

Cognitive processes underlying the self–other perspective in women’s judgments of sexual victimization risk

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Abstract

This study examined the cognitive processes underlying self–other differences in women’s judgments of sexual victimization risk, as well as individual difference factors associated with those processes. Participants were 518 undergraduate women between the ages of 18 and 24. The majority of the women were either White (47.5%) or Hispanic (31.9%). Stimuli were 81 vignettes depicting social situations varying in degree of sexual victimization risk and potential impact on the woman’s popularity. Participants imagined either themselves (Self condition) or an anonymous undergraduate woman (Other condition) in the situations and classified each as high or low risk. Participants also completed the Sexual Experiences Survey, Sociosexuality Scale, and Rape Myth Acceptance Scale. Participants’ risk judgments were modeled using two-level, logistic regression, which provided participant-specific estimates of sensitivity and threshold parameters. Women in the Other condition, relative to the Self condition, showed lower thresholds for judging situations as risky and greater sensitivity to risk-relevant information when judging risk. Women higher in sociosexuality showed higher thresholds and reduced sensitivity to both risk and popularity impact information when judging risk, while women higher in rape myth acceptance were more sensitive to popularity

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impact information when judging risk. These findings suggest that self–other differences in sexual victimization risk judgments are due to differences in both sensitivity and threshold. Sexual assault prevention interventions for college women may be improved by addressing these cognitive processes.

Keywords

Cognitive science, ethnicity, optimistic bias, risk perception, sexual assault, sexual victimization

People judge their own risk of experiencing negative events to be lower than other people's risk of experiencing the same events, a phenomenon that often is referred to as "optimistic bias" (Weinstein, 1980, 1987; Weinstein & Klein, 1996). Importantly, optimistic bias refers only to a mean difference between self and other judgments and does not imply a difference in accuracy. This phenomenon is evident for many different types of risk, including being the victim of a crime (Perloff & Fetzer, 1986), getting cancer (Weinstein, 1980), and becoming an alcoholic (Weinstein, 1980), and is resistant to modification (Gidycz, McNamara, & Edwards, 2006; Weinstein & Klein, 1995). The purpose of the current study is to examine the specific cognitive processes underlying the optimistic bias in women's sexual victimization risk judgments.

Explanations for self–other differences in risk judgments often rely on motivational factors, such as self-enhancement or reduction of negative affect (for a comprehensive review, see Chambers & Windschitl, 2004). While motivational factors have received some empirical support, contradictory evidence suggests that they are insufficient (Chambers & Windschitl, 2004). For example, there is evidence of comparative pessimism effects, in which people view their own risk as higher than that of the group (e.g., Blanton, Axsom, McClive, & Price, 2001). Promising alternatives to motivational models include information-processing explanations (Chambers & Windschitl, 2004).

One area in which informational-processing approaches to examining the optimistic bias in risk judgments could be particularly valuable is college women's judgments of sexual victimization risk. Nearly 20% of college women experience sexual assault during their college years (Krebs, Lindquist, Warner, Fisher, & Martin, 2007), and there is evidence that college women may be at increased risk of sexual assault relative to women of the same age in the general population (Fisher, Sloan, Cullen, & Lu, 1998). In response to the scope and gravity of sexual assault on college campuses, the White House Task Force to Protect Students from Sexual Assault (2014) made prevention of and response to sexual assault on college campuses a national priority.

Some women may be at risk for sexual victimization due to deficits in risk recognition that prevent them from identifying potentially dangerous cues in social situations (e.g., Soler-Baillo, Marx, & Sloan, 2005; Wilson, Calhoun, & Bernat, 1999; Yeater, Treat, Viken, & McFall, 2010). As a result of these deficits, women may be more likely to enter or remain in situations in which they may be sexually victimized. The focus of work examining sexual victimization risk perception is not meant to intimate that victims are

to blame for sexual assault. Clearly, interventions aimed at preventing men from perpetrating sexual violence have had limited success (Anderson & Whiston, 2005; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999). Therefore, in order to more effectively protect women from harm, researchers must continue to identify risk factors that increase women's risk for sexual victimization. This is a harm-reduction approach and one that is an important compliment to research on men's sexually aggressive behavior.

Most research has focused primarily on potential global deficits in women's sexual risk perception, rather than on how their risk judgments differ when judging risk for themselves or for other women. The few studies examining self-other differences in women's judgments of sexual victimization risk suggest that women estimate less risk for themselves than for anonymous women (e.g., Chapin & Pierce, 2012; Norris, Nurius, & Graham, 1999; Untied & Dulaney, 2015; Yeater, Viken, Hoyt, & Dolan, 2009). Despite these findings, little is known about the cognitive processes underlying these self-other differences in women's sexual victimization risk judgments.

In the present study, we used signal detection theory (Green & Swets, 1966) to characterize specific cognitive processes underlying self-other differences in women's judgments of sexual risk. This approach distinguishes two processes that may influence self-other risk judgments: decisional threshold and perceptual sensitivity. The decisional threshold indicates the level of risk, or cutoff value, at which a situation is deemed risky. For example, women might employ a higher threshold when judging risk for themselves, such that fewer situations are judged to be risky, than when judging risk for others. This difference in thresholds when judging risk for oneself versus other women may contribute to self-other differences in risk judgments. Another potential cognitive process underlying self-other differences is perceptual sensitivity, which refers to the ability to detect risk cues or to distinguish levels of risk. Low levels of risk sensitivity are associated with more judgment errors, such that high-risk situations sometimes are judged to be low-risk. In contrast, high levels of sensitivity produce risk judgments that are associated strongly with the intrinsic riskiness of the situations. Thus, women may show lower levels of risk sensitivity when judging their own risk than when judging other women's risk.

In previous self-other literature, self-other differences are often referred to as "optimistic bias," though the methodology used in most studies does not allow researchers to determine whether these differences are due to a true "bias." There are two primary methods for assessing optimistic bias: direct and indirect (Helweg-Larsen & Shepperd, 2001; Weinstein & Klein, 1996). In the direct method, participants are generally asked to rate the likelihood that they will experience a negative event relative to someone similar to them. Responses usually range from *much less likely* to *much more likely*. In the indirect method, participants first are asked how likely they are to experience a negative event. Then, in a separate question, they are asked to estimate the average person's likelihood of experiencing the same event (Helweg-Larsen & Shepperd, 2001). While both of these methods allow researchers to examine self-other differences, they typically utilize only high-risk situations, which do not allow researchers to determine whether differences in ratings might be due to differences in sensitivity to different degrees of risk, rather than a bias to underestimate all levels of risk. Researchers

must examine both high- and low-risk situations to determine if self–other differences are due to sensitivity or bias. Low sensitivity implies that, relative to their own mean ratings, subjects will underestimate the riskiness of high-risk situations, because they do not recognize that they are high risk, and will overestimate the riskiness of low-risk situations, because they do not recognize that they are low risk. In contrast, a bias to underestimate risk should reduce estimates of risk across both high- and low-risk items.

With a carefully designed signal detection approach, the processes of sensitivity and bias are easily distinguished, because the expected effects of low sensitivity on risk ratings are opposite for very high- and very low-risk items, while the effects of bias are expected to be consistent for high- and low-risk items. But in a study relying on ratings of a single risky item, or a small number of high-risk items, low sensitivity and a bias to underestimate risk both predict lower ratings of risk and are therefore hard to distinguish. For example, a woman might show a high threshold for risk, such that she judges few situations to be risky, but nonetheless show substantial sensitivity to risk information, the result being that her risk judgments are related strongly to the risk information in the situations. Conversely, a woman might show little bias in average ratings of risk relative to other women or to expert judgments but still show low sensitivity in the sense that she fails to discriminate well between high- and low-risk items, relative to other women or to expert judgments. While bias and sensitivity reflect different perceptual processes, and they would have different implications for interventions to improve the accuracy of risk judgments, they can't be distinguished without sampling responses to items across a wide range of riskiness because they make similar predictions for the highest risk items.

To date, no research has applied signal detection theory to the study of self–other differences in sexual victimization risk judgments. One study utilized signal detection theory to investigate specific cognitive processes involved in women's victimization risk judgments in general (Yeater et al., 2010). Yeater, Treat, Viken, and McFall (2010) asked women to judge a series of vignettes as either high or low risk in terms of the woman in the situation having an unwanted sexual experience. The authors did not ask women to judge their own risk of having an unwanted experience. These vignettes described diverse social situations that varied in their degree of victimization risk and potential impact on the woman's popularity or social acceptance. The authors found that women with more severe victimization histories (a) had higher thresholds for determining that a situation was risky, (b) were less sensitive to risk relevant information when making explicit judgments of victimization risk, and (c) were more sensitive to popularity impact information when explicitly judging victimization risk. The authors also found that women higher in rape myth acceptance were less sensitive to victimization risk when making explicit risk judgments. This work highlights the importance of distinguishing threshold and sensitivity influences on women's risk judgments.

It also is important to identify factors that may influence self–other differences in women's victimization risk judgments. For instance, there is strong evidence that personal experience with a negative event reduces the magnitude of comparative risk judgments for the event (e.g., Helweg-Larsen, 1999; Helweg-Larsen & Shepperd, 2001; Weinstein, 1980, 1987; van der Velde, Hooykaas, & van der Pligt, 1992); yet it is unclear how much experience is necessary or how recent the experience must be for this to occur. Research examining the effects of being sexually victimized on comparative judgments

of victimization risk is limited; however, Norris, Nurius, and Graham (1999) found that victimized women, relative to nonvictimized women, rated themselves as at increased risk of victimization, but victimization history did not affect women's ratings of others' risk of victimization. The findings from the broader sexual risk perception literature have been mixed, with some researchers finding a relationship between victimization history and risk perception (e.g., Marx & Gross, 1995; Soler-Baillo et al., 2005; Wilson et al., 1999; Yeater et al., 2010), and others finding no relationship between the two (e.g., Breitenbecher, 1999; Rinehart & Yeater, 2012; Yeater, Viken, McFall, & Wagner, 2006).

Several other factors in addition to victimization history may influence the cognitive processes underlying self–other differences in women's judgments of sexual victimization risk. First, sexual attitudes may influence women's sexual victimization risk perception in general (Rinehart & Yeater, 2012; Yeater et al., 2006; Yeater et al., 2009). For example, when rating risk for vignettes depicting dating and social situations, participants with more positive attitudes toward casual sex gave lower estimates of risk than participants with less positive attitudes about such sex (Rinehart & Yeater, 2012; Yeater et al., 2006; Yeater et al., 2009).

In addition, rape myth acceptance, or the endorsement of beliefs such as some women deserve to be raped (Burt, 1980), is associated with women's sexual victimization risk judgments (Loiselle & Fuqua, 2007; Yeater et al., 2010). Specifically, in a response latency task, women higher in rape myth acceptance took longer to indicate when a man had gone too far in a hypothetical dating scenario than women lower in rape myth acceptance (Loiselle & Fuqua, 2007). Additionally, rape myth acceptance affected women's sensitivity to risk-relevant information when making explicit judgments of victimization risk, such that women higher in rape myth acceptance, relative to women lower in rape myth acceptance, relied less on risk-relevant information when judging explicitly the risk of dating and social situations. However, rape myth acceptance did not affect the threshold at which women judged a situation to be risky (Yeater et al., 2010).

Finally, aspects of social situations, such as how the women's behavior may affect her popularity or social acceptance, influence women's risk judgments (Nurius & Norris, 1995; Yeater et al., 2010). For example, more severely victimized women, relative to less severely victimized women, relied less on popularity impact information when making explicit judgments of risk in dating and social situations (Yeater et al., 2010). The inclusion of dimensions such as potential impact on the woman's popularity in stimuli used to evaluate risk judgments helps researchers isolate the source of specific information processing deficits, rather than attributing difficulty in risk judgments to global information processing deficits (Yeater et al., 2010).

Present study

The current study extends previous research by identifying specific cognitive processes underlying self–other differences in women's judgments of sexual victimization risk. Women were asked to read 81 vignettes depicting dating and social situations varying in degree of sexual victimization risk and potential impact on the woman's popularity and make explicit risk judgments for either themselves (in the Self condition) or an

anonymous undergraduate woman (in the Other condition). These data were used to differentiate between (a) sensitivity to risk-relevant and popularity impact-relevant information and (b) the threshold at which women determined situations to be high risk. We examined the effect of condition (Self vs. Other) on sensitivity and decisional threshold. We also examined a number of individual difference factors that may affect these processes, including personal experience (i.e., victimization history) and sexual attitudes (i.e., sociosexuality and rape myth acceptance) as well as the extent to which these individual-difference indices moderate the effects of condition on sensitivity and decisional threshold.

Method

Participants

Participants were 518 undergraduate women selected from the psychology subject pools from a large southwestern university and a large western university. Informed consent was obtained from all individual participants included in the study. The sample was 56.2% first year students, 92.9% heterosexual, and 100% unmarried. The sample also was ethnically diverse, including 47.5% White, 31.9% Hispanic, 3.7% Native American, 4.4% Asian, 1.2% African American, and 10.8% "Other" participants. Because the vignettes used were designed to depict dating and social situations that heterosexual or bisexual, and unmarried college women are likely to encounter, 20 women (out of the original sample of 538) who were lesbian, married, or over the age of 24 were excluded from all analyses.

Stimuli

The 81 written vignettes were developed previously to describe a wide range of situations with a variety of contextual cues that indicate risk of victimization, such as different settings (e.g., party, bar, school event), relationships with the man (e.g., boyfriend, acquaintance, stranger), and possible threats to women's popularity (e.g., pressure by men or peers to engage in risky behavior) (Yeater, McFall, & Viken, 2011; Yeater et al., 2006, Yeater et al., 2010). See Table 1 for example vignettes. The vignettes were derived from undergraduate women's qualitative descriptions of their own dating and social experiences. These descriptions then were cross validated by a separate group of undergraduate women, who evaluated how risky the situations were in terms of them ending in forced sexual activity. Finally, the descriptions and ratings were used to develop a set of vignettes describing dating and social situations that women are likely to face when interacting socially with men.

The vignettes also were further rated to ensure that they varied both with respect to victimization risk and popularity impact information. Four sexual violence experts and four graduate students in these experts' labs provided risk ratings for each vignette (i.e., risk of an unwanted sexual experience) and undergraduate raters provided ratings for popularity impact (i.e., how much the woman's behavior would influence how much she was valued, liked, or socially accepted). The mean risk rating for the vignettes was 3.10

Table 1. Example vignettes.

| Sexual victimization risk and popularity impact | Vignette |
|--|---|
| Low sexual victimization risk Low popularity impact | A woman is at home on a Thursday evening. She checks her e-mail and finds a message from a guy in her sociology class. He asks her whether she wants to meet him at the library on Sunday to study for an upcoming test |
| Low sexual victimization risk High popularity impact | You are at a party with your friends. While there, your friends discuss how all the guys at the party are there just to score, and how disgusting girls are that will go home with any guy who asks them. Your friends say that these girls are just “sluts” and “skanks.” A little later a guy who’s you’ve been extremely attracted to for a really long time, and that you really want to “hook up” with, comes up to you and asks if you want to leave with him |
| High sexual victimization risk Low popularity impact | You are asleep in your bed at home. You wake up suddenly, thinking that you heard a noise in your bedroom. You look toward you window and realize that a man is coming in through your window |
| High sexual victimization risk High popularity impact | A woman has been dating a guy for about a month. She really likes him. He’s very attractive and lots of women on campus want to date him. She’s felt kind of special that he’s chosen her rather than someone else. One night, she’s making out with him and things start to get pretty hot. She doesn’t want to have sex with him yet, but she can tell he’s really into it. He tells her that if she doesn’t have sex with him, he’ll find someone else who will |

($SD = 1.14$); the mean popularity impact rating was 2.79 ($SD = .50$). The risk ratings ($ICC = .96$) and popularity ratings ($ICC = .88$) were reliable (see Yeater et al., 2010 for a more detailed description of the stimuli development process).

Measures

Demographics questionnaire. This self-report measure asked participants for their age, marital status, ethnicity, and academic status.

Sexual Experiences Survey. The Sexual Experiences Survey (SES) (Koss, Gidycz, & Wisniewski, 1987) is a 10-item self-report questionnaire measuring incidents of sexual victimization since the age of 14. The SES uses behaviorally specific definitions of sexual assault and asks participants to indicate whether the event occurred by choosing one of two response options (i.e., no or yes). The SES possesses good internal consistency ($\alpha = .74$) and 1-week test-retest reliability ($r = .93$) and correlates well ($r = .73$) with responses obtained by an interviewer (Koss & Gidycz, 1985). Following the common scoring procedure for the SES (e.g., Koss et al., 1987; Yeater et al., 2010), participants were assigned to one of five severity categories based on the most severe victimization experience they reported having had since the age of 14 (none, unwanted contact, coercion, attempted rape, and rape). With respect to frequency of sexual

victimization, 32.6% of participants reported no history of sexual victimization, 16.4% reported unwanted sexual contact, 18.9% reported sexual coercion, 9.1% reported attempted rape, and 23% reported rape.

Rape Myth Acceptance Scale. The Rape Myth Acceptance Scale (RMAS) (Burt, 1980) contains 11 items that assess agreement with misconceptions about rape, such as some women are to blame for their own victimization. Participants rated each item using a seven-point Likert-type scale (1 = *strongly agree*, 7 = *strongly disagree*). The RMAS possesses good internal consistency ($\alpha = .80$; Burt, 1980) and test–retest reliability ($r = .79$ to $.88$; Schewe & O’Donohue, 1993b). Scores were calculated by summing participants’ responses to items; the range of possible scores is 11 to 77. Higher scores on the RMAS indicate stronger agreement with misconceptions about rape. In the current study, the mean RMAS score was 26.53 ($SD = 8.32$), and the internal consistency was $\alpha = .73$.

Sociosexuality Scale. The Sociosexuality Scale (SS) (Bailey, Kirk, Zhu, Dunne & Martin, 2000) is a 20-item self-report measure used to assess participants’ attitudes toward casual sex. The SS includes seven items from the Sociosexuality Orientation Inventory (SOI; Simpson & Gangestad, 1991) and 13 items from Eysenck’s (1976) study of the genetics of sexual behavior. The first 15 items of the SS typically are given in yes–no response format. In the current study, the SS was modified to include only the first 15 items and utilize a four-point Likert-type scale (1 = *strongly agree*, 4 = *strongly disagree*). This modified version has been used in previous research (e.g., Rinehart, Yeater, Musci, Letourneau, & Lenberg, 2014; Yeater et al., 2006). An example of an item from the SS is, “I can imagine myself being comfortable and enjoying “casual” sex with different partners.” The full scale of the SS is correlated highly with the SOI and has α coefficients of .88 for men and .85 for women (Bailey et al., 2000). Scores were created by summing participants’ responses to the items; the possible range of scores is 15–60. Higher scores on the SS indicate more positive attitudes toward casual sex. In the current study, the mean SS score was 28.86 ($SD = 7.39$) and the internal consistency was $\alpha = .88$.

Procedure

This study was conducted in compliance with the universities’ Institutional Review Boards, and informed consent was obtained from all individual participants included in the study. Participants were assigned randomly to either a Self condition ($n = 261$) or an Other condition ($n = 257$) and received one of two random vignette orders. Participants in the Self condition were asked to read the vignettes and imagine themselves in each situation. The vignettes were written in second person (e.g., You’re out at a club with your girlfriends. A guy has been paying attention to you all night . . .). Participants in the Other condition were asked to read the vignettes and imagine an average female undergraduate student in each situation. The vignettes were written in third person (e.g., A woman is out at a club with her girlfriends. A guy has been paying attention to her all night . . .). After reading each vignette, participants in both conditions were asked to

classify each vignette as either high risk or low risk with respect to how risky the situation was in terms of having an unwanted sexual experience. An unwanted sexual experience was defined as one in which they (in the Self condition) or an average undergraduate woman (in the Other condition) may be verbally or physically coerced into having sexual contact of any kind with the man. Following the rating task, all participants were asked to rate how difficult they found it to imagine the vignettes (1 = *not at all difficult*, 7 = *extremely difficult*), with results revealing that they found it quite easy to imagine the vignettes ($M = 2.15$, $SD = 1.25$). Finally, participants completed the demographics questionnaire, SES, RMAS, and SS. The risk judgment task and questionnaires took approximately 90 min to complete.

Data analytic strategy

Data first were checked for multicollinearity; no significant problems emerged. HLM 6.2 was used to fit a two-level, logistic model to participants' explicit judgments of the 81 vignettes as high or low risk, which allowed us to obtain participant-specific estimates of sensitivity and threshold parameters (DeCarlo, 1998; Yeater et al., 2010). Reported statistics are for a unit-specific model with robust standard errors. When reporting and discussing findings, the term *utilization* refers to the statistical index in the model, while *sensitivity* refers to the theoretical concept of perceptual sensitivity in signal detection theory. Similarly, the probability of making a high-risk classification is the statistical index that (inversely) corresponds to the concept of threshold from signal detection theory. Log odds were transformed into probabilities for ease of interpretation. The Level 1 predictors were the centered expert ratings of victimization risk and potential popularity impact for each vignette. For each participant, the beta weights in the Level 1 equation reflected (a) utilization of victimization risk information and (b) utilization of popularity impact information. The intercept in the Level 1 equation reflected the threshold at which the situations were classified as high risk. These estimates then became the dependent variables in the Level 2 equation. The Level 2 predictors were condition (Self vs. Other [effect coded]), victimization history (centered), sociosexuality (centered), and rape myth acceptance (centered). Two-way interactions between condition and the other Level 2 variables also were included in the model.

Results

Average threshold and utilization estimates in Level 1 equation

The average log odds of a high-risk classification was .58, 95% CI [.504, .664], indicating that 64.2% of the vignettes, on average, were classified as high risk, a result which, as would be expected given the study design, was significantly different from 0, $t(509) = 14.32$, $p < .001$, $d = 1.27$. The probability of making a high-risk classification increased as victimization risk increased, $b = 1.36$, 95% CI [1.33, 1.40], $t(509) = 71.25$, $p < .001$, $d = 6.31$, and as potential popularity impact increased, $b = .23$, 95% CI [.18, .29], $t(509) = 7.88$, $p < .001$, $d = .70$.

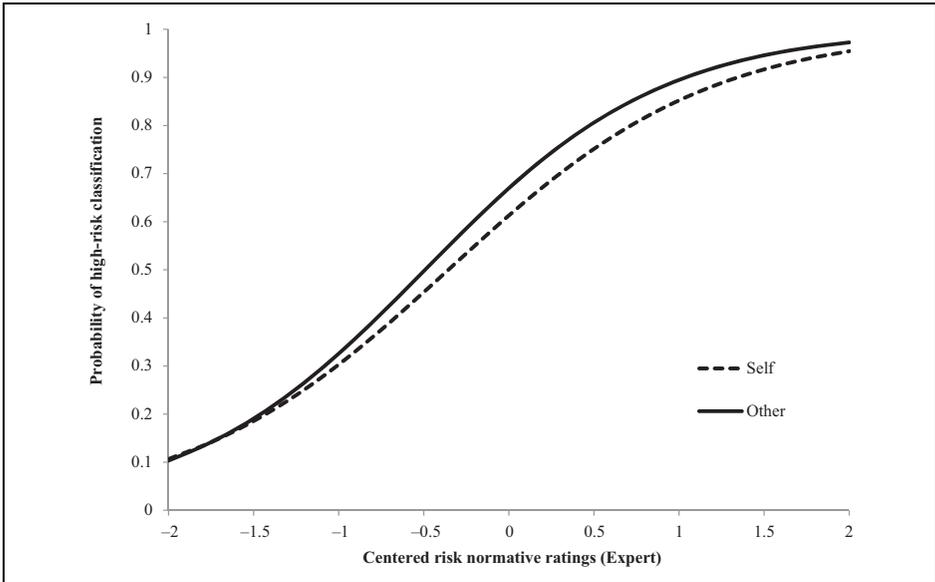


Figure 1. The effect of condition on threshold and sexual victimization risk utilization.

Predictors of threshold location in Level 2 equation

Variability in participants' thresholds for classifying situations as high risk was associated with condition and sociosexuality. Women in the Other condition were more likely to classify situations as high risk than women in the Self condition, $b = 0.12$, 95% CI [.04, .20], $t(509) = 3.01$, $p = .003$, $d = .27$. Participants in the Other condition classified, on average, 66.97% of situations as high risk, while participants in the Self condition classified, on average, 61.32% of situations as high risk. This effect is illustrated in Figure 1. The centered expert risk ratings are displayed along the x -axis, while the probability of making a high-risk classification is displayed along the y -axis. The threshold is a reflection of the predicted probability of making a high-risk classification when risk is at the average value (represented by 0 on the x -axis, because these risk ratings are centered). As the probability of making a high-risk classification goes up, the threshold for judging situations as risky goes down. The Other group had a higher probability of making a high-risk classification at 0 on the x -axis, indicating that women in the Other condition had a lower decisional threshold, classifying more situations as high risk than women in the Self condition.

Sociosexuality negatively predicted the probability of making a high-risk classification, $b = -.04$, 95% CI [-.05, -.03], $t(509) = -6.54$, $p < .001$, $d = -.58$. Participants with higher sociosexuality classified fewer vignettes as high risk than participants with lower sociosexuality. Based on the parameters of the model, participants whose sociosexuality was one standard deviation (SD) above the mean classified, on average, 57.25% of situations as high risk, while participants whose sociosexuality was 1 SD below the mean classified, on average, 70.59% of situations as high risk. This effect is

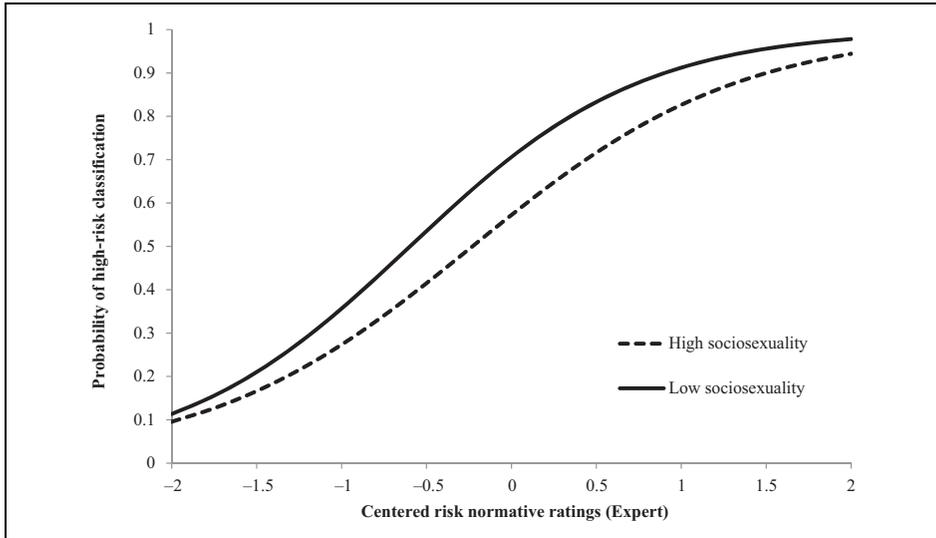


Figure 2. The effect of sociosexuality on threshold and sexual victimization risk utilization.

illustrated in Figure 2. The main effects of victimization history and rape myth acceptance on thresholds were not statistically significant. The interactions between condition and other Level 2 variables also were not statistically significant.

Predictors of victimization risk utilization in Level 2 equation

Participants in the Other condition relied more on sexual victimization risk information when explicitly rating risk than participants in the Self condition, $b = .07$, 95% CI [.03, .11], $t(509) = 3.73$, $p < .001$, $d = .33$. Participants in the Other condition showed an average victimization risk utilization score of 1.43, while participants in the Self condition showed an average victimization risk utilization score of 1.29. The relationship between risk utilization and condition is illustrated in Figure 1. The slope for the Other condition is steeper than the slope for the Self condition, indicating that participants in the Other condition relied more on risk relevant information when making explicit risk judgments than participants in the Self condition.

Sociosexuality negatively predicted utilization of victimization risk information, $b = -.01$, 95% CI [-.02, -.01], $t(509) = -5.17$, $p < .001$, $d = -.46$. Participants higher in sociosexuality relied less on victimization risk information than participants lower in sociosexuality when making explicit judgments of risk. Participants whose sociosexuality was 1 *SD* above the mean showed an average victimization risk utilization score of 1.26, while participants whose sociosexuality was 1 *SD* below the mean showed an average victimization risk utilization score of 1.47. The relationship between sociosexuality and utilization of victimization risk information is displayed in Figure 2. Participants whose sociosexuality was 1 *SD* below the mean had a steeper slope than

participants whose sociosexuality was 1 *SD* above the mean, indicating that participants lower in sociosexuality relied more on victimization risk information when making explicit risk ratings than participants higher in sociosexuality. Neither victimization history nor rape myth acceptance predicted victimization risk utilization. The interactions between condition and other Level 2 variables also were not statistically significant.

Predictors of popularity impact utilization in Level 2 equation

Participants' utilization of popularity impact information when making explicit risk judgments was associated with sociosexuality and rape myth acceptance. Participants higher in sociosexuality relied less on popularity impact information when making explicit judgments of risk than participants lower in sociosexuality, $b = -.01$, 95% CI $[-.02, -.001]$, $t(509) = -2.20$, $p = .03$, $d = -.20$. Participants whose sociosexuality was 1 *SD* above the mean showed an average popularity impact utilization score of .16, while participants whose sociosexuality was 1 *SD* below the mean showed an average popularity impact utilization score of .30.

Participants higher in rape myth acceptance relied more on popularity impact information when making explicit judgments of risk than participants lower in rape myth acceptance, $b = .01$, 95% CI $[.003, .02]$, $t(509) = 2.93$, $p = .004$, $d = .26$. Participants whose rape myth acceptance was 1 *SD* above the mean showed an average popularity impact utilization score of .32, while participants whose rape myth acceptance was 1 *SD* below the mean showed an average popularity impact utilization score of .15. Neither condition nor victimization history predicted popularity impact utilization. The interactions between condition and other Level 2 variables also were not statistically significant.

Ethnicity as a predictor of victimization risk judgment

Researchers have called for the examination of the effects of ethnicity on risk judgments in general, and for the inclusion of ethnicity as a predictor of sensitivity and threshold in victimization risk judgments specifically (Yeater et al., 2010). Thus, we conducted a supplementary analysis with the two largest ethnic groups in our sample (Hispanic and White). There were 411 women included in the analyses, 59.9% of whom reported their ethnicity as White. We retained the significant predictors from the main model and included ethnicity and the interaction between ethnicity and condition at Level 2.

Variability in participants' thresholds for classifying situations was significantly associated with ethnicity. Hispanic women were more likely to classify situations as high risk than White women, $b = 0.17$, 95% CI $[.068, .263]$, $t(406) = 3.33$, $p = .001$, $d = .33$. Hispanic women, on average, classified 68.3% of situations as high risk, while White women, on average, classified 60.8% of situations as high risk. Ethnicity did not significantly predict victimization risk utilization or popularity impact utilization. The interaction between ethnicity and condition also was not statistically significant.

Discussion

This is the first study to examine specific cognitive processes (i.e., sensitivity and decisional threshold) underlying self–other differences in women’s sexual victimization risk judgments. Several novel findings emerged from this work. Women judged more situations as high risk when imagining another woman in the situations than when imagining themselves in the same situations. Women also relied more on victimization risk information when judging risk for others than when judging risk for themselves. These findings suggest that differences in both sensitivity and threshold contribute to differences in women’s judgments of risk for themselves and for other women.

First, women judge fewer situations as high risk for themselves than for other women. This higher decisional threshold could cause women to make errors in judging social situations, because they set the threshold too high and fail to identify situations in which they are at risk. Second, women were more sensitive to, or relied more on, risk information when judging risk for others than when judging risk for themselves. When women exhibit lowered sensitivity when judging risk for themselves, they may either overestimate or underestimate their risk of victimization because they are underutilizing risk-relevant information. Decreased sensitivity or higher decisional thresholds may lead to errors in risk judgment; both processes should be considered when accounting for differences in the way women evaluate risk for themselves and for other women. These differences also may influence downstream processes, such as decision-making. For example, there is evidence from self–other decision-making research that individuals tend to respond to risk differently when making decisions for themselves than when giving advice to a friend (e.g., Fischhoff, 1992) and consider more dimensions of situations when making decisions for themselves than for others (Kray & Gonzalez, 1999). Future research may benefit from examining self–other differences in risk judgments and decision-making in conjunction with one another.

This study also identified several individual difference factors that influenced the cognitive processes underlying self–other differences in women’s risk judgments. Women with more positive attitudes toward casual sex, relative to women with less positive attitudes toward casual sex, relied less on victimization risk information when judging risk and were less likely to classify situations as high risk regardless of condition. These findings are consistent with previous research showing that more positive attitudes toward casual sex are associated with lower estimates of risk (Rinehart & Yeater, 2012; Yeater et al., 2006; Yeater et al., 2009). The current study extends previous work by differentiating between decisional threshold and sensitivity, and findings suggest that women with more positive attitudes toward casual sex evidence less sensitivity to risk-relevant information in addition to higher decisional thresholds. These women may be less sensitive to these cues because they may be more attentive to cues indicating the potential for a short-term, casual sexual relationship. Interestingly, women with more positive attitudes toward casual sex also relied less on popularity impact information when explicitly judging risk than women with less positive attitudes toward casual sex. Related work demonstrates that women with these attitudes are more likely to engage in sexual behavior without emotional closeness or commitment (Simpson & Gangestad, 1992). Thus, women engaging in this behavior may be less sensitive to public image and

social acceptance from their peers and rely less on information about popularity when judging risk.

Rape myth acceptance also was related to differences in reliance on popularity impact information when making explicit risk judgments; women higher in rape myth acceptance, as compared to women lower in rape myth acceptance, relied more on popularity impact information when judging risk. Previous research has found that women who were high in social desirability, relative to women low in social desirability, reported more acceptance of rape myths (Thereiault & Holmberg, 1998). It may be that women higher in rape myth acceptance were more sensitive to popularity impact information in the current study because they were particularly sensitive to social judgment aspects of dating and social situations.

Finally, Hispanic women classified more situations as high risk than White women but did not differ in their sensitivity to risk-relevant information. Thus, White and Hispanic women differed in the number of situations they saw as risky, but they were equally capable in recognizing gradations of risk. This suggests that ethnic differences in risk judgments are not because White and Hispanic women differ in their ability to recognize cues of risk in an ecologically valid set of dating and social situations but differ instead in the decisions they make based on that information. There has been very little prior research establishing a link between ethnicity and sexual victimization risk judgments in general. This may be due in part to insufficient samples of ethnically diverse participants in prior research. The large and diverse sample is a major strength of the current study.

While there were several novel findings in this study, a few findings were not statistically significant. For example, there was not a significant effect of victimization history on reliance on risk or popularity information or on thresholds when explicitly judging risk in either the Self or the Other condition. This is inconsistent with previous research, which found that more severely victimized women were less sensitive to victimization risk information, more sensitive to popularity impact information, and showed higher thresholds than less severely victimized women when explicitly judging risk (Yeater et al., 2010). There also was no effect of rape myth acceptance on reliance of risk information when explicitly judging risk, although this relationship was found in previous work (Yeater et al., 2010). However, it is somewhat difficult to compare findings from this study to previous work due to methodological differences between the previous study and the present study. In the previous study, participants completed a prototype classification task and a category learning task prior to the explicit categorization task. In the prototype classification task, participants read two prototype vignettes (e.g., a high risk/low popularity situation and a high popularity/low-risk situation) and then classified each of 24 vignettes as more like one of the two prototypes. In the category learning task, participants classified 16 vignettes into one of two categories, which were labeled arbitrarily as Categories V and N. They received feedback based on expert ratings for either victimization risk or popularity impact. Participants viewed each of the vignettes, indicated the category to which it belonged, and received feedback about whether their classifications were correct or incorrect. Participants were not told the basis for the feedback.

In the current study, we also found no interaction between victimization history and condition. This contradicts previous findings relating personal experience to a reduction

in optimistic bias (e.g., Helweg-Larsen, 1999; Helweg-Larsen & Shepperd, 2001; van der Velde et al., 1992; Weinstein, 1980, 1987). One possible reason that victimization history did not moderate the self–other effect in this study is that information about when women’s victimization experiences occurred was not collected. Though personal experience has been shown to influence the optimistic bias in previous research, it is not clear how long this effect might last. Most studies have examined events that happened very recently or within a matter of months (e.g., Helweg-Larsen, 1999), but some women’s sexual victimization experiences may have been several years prior to the study, which may reduce the effect of personal experience on risk judgments. This study also differs from previous research in the way that women were asked to judge risk. Generally, women have been asked to evaluate the likelihood of a negative event occurring; in the current study, women were asked to judge the riskiness of specific situations. It may be that previously victimized women judge the overall likelihood of being victimized as higher but do not judge more situations as high risk. Future research should measure the context and proximity of sexual assault experiences in order to better determine the relationship between sexual victimization history and optimistic bias.

It is important to note that factors related to ethnicity (e.g., acculturation, religiosity, and socioeconomic status) that may influence risk judgments were not measured in this study. For instance, higher degree of identification with Latino culture may reduce risk for sexual victimization (Sabina, Cuevas, & Schally, 2013). More research is needed to determine how ethnicity or factors associated with ethnicity, such as acculturation, may be linked to the cognitive processes underlying risk judgments. If there are reliable ethnic differences in thresholds of victimization risk judgments, intervention programs may need to be tailored to better address these differences (Goldsmith, Hall, Garcia, Wheeler, & George, 2005).

Research implications

Findings from the current study have important implications for sexual assault prevention interventions. Women who estimate less risk for themselves may be at increased risk of victimization, as they may be more likely to enter or stay in risky situations and feel more capable of handling these situations, thus engaging in fewer self-protective behaviors (e.g., Gidycz et al., 2006; Nason & Yeater, 2012; VanZile-Tamsen, Testa, & Livingston, 2005).

Researchers have noted the importance of changing women’s assessments of their own risk as part of sexual violence prevention efforts (Gidycz et al., 2006), and risk assessments are not easily modified through instruction alone (Gidycz et al., 2006; Weinstein & Klein, 1995). The current study extends previous research examining self–other differences in women’s sexual victimization risk judgments by identifying specific cognitive processes underlying these differences, which may provide promising prevention intervention targets. Most current college sexual assault prevention programs utilize a universal approach; however, findings from this study suggest that selective prevention interventions may be more appropriate because self–other differences in the current study were associated with individual differences in sensitivity and decisional threshold. A selective approach utilizing individual active learning and performance-based tasks

may better address these issues specifically and reduce self–other differences in risk judgments (Yeater et al., 2010). In previous research, women who learned about sexual victimization risk in a category learning task became more sensitive to sexual victimization risk when asked in a subsequent task to make explicit risk judgments (Yeater et al., 2010). Thus, category learning tasks might enhance women’s sensitivity for estimating their own risk for victimization. Of course, longitudinal studies would be necessary to examine how long these processing changes last and whether such changes decrease women’s victimization risk.

Intervention programs could change women’s thresholds for risk by providing individualized feedback about their personal risk of victimization based on information about their current dating and social behaviors (Yeater et al., 2010). Related work using personalized feedback to reduce college women’s alcohol use and increase their safe sex practices has shown promise in producing behavior change (Chernoff & Davison, 2005; Neighbors, et al., 2010). Selective intervention programs that utilize active learning and performance-based tasks and individualized feedback may provide a promising new avenue for sexual assault prevention.

Limitations

There were some limitations to the current research. First, the sample consisted of undergraduate women in psychology classes. While college women are at particularly high risk of sexual assault (Krebs et al., 2007), it is unclear how the findings of this study generalize to women who do not attend college. Further, college women in psychology classes may be more aware of concepts such as optimistic bias than other college women or women who do not attend college. However, given the between-subjects design of the study, it is unlikely that responses from students with a familiarity with optimistic bias would affect the interpretability of the findings. Finally, the task was designed to sample the decision-making faced by heterosexual/bisexual college women in social interactions with college men, and therefore the results may not generalize to the many other situations in which women are subject to sexual offenses by men.

Clinical and policy implications

A more thorough understanding of the cognitive processes underlying self–other differences in women’s judgments of sexual victimization risk not only informs our understanding of perspective differences when making these judgments but also may have broader implications in understanding the optimistic bias in other areas. The optimistic bias is ubiquitous for a variety of serious health risks such as getting cancer and becoming an alcoholic (Weinstein, 1980), but research has yet to apply a signal detection approach to judgments of these risks. The current study design could be used to improve investigations of the optimistic bias in health risk judgments by distinguishing between threshold and sensitivity. This could expand our understanding of optimistic bias and aid in the development of more effective prevention interventions for a variety of health risks. Such interventions may utilize targeted, individualized training aimed at

modifying sensitivity and threshold in order to reduce the optimistic bias and improve risk judgments.

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