g., Harvey Weinstein; Jaffe et al., 2021). A consequence of this salience was subsequently greater interest in sanction those perceived of inappropriate behavior, especially those heuristically associated with higher status (e.g., older men; Sacco et al., 2021; Szekeres et al, 2020).

This heightened social awareness may present its own novel selection pressure, as men and women may have shifted how they perceive sexual interest, particularly if the costs associated with misperception have changed as well. Women's heightened perception of men's perennial sexual desires when exposed to modern media could function to mitigate the likelihood of sexual exploitation (McDonald et al., 2019). Such acuity is likely heightened due to physical asymmetries imposed by sexual dimorphism that leave women more vulnerable to physical exploitation that fosters sensitivity to social signals diagnostic of benevolent intentions (Brown et al., 2017; Sacco et al., 2017). This acuity toward the inherent risk of intersexual contact parallels women's aversion to highly masculinized men in environments experiencing greater domestic violence (see Borras-Guevara et al., 2017). The heightened salience of the potential consequences for overperception could subsequently lead men to overcorrection their perceptions. The costs of a Type I Error have risen since the advent of this shift (e.g., sexual assault accusations, public malignment), which could result in men being less likely to pursue a potential mating opportunity. Similar aversion to these sanctions could additionally downregulate women's perceptions of men's interests beyond what was historically likely due to the low salience of women's potential for sexual misconduct and women's general aversion to risk-taking compared to men (Baker & Maner, 2008).

These social trends have likely fostered shifts in folk definitions of what constitutes appropriate sexual behaviors. This shift could include redefinitions of what constitutes sexual assault and a desire for increased sanctions against those committing sexual assault (Kessler, et al., 2020; Szekeres et al., 2020; Nodeland & Craig, 2021; Jaffe et al., 2021). An additional selection pressure emerged from evolving definitions of

assault that would favor cautious pursuit. It could change people's sensitivity to sexual cues, making men highly sensitive to the potential costs of an error, which could reflect mixed findings in recent literature (e.g., Brandner et al., 2021). Such concerns are complicated by the advent of social media that further removes individuals on the mating market from identifying potential signals of disinterest that would otherwise downregulate men's interest in pursuit. Errors could potentially be more prevalent in technology-mediated interactions (Buckner & Makhanova, 2022).

CHAPTER II – CURRENT RESEARCH

This study investigated how awareness of sexual assault perpetration affects beliefs about men or women as the primary perpetrators of sexual assault based on knowledge of perpetration rates. Such knowledge would potentially drive participants' ability to manage their errors and perceptions of sexual interest from opposite-sex conspecifics, due to the ever-evolving costs of sexual misperception (Al-Shawaf, 2016). Thus, I tasked men and women to view sexual assault statistics regarding men and women's perpetration of sexual assault as means to calibrate their awareness of potential misperceptions. All participants then assessed the perceived sexual interest of a third-party, opposite sex target, from a first-person view, after reading ambiguous text message conversations (Buckner & Makhanova, 2022).

2.1 Hypotheses

Consonant with recent selection pressures imposed by social movements, we predicted that men primed with statistics of men's sexual assault perpetration would perceive the least sexual interest from the female target. Men primed with these statistics would be more cautious about inferring sexual interest in the service of avoiding potential sanctions. We also predicted that men primed with statistics of women's perpetration towards men would overperceive the female targets sexual interest more than the control group. Given that men's just world beliefs covary with the acceptance of rape myths that would implicate women as "asking for it" (e.g., Hafer et al., 2005), we used individual differences in such beliefs as a moderator in this study. Thus, we predicted men with heightened just world beliefs would be more resistant to the influence of these statistics and simply report greater receptivity from women overall. Among women, we predicted

that the salience of men's perpetration would foster overperception of men's sexual interest in the service of avoiding possible assault (McDonald et al., 2019). Additionally, individual differences in dangerous world beliefs were included as a moderator in the study. Measuring beliefs in a dangerous world were included as research has shown that women with higher dangerous world beliefs prefer more aggressive men (Sacco et al., 2017). Thus, we predicted that women with higher dangerous world beliefs viewing male perpetration statistics would rate the male targets as generally more attractive, as that they would associate the aggression from the vignettes with the targets.

CHAPTER III – METHOD

3.1 Participants

We recruited 244 participants via Amazon Mechanical Turk (MTurk) for $1.50. An a priori power analysis indicated that 244 participants would detect small effects (Cohen's $f = .20$, $1 - \beta = 0.80$). Because this study aimed at evaluating the behavior of individuals in opposite-sex dyads without a current partner, partnered participants were disqualified in addition to those who did not report being heterosexual. Further, we excluded participants who failed the attention check, with an additional captcha item in the consent form to mitigate influence from bots that attempted to take the survey. Following eight disqualifications, our sample was 236 single participants, but after the evaluation of the sample based on the criteria discussed above, the final sample used for analysis was 222 participants (130 men, 92 women; $M_{Age} = 32.43$; 84.7% White). Nonetheless, a sensitivity analysis indicated that our final sample could sufficiently detect medium effects (Cohen's $f = .21$, $1 - \beta = 0.80$).

3.2 Methods and Procedure

3.2.1 Sexual Assault Prevalence Vignettes

Participants first viewed and completed the consent from (See Appendix A). Participants that consented then completed the provision of demographic information (see Appendix B) and were randomly assigned to view one of three fabricated news articles. Specifically, this article elucidated upon the prevalence of sexual assault perpetration against women by men or against men by women, or a control condition that reported statistics on cancer diagnoses as a similarly negative experience unrelated to sexual assault (see Appendix C for condition information).

3.2.2 Text Messages

Following the statistics, participants read five different sets of text message conversations between themselves and a new acquaintance of the opposite sex (see Appendix D). Text messages were presented in a randomized, counterbalanced order. The text messages were designed to be ambiguous to avoid possible subjective misinterpretation. Once participants read a text message conversation, they went on to answer questions on sexual interest (e.g., How interested is this person in having a one-night stand with you?) for each text message conversation. Items operated on 7-point scales (1 = *Not Interested at All*; 7 = *Very Interested*). These items were highly reliable (α=.97), and thus a composite sexual perception score was computed, where higher values are associated with greater perceived target sexual interest (M_{Grand}=5.04, *SD*= .96). The reliability for these items taken together was α=.97. For the full set of questions, see Appendix E.

3.2.3 Just World Beliefs

Following the text messages, participants completed an inventory that assessed individual differences in just world beliefs. That is, they completed the Belief in a Just World Scale (BJW; Rubin & Peplau, 1975; see Appendix F). Scores for just and unjust world beliefs were moderately correlated (r = .541, p<.001) which prompted me to treat the subscales as separate variables (Just: M_{Grand}=5.15, *SD*= .88; Unjust: M_{Grand}=5.13, *SD*= .94). Subscales had acceptable reliabilities (α>.68).

3.2.4 Dangerous World Beliefs

After the BJW scales, participants completed an inventory that assessed individual differences in dangerous world beliefs (M_{Grand}=2.97, *SD*= .40; α=.63), which is the Belief in a Dangerous World Scale (BDW; Altemeyer, 1988; see Appendix G). Participants were then debriefed (See Appendix H).

CHAPTER IV – RESULTS

4.1 Primary Analyses

I conducted a pair of 2 (Participant Sex: Male vs. Female) × 3 (Condition: Male Perpetration vs. Female Perpetration vs. Control) factorial custom ANCOVAs for perceived sexual interest and perceived aggression, respectively. Both subscales of BJW as well composite BDW scores were entered as custom covariates to test for interactive effects without having conducted parallel models using dummy codes typical of regression which could have inflated the risk of Type I Error (see Brown et al., 2019).

4.1.1 Perceived Sexual Interest

No main effects emerged in the analysis (*p*s>.45). Additionally, the inclusion of beliefs in a dangerous world and beliefs in a just world as covariates were not significant individual predictor variables (*p*s>.20). Effects were most superordinately qualified by a Participant Sex × Condition × Unjust World Beliefs interaction, $F(1, 221) = 5.36$, $p = .005$, $\eta_p^2 = .05$. My next step was to decompose this interaction with three separate subordinate analyses, one for each experimental condition. Three subordinate Unjust World Beliefs main effects emerged for perceived sexual interest. The effect for male perpetration was the smallest ($\eta_p^2 = .149$), followed by female perpetration ($\eta_p^2 = .169$), and then the control condition ($\eta_p^2 = .419$), *F*s>12.125, *p*s <.001. Additionally, three subordinate Participant Sex × Unjust World Beliefs interactions emerged for perceived sexual interest. The effect for male perpetration was the smallest ($\eta_p^2 = .187$), followed by female perpetration ($\eta_p^2 = .209$), and then the control condition ($\eta_p^2 = .428$), *F*s>7.843, *p*s <.001.

These three subordinate interactions led me to conduct a series of bivariate correlations between Unjust World Beliefs and perceived sexual interest for simple slope tests, separate both men and women in each of the three conditions (i.e., six correlations). These bivariate correlations are the functional equivalent of more traditionally utilized simple slope effects while using a standardized effect size that does not require additional interpretation. Table 1 provides these correlation coefficients. Contrary to predictions that centered specifically around both *Just World Beliefs* and wariness of the pernicious intentions of cross-sex targets, unjust world beliefs were associated with perceptions of more sexual interest in opposite-sex targets in all conditions. That is, reminders of men's perpetration weaken this association for women, whereas reminders of women's perpetration reduce this association in men**.** See Figure 1for data visualization for the relationships between perceived sexual interest and unjust world beliefs.

4.1.2 Perceived Aggression[i]

Similar to the outcome of perceived sexual interest, neither main effects nor interactions with BDW and Just World beliefs emerged (*p*s>.139). Effects were most superordinately qualified by a Participant Sex × Condition × Unjust World Beliefs interaction, $F(1, 221) = 4.52$, $p = .012$, $\eta_p^2 = .042$. My next step was to conduct three separate subordinate analyses to consider the comparisons of men and women as a function Unjust World Beliefs for each experimental condition. Three subordinate Unjust World Beliefs main effects emerged for perceived aggression. The effect for the male perpetration condition was the largest ($\eta_p^2 = .249$), followed by the control condition ($\eta_p^2 = .238$), and then female perpetration ($\eta_p^2 = .193$) *F*s>15.318, *p*s <.001. Additionally, three subordinate Participant Sex × Unjust World Beliefs interactions emerged for

perceived aggression. The interaction for male perpetration was the largest ($\eta_p^2 = .332$), followed by the control condition ($\eta_p^2 = .252$), and then female perpetration ($\eta_p^2 = .198$), Fs>7.792, ps <.001.

Much like with perceived sexual interest, I decomposed these subordinate interactions using bivariate correlations as simple slopes for unjust world beliefs and perceived aggression to discern the differences across both sexes and in all conditions (see Table 2). Unjust world beliefs were associated with heightened perceived sexual aggression in opposite-sex targets across conditions. Reminders of men's perpetration had a smaller association for women, whereas reminders of women's perpetration had similar effects for men. Overall, aggression seems to be perceived similarly to sexual interest when the world seemed unjust to participants. See Figure 2 for data visualization for the relationships between perceived aggression and unjust world beliefs.

CHAPTER V – GENERAL DISCUSSION

Results from this study did not provide support for the original hypotheses. First, the often-identified sexual overperception bias in men did not emerge in the current study, insofar as men did not overperceive target sexual interest relative to women control condition (i.e., a situation wherein sexual assault was not overtly salient). This finding nonetheless aligns with recent findings that may challenge the tenets of error management when considering a signal detection perspective (e.g., Brandner et al., 2021). The nature of the current stimuli could have additionally impeded my ability to find effects based on the fact that the recent challenges to error management findings have had difficulty in managing the appropriate levels of uncertainty from which perceivers are estimating these effects (see Lewis et al., in press; 2022). That is, the text messages used in the current study could have conveyed additional levels of certainty of what the social targets' intentions were that precluded sufficient ambiguity to motivate men's interest in disambiguating this signal (see Montoya et al., 2015).

It was additionally unexpected that men and women's perceptions of sexual proclivity and aggression were influenced by *unjust* world beliefs, rather than *just* world beliefs. Namely, these motivational inferences were heightened among those who believed the world to be unjust. This finding could suggest that wariness about injustice could foster an overall overperception. Indeed, unjust world beliefs are associated with heightened threat detection, as a means to protect oneself from harm (Lench and Chang, 2007). Although the motivation for self-protection may be costly (i.e., loss of mate acquisition), this is consistent with unjust world believers, as believing the world is unfair can be a self-handicapping strategy (Neuberg, Kenrick & Schaller, 2011; Dolinski, 1996).

The lack of sex difference could suggest that such beliefs may foster a bias in cheater detection responses to assume exploitativeness from conspecifics despite a lack of more reliable evidence of a target's trustworthiness (Cosmides et al., 2005; Haselton & Nettle, 2006). Both and women would benefit similarly from these errors in the service of self-protection.

Another interesting finding was the generally similar magnitudes in the positive correlations between unjust world beliefs and both of my outcomes. These associations could suggest that unjust world beliefs similarly foster perceptions of targets as sexually aggressive (Lench and Chang, 2007). This is consistent with error management logic, wherein individuals err toward false positives. However, the sex similarities in these inferences could actually reflect an understanding of sex-specific costs that would favor Type I Errors (for a similar discussion on cuckoldry, see Platek & Shackelford, 2006). Although women are physically smaller than men and thus can incur more physical risks of sexual exploitation (Sell et al., 2012), men could nonetheless view women's sexual aggression as costly. Women could receive idiosyncrasy credits for their aggression because of their smaller size (Hollander, 2006; Sacco et al., 2021), whereas men could view their resistance as something that could be sanctioned if they were to defend themselves physically (Douglass et al., 2020).

5.1 Limitations and Future Directions

Due to the unexpected nature of our results, several future directions become salient to overcome the limitations of my study design. The primes in the current study included information related to a college setting. Although this may be accurate for college students, non-students may not have viewed these primes as relevant to their

navigation of sexual situations. My decision to focus initially on college students was to reflect on the high incidence sexual violence on college campuses (see Nitschke et al., 2022), which could have fostered an availability heuristic to perceivers outside of college domains. Because of the potential influence of whether the targets are in college, future research would benefit from specifically considering the context of these exchanges. Additionally, individuals tend to relate their mating goals within their relative age group (Huang & Bargh, 2008; Krems et al., 2017). Future studies could further provide more age-relevant mating goals to participants across the lifespan.

Other studies with similar purposes present a salient issue of methodological heterogeneity that could explain the lack of support for predictions. For example, previous studies employed baseline ratings and non-sexual targets for comparisons (see Brandner et al., 2021; Haselton & Buss, 2000). It could be possible that our results reflect a rather subtle change in perceptual acuity that would be better detected with additional comparisons. Future research could clarify the ambiguity of the current findings by providing additional comparison points, including potential shifts in perceptions across the presentation of information or similarly valanced, albeit mating-irrelevant stimuli. Finally, it could be possible that my sample remained underpowered for a fully between-subjects design. I estimated effects using a relatively small effect size in my power analysis, although these effects could be even more subtle. This subtle effect could be further masked by the fact that my data exclusion procedures to optimize data fidelity reduced my sample size so that I had fewer participants than my initial target sample size. Future studies would benefit from oversampling to a greater degree.

5.2 Conclusion

Results suggest that individuals with higher unjust world beliefs are more aware of potential threats when a mate of the opposite sex initiates a mating opportunity, by perceiving the potential mate as more sexually interested and aggressive than lower unjust world belief individuals. However, such ambiguity in both these data, in addition to many situations of cross-sex mindreading, necessitate additional work to clarify how to reduce the likelihood of sexual misconduct.

Appendix A – Tables

Table 1.

Simple Slopes for Perceived Sexual Interest and Unjust World Beliefs by Participant Sex and Assigned Condition.

	Male Participants			Female Participants		
	t-score	Pearson's r	p-value	t-score	Pearson's r	p-value
No Perpetration	8.06	.73	<.001	5.12	.83	<.001
Male Perpetration	5.48	.69	<.001	3.56	.51	.001
Female Perpetration	4.05	.57	<.001	5.85	.73	<.001

Table 2.

Simple Slopes for Perceived Aggression and Unjust World Beliefs by Participant Sex and Assigned Condition.

	Male Participants			Female Participants		
	t-score	Pearson's r	p-value	t-score	Pearson's r	p-value
No Perpetration	5.97	.62	<.001	12.91	.71	<.001
Male Perpetration	7.94	.81	<.001	2.94	.44	.005
Female Perpetration	4.05	.57	<.001	4.94	.67	<.001

Appendix B – IRB Approval Form

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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits. The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects. Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: 22-1114
PROJECT TITLE: EMT Master's Thesis SCHOOL/PROGRAM Psychology RESEARCHERS: PI: Zach Buckner
Investigators: Buckner, Zach~Sacco, Donald~
IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited Category
PERIOD OF APPROVAL: 30-Sep-2022 to 29-Sep-2023

Michael Madson, Ph.D.
Institutional Review Board Vice Chairperson"

Appendix C – Consent Form

Informed Consent to Participate in a Research Project

Project Information

Project Title: Sexual Assault on College Campuses

Investigators: Zach Buckner

Contact Information: Participants may contact Zach Buckner (zach.buckner@usm.edu)

Research Description

You are invited to take part in a research study conducted by Zach Buckner in the School of Psychology. Any questions or concerns regarding this research may be directed to him, zach.buckner@usm.edu or the research advisor overseeing the project Don Sacco (Donald.sacco@usm.edu). This project has been reviewed and approved by the USM IRB (protocol # 22-1114).

Description of Study: In this study, you will read a brief vignette about a news report before answering questions about it. This will be followed by other scales assessing your general beliefs on fairness. You will also be asked to provide demographic information. This study will take approximately 10 minutes to complete.

Benefits: Your participation does not guarantee any beneficial results. However, it will aid in your understanding of how psychological research is conducted as well as contribute to the general knowledge in the field. You will be compensated with $1.50 for

your time, consistent with an hourly wage of $9. However, if you do not pass the attention checks within the study, you will not be compensated.

Risks: The risks associated with participation in this study are not greater than those ordinarily encountered in daily life. However, this study does asks questions related to sexual behavior, so you can choose to skip any questions and it will not impact your compensation for participating in this study.

Confidentiality: Your information will be kept confidential to the extent allowed by law and policy. Nonetheless, your name and identity will not be associated with the data you provide in any publications resulting from this study. Within these restrictions, results of the study will be made available to you upon request.

Alternative Procedures: You are free to discontinue your participation at any time without penalty of loss of benefits. You may also freely decline to answer any of the questions asked of you.

Participant's Assurance: This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions about the research should be directed to the Principal Investigator (Zach Buckner) using the contact information provided in the Project Information Section above.

Consent to Participate in Research

Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purposes, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to the principal investigator (Zach Buckner) with the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research

participant should be directed to the Coordinator of the Institutional Review Board, irb@usm.edu.

If you consent to these procedures, please click the button labeled **"Consent"** below and click **"Continue"** to start. If you do not consent, please close the window now.

Appendix D – Demographics

What is your sex?

Male, Female, Other

What is your age (in years)?

_____

What is your ethnicity?

African American/Black, Asian/Asian-American, Caucasian/White, Hispanic/Latino, Other

What is your sexual orientation?

Heterosexual, Bisexual, Homosexual, Other

What is your relationship status?

Single, In a relationship, Married

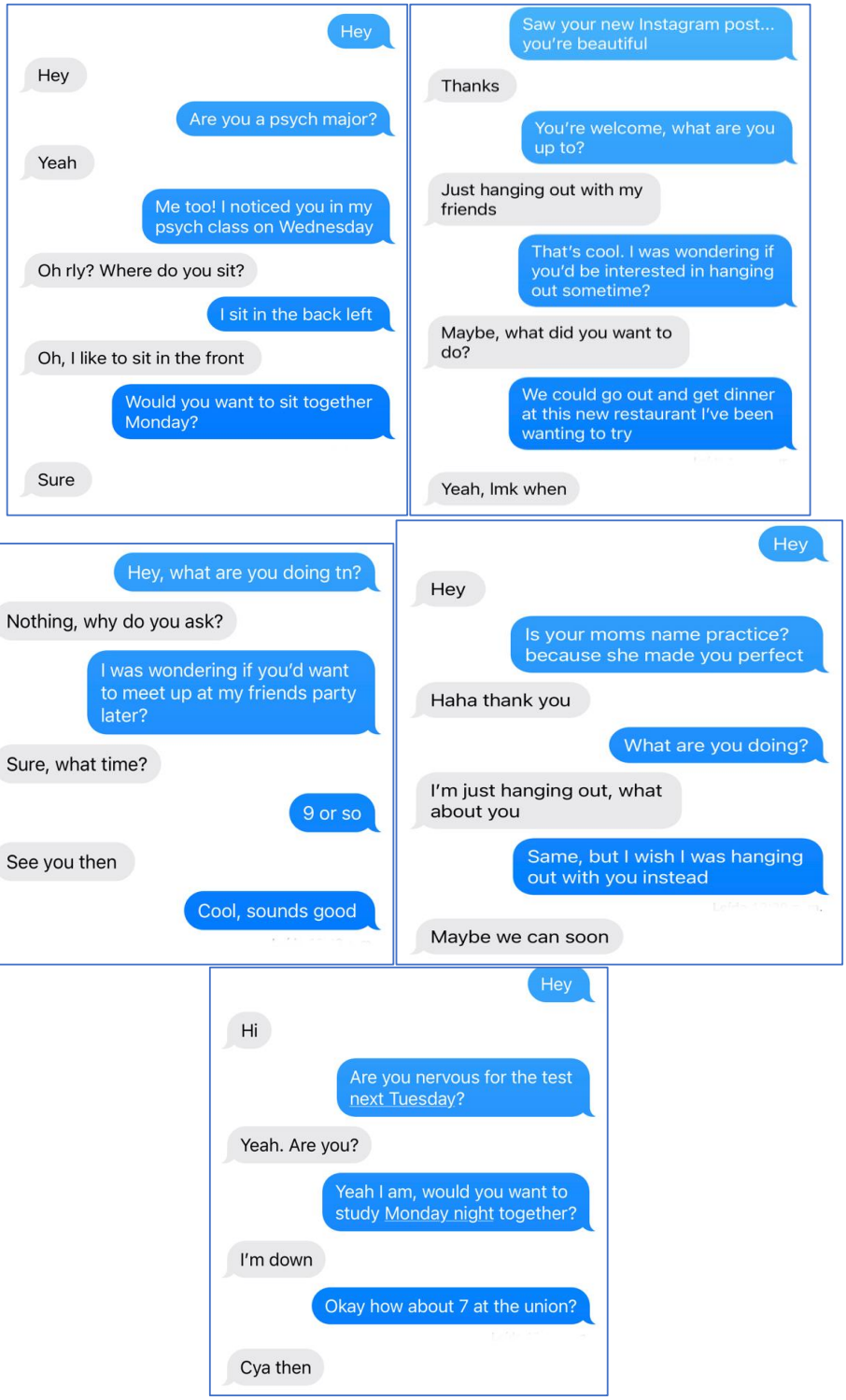
Appendix E – Vignettes

- **Male perpetration condition:** HATTIESBURG, Miss. (WDAM) – There was a report of sexual assault on the USM campus Saturday night. Officers responded to this report at a house near campus around 10:15 p.m. According to HPD, a male suspect sexually assaulted a woman at the house party occurring there. The perpetrator fled the scene before cops arrived. HPD is still seeking out more information about the suspect. They also note that this happens more than you think, with 13.2% of men committing sexual assault at some point in their life (Krahé, 2016).

- **Female perpetration condition:** HATTIESBURG, Miss. (WDAM) – There was a report of sexual assault on the USM campus Saturday night. Officers responded to this report at a house near campus around 10:15 p.m. According to HPD, a female suspect sexually assaulted a man at the house party occurring there. The perpetrator fled the scene before cops arrived. HPD is still seeking out more information about the suspect. They also note that this happens more than you think, with 7.6% of women committing sexual assault at some point in their life (Krahé, 2016).

- **Control (Cancer) condition**: HATTIESBURG, Miss. (WDAM) – Since it is Cancer Awareness Month, we at WDAM would like to remind <u>everyone</u> to get tested with their primary physician. 1.6 million Americans are diagnosed with cancer each year (CDC), and therefore it is important to have routine check-ups. Catching cancer early on can drastically increase one's ability to beat it.

Appendix F – Text Messages



Appendix G – Sexual Interest Items

How interested is this person in having a one-night stand with you?

Not interested at all (1), Uninterested (2), Somewhat Uninterested (3), Neither Interested nor Uninterested (4), Somewhat Interested (5), Interested (6), Very Interested (7)

How interested is this person in hooking up?

Not interested at all (1), Uninterested (2), Somewhat Uninterested (3), Neither Interested nor Uninterested (4), Somewhat Interested (5), Interested (6), Very Interested (7)

How sexually aroused is this person?

Not aroused at all (1), Unaroused (2), Somewhat Unaroused (3), Neither Aroused nor Unaroused (4), Somewhat Aroused (5), Aroused (6), Very Aroused (7)

How likely would this person to send a sext?

Not Likely at all (1), Unlikely (2), Somewhat Unlikely (3), Neither Likely nor Unlikely (4), Somewhat Likely (5), Likely (6), Very Likely (7)

How likely would this person be to initiate sex?

Not Likely at all (1), Unlikely (2), Somewhat Unlikely (3), Neither Likely nor Unlikely (4), Somewhat Likely (5), Likely (6), Very Likely (7)

How likely would this person be to respond positively to a sexual advance?

Not Likely at all (1), Unlikely (2), Somewhat Unlikely (3), Neither Likely nor Unlikely (4), Somewhat Likely (5), Likely (6), Very Likely (7)

How aggressive is this person's behavior?

Not Aggressive at all, Unaggressive, Somewhat Unaggressive (3), Neither Aggressive or not Aggressive (4), Somewhat Aggressive (5), Aggressive (6), Very Aggressive (7)

Appendix H – Belief in a Just World Scale

1. I've found that a person rarely deserves the reputation they have. (U)

2. Basically, the world is a just place. (J)

3. People who get "lucky breaks" have usually earned their good fortune. (J)

4. Careful drivers are just as likely to get hurt in traffic accidents as careless ones. (U)

5. It is a common occurrence for a guilty person to get off free in American courts. (U)

6. Students almost always deserve the grades they receive in school.

7. Men who keep in shape have little chance of suffering a heart attack. (J)

8. The political candidate who sticks up for his principles rarely gets elected. (U)

9 It is rare for an innocent man to be wrongly sent to jail. (J)

10. In professional sports, many fouls and infractions never get called by the referee. (U)

11. By and large, people deserve what they get. (J)

12. When parents punish their children, it is almost always for good reasons. (J)

13. Good deeds often go unnoticed and unrewarded. (U)

14. Although evil men may hold political power for a while, in the general course of history good wins out. (J)

15. In almost any business or profession, people who do their job will rise to the top (J)

16. American parents tend to overlook the things most to be admired in their children (U)

17. It is often impossible for a person to receive a fair trial in the USA (U)

18. People who meet with misfortune have often brought it on themselves (J)

19. Crime doesn't pay. (J)

20. Many people suffer through absolutely no fault of their own. (U)

Each question is rated on the following Likert scale: Strongly Disagree (1), Disagree (2), Somewhat Disagree (3), Neither Agree nor Disagree (4), Somewhat Agree (5), Agree (6), Strongly Agree (7)

Appendix I – Belief in a Dangerous World Scale

For each of the following statements, please indicate how much you agree with the statement.

Please provide a rating from 1 to 5, using the following scale:

Strongly Disagree (1), Disagree (2), Neither (3), Agree (4), Strongly Agree (5)

_____ 1. It seems that every year there are fewer and fewer truly respectable people, and more

and more persons with no morals at all who threaten everyone else.

_____ 2. Although it may appear that things are constantly getting more dangerous and chaotic,

it really is not so. Every era has its problems, and a person's chances of living a safe, untroubled

life are better today than ever before.

_____ 3. If our society keeps degenerating the way it has been lately, it's liable to collapse like

a rotten log and everything will be in chaos.

_____4. Our society is not full of immoral and degenerate people who prey on decent people.

News reports of such cases are grossly exaggerating and misleading.

_____ 5. The "end" is not near. People who think that earthquakes, wars and famines mean

God might be about to destroy the world are being foolish.

_____ 6. There are many dangerous people in our society who will attack someone out of pure

meanness, for no reason at all.

_____ 7. Despite what one hears about "crime in the street," there probably is not any more

now than there ever has been.

_____ 8. Any day now, chaos and anarchy could erupt around us. All the signs are pointing to

it.

_____ 9. If a person takes a few sensible precautions, nothing bad will happen to him. We do

not live in a dangerous world.

_____ 10. Every day, as our society becomes more lawless, a person's chances of being robbed,

assaulted, and even murdered go up and up.

_____ 11. Things are getting so bad, even a decent law-abiding person who takes sensible

precautions can still become a victim of violence and crime.

_____ 12. Our country is not falling apart or rotting from with

Appendix J – Debriefing

Thank you for participating in today's study. We hope you found this experience interesting and enjoyable.

In this study, we were interested in understanding how men and women interpret the sexual interest of text message responses after viewing statistics about sexual assault perpetration. We predicted that men, compared to women, would underperceive women's sexual interest when viewing sexual assault perpetration from women.

We additionally ask that you do not share information about this study with other students, as we do not wish to bias them if they were to participate. Instead of giving them this information, simply say that this is a study about sexual assault on college campuses.

If you have any questions about this project, feel free to contact the principal investigator, Zach Buckner (zach.buckner@usm.edu), for more information. If you or someone you know has been affected by sexual assault, you can contact the National Sexual Assault Hotline with confidential 24/7 support via phone call at 800.656.4673 or online at online.rainn.org.

Thanks again for your participation! Please click the "Continue" button in the lower right-hand corner to ensure you receive credit automatically.

Recommended readings:

Jaffe, A. E., Cero, I., & DiLillo, D. (2021). The# MeToo movement and perceptions of sexual assault: College students' recognition of sexual assault experiences over time. *Psychology of violence*, *11*(2), 209

Haselton, M. G., & Buss, D. M. (2000). Error management theory: a new perspective on biases in cross-sex mind reading. *Journal of personality and social psychology*, 78(1), 81.

Appendix K – Figures

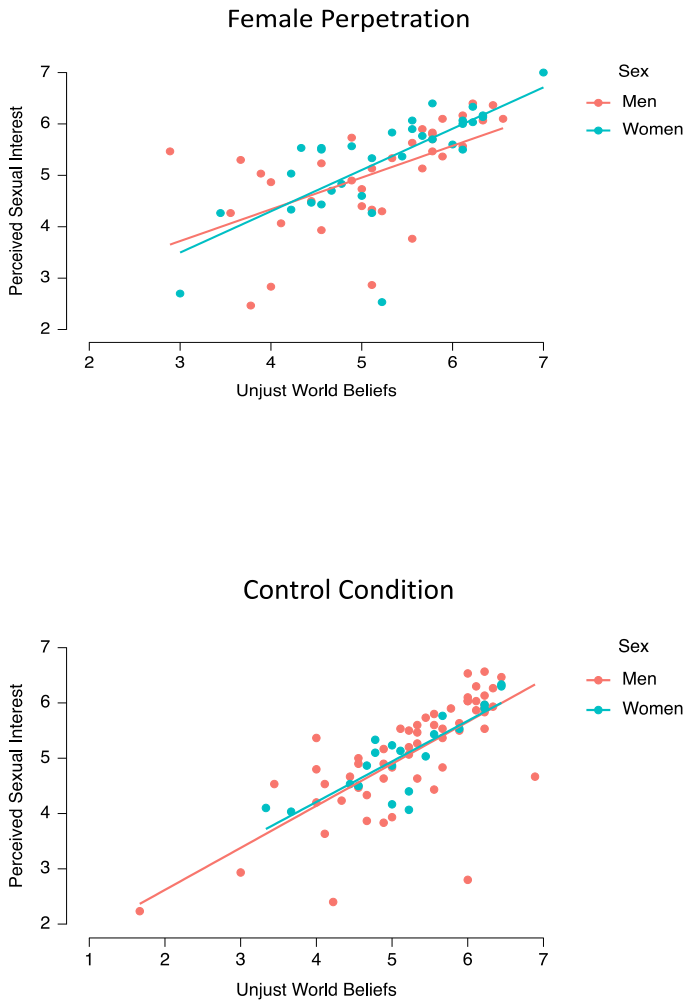


Figure 1. *Relationships between Perceived Sexual Interest and Unjust World Beliefs by Condition*

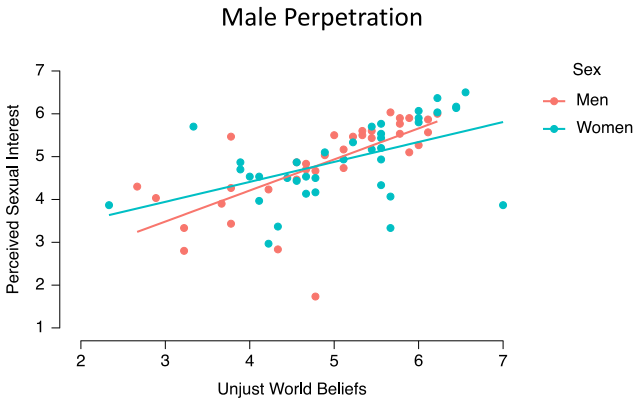


Figure 1 (continued). Relationships between Perceived Sexual Interest and Unjust World Beliefs by Condition

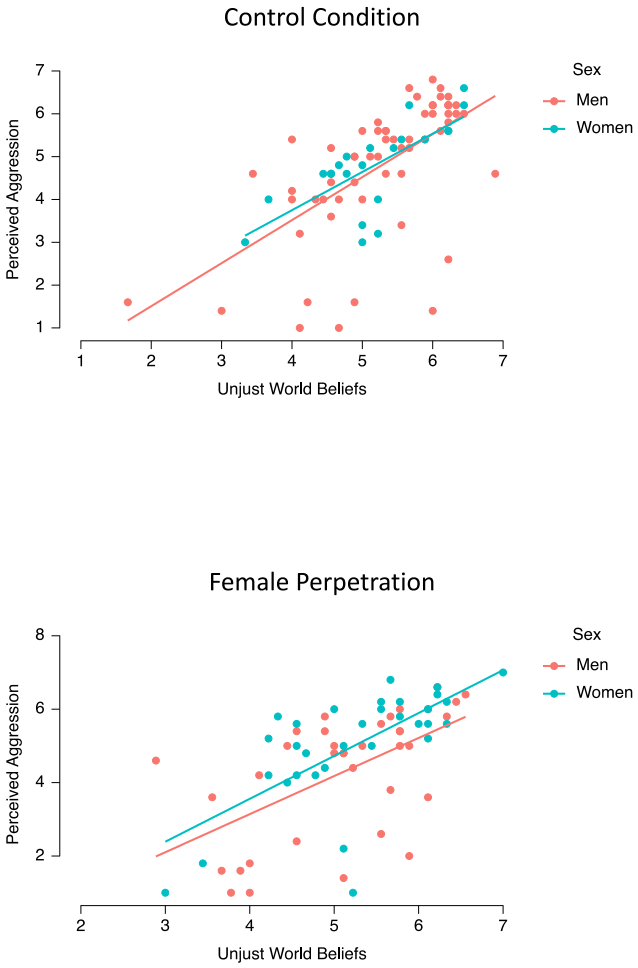


Figure 2. *Relationships between Perceived Aggression and Unjust World Beliefs by Condition*

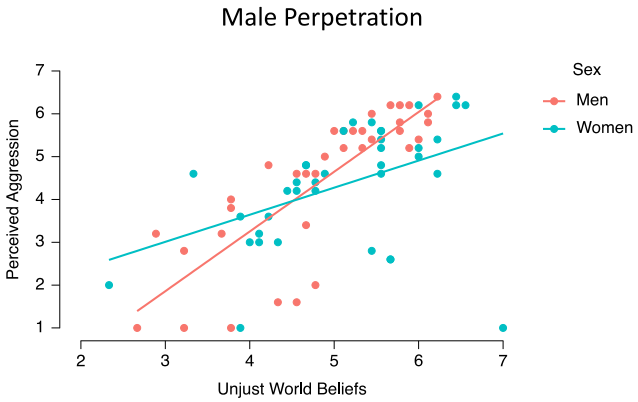


Figure 2 (continued)**.** Relationships between Perceived Aggression and Unjust World Beliefs by Condition

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