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The Role of Sexual Arousal and Overperception of Sexual Intent Within the Decision to Engage in Sexual Coercion

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Abstract

Sexual coercion is a significant problem on college campuses despite numerous attempts to better understand and prevent it. Some criminological research has examined the role of sexual arousal in decisions to use coercion and force, while psychologists have studied how overperception of sexual interest relates to coercive behaviors. The current study combines these two lines of research to examine whether sexual arousal increases the perception of sexual interest in a hypothetical coercion scenario. A sample of 387 college males were randomly placed into arousal and control conditions and asked to watch either erotic material or a lecture and complete questions regarding a common social dating scenario. Bivariate and multivariate results indicated significant relationships between sexual arousal and overperception of sexual intent with the decision to engage in sexually coercive behaviors, as well as a mediation effect. The implications for theory and sexual assault prevention are discussed.

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Introduction

Finley and Corty (1993) estimated that one third of female college students will be victims of a sexual assault by the time of their graduation. Frazier et al. (2009) reported that 27% of women in their four-university undergraduate survey experienced unwanted or uninvited sexual attention and these estimates are likely conservative, given that sexual assaults on college campuses are chronically underreported. Research shows that a number of sexually coercive tactics (including those that would be classified as crimes, such as forced sexual intercourse) are also prevalent among college student populations (B. S. Fisher, Daigle, & Cullen, 2010; Palmer, McMahon, Rounsaville, & Ball, 2010; Struckman-Johnson, Struckman-Johnson, & Anderson, 2003). A number of criminological studies have attempted to understand the correlates of sexual coercion, by examining the impact of sexual arousal on the likelihood of a range of sexual coercive behaviors (Ariely & Loewenstein, 2006; Bouffard, 2002, 2011; Loewenstein, Nagin, & Paternoster, 1997).

Often, these studies have proposed that arousal may indirectly influence coercion by altering the perception of the potential costs and benefits of sexual coercion, framed within a rational choice perspective. Simply put, the rational choice model of criminal decision making suggests that offenders weigh the costs and benefits as they decide whether to engage in a crime (Cornish & Clarke, 1986), although having been derived from economics the rational choice model has been used to explain everyday consumer decision making (Becker, 1968), as well as forms of deviant behavior (e.g., corporate price fixing, Piquero, Exum, & Simpson, 2005; academic cheating, Tibbetts, 1999; sports doping, Strelan & Boeckmann, 2006). In the past decade, both Daniel Nagin (2007) and Frank Cullen (2011) have encouraged scholars to pay more attention to the role of choice in criminological theorizing and in particular to how emotions can impact decision making. In addition, Cullen (2011) suggested that increased attention should be paid to the role of contextual or situational factors that influence how individuals make decisions—that is, how individuals are "placed into, choose, negotiate, and are constrained by" various contexts (p. 312).

In line with Cullen's (2011) call for more attention to situational factors, the individual's perception of a potential partner's willingness to engage in sexual activities can be an important contextual influence on sexual coercion. A number of studies, mostly within the psychology literature, have examined how individuals perceive a potential partner's willingness to engage in sexual

activities (Abbey, 1982; Farris, Treat, Viken, & McFall, 2008; Kunstman & Maner, 2011; Malamuth & Brown, 1994) and how this perception or misperception influences the likelihood of sexual coercion. The current study seeks to bring together these two lines of research, criminological and psychological, to examine how sexual arousal may impact the perception of sexual intent in a possible partner and how that altered perception may then relate to hypothetical intentions to engage in a range of sexual coercion tactics.

Errors in Perception of Sexual Intent

Abbey (1982) offered one of the earliest examinations of the misperception of sexual intent, finding that it was more likely among males than females. In Abbey's (1982) study, male and female college students directly interacted with one another in a "conversation task," while also being surreptitiously observed by another male and female college student. Her results revealed that males (participants and observers) rated the female conversation participant as more promiscuous and seductive than did females. Since that time, a number of studies have examined how misperception of sexual intent influences the likelihood of sexual coercion (see Farris et al., 2008, for a recent review of this literature).

In some cases, researchers have investigated this phenomenon using methods in which two study participants directly interact with one another (e.g., Abbey, 1982) to assess the "misperception" of sexual intent, that is, any difference between the level of sexual interest being expressed by one individual and the level of intent perceived by the other. In other cases (e.g., Kunstman & Maner, 2011; Malamuth & Brown, 1994), researchers have investigated the "overperception" of sexual intent, by using methods in which one research participant either interacts with a confederate or perceives sexual intent from another presented in a hypothetical scenario or in a video. Regardless of the methodology used to assess the perception of sexual intent, existing research has generally shown that errors in the perception of sexual intent (i.e., the inability "to distinguish sexual interest from platonic interest"; Farris et al., 2008, p. 49) predict the likelihood of sexual coercion (Abbey, McAuslan, & Ross, 1998; Farris, Viken, Treat, & McFall, 2006; Muehlenhard & Linton, 1987; Shea, 1993).

Research in this area has also examined individual-level correlates of the inaccurate perception of sexual intent, including the extent to which the individual holds rape supportive attitudes (Abbey et al., 1998; Farris et al., 2006, 2008) and traditional masculinity or sex role attitudes (T. D. Fisher & Walters, 2003; Jacques-Tiura, Abbey, Parkhill, & Zawacki, 2007), as well as past sexual experiences and past experience with sexual coercion, in particular

(Abbey, Parkhill, Jacques-Tiura, & Saenz, 2009; Bondurant & Donat, 1999; Farris et al., 2006). Finally, a number of studies have examined various contextual factors that can influence inaccurate perception of sexual intent, including the type of clothing women wear (Abbey, Cozzarelli, McLaughlin, & Harnish, 1987; Koukounas & Letch, 2001), certain dating behaviors (e.g., going to the man's residence; Koukounas & Letch, 2001; Muehlenhard, 1988), and the male's alcohol consumption (Abbey, Ross, McDuffie, & McAuslan, 1996; Abbey et al., 2009; Jacques-Tiura et al., 2007).

While there is a large body of research examining these individual and contextual correlates of men's likelihood to mis- or overperceive sexual interest among women, only a few studies have examined how arousal and perceptions of the other person each relate to coercion (Bernat, Clahoun, & Adams, 1999; Davis, Norris, George, Martell & Heiman, 2006; Regan, 1997; Wilson, Holm, Bishop, & Borowiak, 2002). In addition, only one (Maner et al., 2005) study could be located that has specifically tested the idea that sexual arousal may impact the perception of intent. At the same time, in both criminological tests of rational choice theory, and in research on human decision making generally, a number of studies have examined the indirect role of sexual arousal in the decision to engage in sexually coercive behaviors via altered consequence perceptions (Ariely & Loewenstein, 2006; Bouffard, 2002, 2011; Loewenstein et al., 1997). Generally, these studies have demonstrated that the state of sexual arousal increases the individual's perception of the benefits of engaging in coercion (e.g., experiencing sexual pleasure) and may also decrease the otherwise deterrent impact of perceived sanctions (e.g., being arrested) among those who are aroused. The current study seeks to integrate these various existing lines of research to examine the impact of sexual arousal on college-aged men's perception of a woman's sexual intent, and also how these factors influence the likelihood of sexual coercion.

Sexual Arousal and Decision Making

In summarizing a large body of existing research on human decision making from diverse disciplines, Loewenstein (1996) described several ways in which visceral states (sexual arousal included) may influence the decision-making process. First, these states can focus the individual's attention on those factors that are consistent with resolving the state itself. For instance, "visceral factors . . . focus attention and motivation on activities . . . associated with the visceral factor" (p. 274). In other words, when hungry we focus on eating food and when tired we focus on sleeping, each to the exclusion of other considerations. One would thus expect that sexual arousal would focus the individual's attention on the possibility of obtaining sexual satisfaction.[1]

Loewenstein (1996) also described how visceral states create a "good-specific collapsing of one's time-perspective toward the present" (p. 275), so that individual's attention is focused on the short term. Finally, Loewenstein suggested that "intense visceral factors tend to narrow one's focus inwardly—to undermine altruism" (p. 295). Aroused individuals then would be expected to pay less attention to the concerns of others, as those concerns might serve to inhibit their likelihood of resolving the visceral state.

Based on Loewenstein's (1996) discussion, one would predict that states of heightened sexual arousal might increase the perception of a potential partner's level of sexual interest. As part of a study including two separate experiments, Maner and colleagues (2005) examined a sample of 105 undergraduate students and found that among males, those who were randomly assigned to view a "romantic" film clip were more likely to infer "sexual arousal" in the faces of females presented in a series of photographs. The same effect was not seen among the females involved in this study, a result that Maner and colleagues reported was consistent with other studies showing that only men over-estimate the level of sexual interest of those of the opposite sex. Maner et al. (2005) also suggested that their results support the notion that "activating specific goals and emotions should lead observers to systematically perceive . . . targets in ways that could facilitate goal-consistent behavioral responses" (p. 75).

This conclusion matches the propositions offered by Loewenstein (1996) that sexual arousal states will focus the individual on factors related to the resolution of the state (i.e., attributing sexual interest to potential partners and seeking sexual satisfaction). Ditto, Pizarro, Epstein, Jacobson, and MacDonald (2006) also empirically demonstrated this process, using a sample of 23 male undergraduate students. They found that individuals experiencing immediate states of sexual arousal (after watching a provocative video clip) provided higher ratings of the sexual attractiveness of a potential partner than did non-aroused participants.

Visceral Factors in Criminology

While much of the research on the role of emotions and visceral factors in decision making has been conducted in other fields (e.g., human decision making, psychology, economics), there has been a growing recognition that current criminological theorizing could also benefit from increased attention to the role of emotion in offender decision making (Cullen, 2011; Nagin, 2007). Writing from the rational choice perspective in criminology, Bouffard, Exum, and Paternoster (2000) proposed that not only could emotional and visceral states be considered as potential costs and benefits themselves within

the offending decision but also that these states could also influence the decision-making process itself. Thus, emotional/visceral states like sexual arousal have been conceived of as contextual or situational influences on criminal decision making. In fact, in a number of studies, emotional/visceral states have been found to influence decision making through a mediation process whereby these emotional states increase the perceived rewards, with these altered perceptions then increasing the likelihood of criminal behavior (Bouffard, 2002, 2011; Carmichael & Piquero, 2004; Loewenstein et al., 1997).

In one of the earliest studies of the role of arousal in sexual decision making, Loewenstein and colleagues (1997) experimentally manipulated the level of sexual arousal among a sample of 80 male undergraduate students and then presented them with a hypothetical "date rape" scenario. They found that arousal was related to the likelihood of engaging in sexually forceful behaviors and that arousal was also significantly related to two measures of perceived "benefits" of sexual forcefulness. Using a method similar to that of Loewenstein and colleagues, Bouffard (2002) examined the role of arousal in decision making related to sexual coercion using a sample of 129 undergraduate males. Bouffard (2002) found that the level of sexual arousal was related to male students' perception that experiencing sexual pleasure would be a salient factor in their decision to be sexually coercive. Bouffard (2011) reanalyzed the same data set and found that while arousal level did not alter cost perceptions, cost considerations only exhibited significant deterrent effects among those with lower arousal levels.

Ariely and Loewenstein (2006) examined the influence of sexual arousal on several attitudes, preferences, and behaviors related to sex, using a sample of 35 male undergraduate students. They found that arousal increased the students' ratings of how appealing various sexual activities and stimuli were (e.g., sex with an older woman, an underage girl, an animal, a person the participant hated, etc). In this case, it seems that arousal may have had the hypothesized effect of focusing the person's attention on the potential attractiveness of these items. Ariely and Loewenstein also found that arousal increased the reported likelihood of engaging in various coercive tactics to obtain sex, including trying to drug or intoxicate a date.

Current Focus

A number of studies (Ariely & Loewenstein, 2006; Bouffard, 2002, 2011; Ditto et al., 2006; Loewenstein et al., 1997) have attempted to examine whether sexual arousal has indirect influences on sexual coercion by focusing the individual's attention on factors consistent with the resolution of the

state of arousal. In addition, many studies outside the field of criminology have examined the role of visceral factors in other forms of decision making (from consumer behavior to pain management in childbirth; see Loewenstein, 1996; Loewenstein & Lerner, 2003, for reviews). Most of the studies in criminology have been framed within a strict rational choice framework and as such, have focused on arousal's influence on the perceived certainty and severity of various costs and benefits; however, they have not examined the influence of arousal on the perception of contextual factors, in particular the perception of sexual interest. At the same time, research on overperception of sexual interest within the field of psychology has yet to thoroughly examine how arousal may impact such perceptions (except see Maner et al., 2005).

Based on the previous literature, the current study will examine the potential attention focusing effects of sexual arousal, as it relates to the hypothetical likelihood of utilizing sexually coercive tactics. Hypothesis 1 anticipates that those in the arousal condition will report higher likelihood of engaging in a range of potential sexually coercive behaviors. This hypothesis will also be investigated in relation to the self-reported level of sexual arousal, which should be positively related to coercion likelihood (as well as by arousal condition). Hypothesis 2 proposes that those in the arousal condition will report higher perceptions of the woman's sexual interest (as measured by the participant's perceptions of the scenario female's willingness to engage in sexual relations, and of her level of sexual pleasure during the scenario). This hypothesis will also be investigated using the self-reported level of arousal, which should be positively related to overperception of intent. Finally, Hypothesis 3 suggests that overperception of the woman's sexual interest will mediate the relationship between sexual arousal (measured experimentally and with self-reported sexual arousal) and sexual coercion likelihood.

Method

Sample

A sample of 387 male undergraduate students enrolled in several introductory criminal justice, criminology, and psychology classes were surveyed for this study. Six males identified themselves as homosexual, and their reported arousal levels were substantially different from those who provided other sexual identifications. These six individuals, as well as a number of others (n = 27, 7%) who failed to complete all of the items being examined in this study, were removed from the sample (resulting n = 354). Those individuals who completed all questions did not differ on age, race, ethnicity, arousal level, victim perceptions, or average coercion likelihood, relative to those

who failed to complete all of the relevant items (results not presented, but available upon request). Results presented from this point forward refer to the final sample of 354 participants. The average age among the final sample was 22.0 years (SD = 4.9). This sample was predominantly White (76%), while 16% were African American and 15% were self-described as Hispanic. This sample generally matches the wider university population from which it was drawn, in terms of race, ethnicity, and age. For instance, the university population is 74% White, 19% African American, and 18% Hispanic, with an average age of 24 years. The current sample includes students solicited from introductory-level social science classes, thus the somewhat younger age relative to the university population.

Procedure

Criminology/criminal justice professors were asked to announce a study on "College Student Decision Making" in their classes and to offer extra course credit for students' participation. All participants were then emailed a solicitation describing the study as one approved by the university Institutional Review Board (IRB). The email invitation also provided informed consent information, including that respondents may be asked to view an erotic video. Students who volunteered to participate were directed to click a link at the bottom of the email invitation that took them directly to the online survey site. Students in psychology classes at this university are required to participate in research projects as part of their credit for various courses within that major. These students can locate and access currently operating studies via an online system. The present study was listed within this system, and psychology students interested in participating clicked a link within that system that would take them to the survey questions, after first also being informed that they might be asked to view an erotic video. Students were randomly assigned to either the arousal (i.e., erotic video) or non-arousal (control video) condition only *after* they had agreed to participate in the study, so as to reduce potential selection biases introduced by participants dropping out of the study after learning of their group assignment.

Measures

Arousal manipulation. Participants were asked to view either a 6-min segment of an arousing video (depicting a White, adult male and female couple engaging in consensual sexual activities; PHE, Inc.) or 6 min of a criminal justice lecture video. This length of arousing video is similar to that used in prior research (see George et al., 2009). Following a procedure successfully

utilized in a number of prior studies on this topic (Bouffard, 2002, 2011; Loewenstein et al., 1997), the videos were described to participants as part of an unrelated pilot study. To further this deception, several questions related to the video followed (e.g., "How realistic was the video you just watched?"). Control group participants were also asked a series of distracter questions (e.g., "How informative was this video?"). Finally, all participants were asked to rate their own current level of sexual arousal, using a 0% (*not at all*) to 100% (*very*) scale after viewing their assigned video.[2]

Outcome variables. The scenario (approximately 480 words) depicted a college-aged man and a woman named Susan who meet at a party and then go to Susan's apartment where they engage in kissing and foreplay. The individuals are described as having been acquaintances prior to meeting at the party. The scenario is written in the first person, so that the reader imagines himself as the male in the story. Near the end of the story the man tries to remove Susan's clothing. At this point in the story, Susan is portrayed as saying "that she is not interested in having sex but does not try to physically stop you." This scenario is based partly on a longer version developed by Norris et al. (2009).

After reading the scenario, participants were asked to report their likelihood of engaging in each of three sexually coercive tactics, including "verbally coax Susan to remove her clothes," "say things you did not mean to get Susan to have sex with you," "try to get Susan drunk in order to have sex with you," and one item measuring the possible use of force—"have sex with Susan even if she protested." Each of these items was rated on a 0% (*no chance*) to 100% (*definitely would*) scale. This type of scenario and these (or very similar) measures of sexual coercion have been successfully used in past research to demonstrate the link between arousal and coercion likelihood (Bouffard, 2002, 2011; Loewenstein et al., 1997). The categorization of coercive and forceful strategies used in this study is also similar to how past research has classified these kinds of behaviors (see, for example, P. B. Anderson & Savage, 2005).

Perceptions of the scenario female. After responding to the likelihood of sexual coercion questions, participants were asked two questions about their perceptions of Susan as depicted in the scenario. Specifically, participants were asked "How willing to have sex do you think Susan was in this story?" and "How much pleasure did Susan receive in this story?" Each of these questions was rated using 0% (*not at all/no pleasure*) to 100% (*very willing/much pleasure*) scales. These two items exhibited a significant correlation with one another ($r = .59$, $p < .01$), and as such their average score was used to

Table 1. Description and Comparison of the Two Groups.

Variables	Arousal Group	Control Group	Test Statistic
Age (years)	22.3	21.8	$t = -0.961$
% White	76.3	76.3	$\chi^2 = .000$
% Hispanic	13.6	14.1	$\chi^2 = .024$
Self-reported arousal	48.8	7.3	$t = -14.867$***
Overperception scale	55.8	53.8	$t = -0.718$
Coax	44.2	38.2	$t = -1.676$*
Lie	35.5	29.8	$t = -1.578$
Get her drunk	16.8	10.2	$t = -2.497$**
Sex despite protests	10.5	8.2	$t = -1.019$

*$p < .10$. **$p < .05$. ***$p < .01$ (two-tailed).

represent the overperception of Susan's sexual intent. Participants also reported their age, racial and ethnic group membership, and sexual orientation at the end of this survey.

Results

Manipulation and Randomization Checks

Random assignment to the two conditions produced no significant differences between the experimental and control groups in terms of age (22.3 and 21.8 years, respectively; $t = -0.961$, *ns*), race (76.3% White in each group; $\chi^2 = .00$, *ns*), or ethnicity (13.6% and 14.1% Hispanic, respectively; $\chi^2 = .024$, *ns*). In addition, the arousal manipulation produced significantly higher levels of sexual arousal in the experimental group (48.8%) than in the control condition (7.3%, $t = -14.867$, $p < .01$; see Table 1).

Experimental Results

First, a description of the two groups, in terms of variables of interest, is presented (see Table 1). In terms of the likelihood of each sexually coercive behavior, those in the experimental condition exhibited significantly higher likelihood scores only for trying to get Susan drunk to have sex with her (16.8% vs. 10.2%, $t = -2.497$, $p < .05$). Arousal condition leads to higher likelihood of coaxing (44.2% vs. 38.2%; $t = -1.676$, $p < .10$); however, this difference only approached significance. These experimental results provide only modest support for Hypothesis 1 that arousal will increase hypothetical coercion likelihood. Contrary to the prediction of Hypothesis 2, there was

Table 2. Correlations Between Arousal Level, Overperception, and Coercion.

Variables	Arousal Level	Over Perception	Coax	Lie	Drunk
Overperception	.112**				
Coax	.197***	.347***			
Lie	.200***	.334***	.687***		
Try to get her drunk	.219***	.238***	.452***	.499***	
Sex despite her protests	.079	.254**	.332**	.346***	.430***

*$p < .10$. **$p < .05$. ***$p < .01$ (two-tailed).

also not a significant difference in the overperception of sexual interest scale between the arousal (55.8%) and control (53.8%, $t = -.718$, *ns*) groups.

Non-Experimental Results

While the experimental manipulation did create higher levels of sexual arousal in those assigned to view the erotic video, assignment to the arousal condition exhibited no relationship to perceptions of the woman presented in the sexual coercion scenario (Hypothesis 2) and only one significant effect on the likelihood of sexual coercion (i.e., trying to get Susan drunk; Hypothesis 1). The lack of significant results from the experimental manipulation is similar to a number of past studies that have also failed to find group differences in the perception of costs and benefits, or in the likelihood of hypothetical sexually coercive behavior (Bouffard, 2002, 2011; Loewenstein et al., 1997). These same studies, however, did find some evidence for the anticipated effects from non-experimental analyses using the self-reported level of sexual arousal, rather than arousal condition. Following the lead of these previous studies, from this point forward, the impact of self-reported level of sexual arousal will be examined.

Results for the influence of the *self-reported level* of sexual arousal on perceptions of the victim and on hypothetical coercion behaviors were more consistent with expectations in Hypotheses 1 and 2. In support of Hypothesis 1, self-reported arousal level was significantly correlated with the likelihood of three of the sexually coercive behaviors (see Table 2). These significant correlation coefficients ranged from $r = .197$ (coax Susan to remove her clothes, $p < .05$) to $r = .219$ (try to get her drunk, $p < .01$). Self-reported arousal was not significantly correlated with the likelihood of having sex with Susan despite her protests ($r = .08$, *ns*).

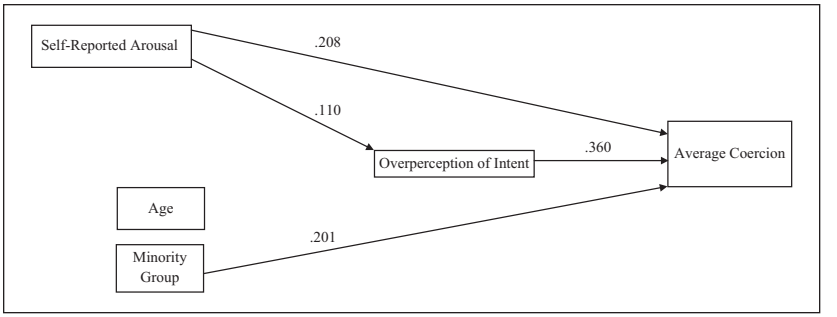

Figure 1. Path model of arousal's impact on average sexual coercion as mediated by overperception of sexual intent.
Note. Standardized estimates are shown. Only significant paths ($p < .05$) are included. $n = 354$. CFI = .985, RMSEA = .031. CFI = comparative fit index; RMSEA = root mean square error of approximation.

Hypothesis 2 was also supported in that the self-reported level of arousal was significantly, positively correlated with the overperception of Susan's sexual interest ($r = .112$, $p < .05$). Finally, in relation to Hypothesis 3 (that perception of the woman's sexual interest mediates the relationship between arousal and coercion), the overperception of Susan's interest in having sex was significantly correlated with each type of sexually coercive/forceful behavior (see Table 2). Specifically, overperception of Susan's sexual intent exhibited correlations with coercive behavior likelihood ratings that ranged from $r = .238$ (try to get her drunk, $p < .01$) to $r = .347$ (coax her to remove her clothes, $p < .01$).

Multivariate Path Models

While these bivariate results for the level of sexual arousal support the relationships suggested in each of the three hypotheses advanced in this study, to fully test Hypothesis 3—that arousal's impact on coercion is at least partially mediated by perceptions of the woman's sexual interest—appropriate multivariate path models are needed. The model examined here examined whether the measure of overperception will at least partially mediate the relationship between self-reported arousal and sexual coercion likelihood. The dependent variable in this model is the average rating of the four coercion behavior items. As they are commonly employed control variables in tests of criminological theories, this model also controls for the effects of age and minority group status (White, non-Hispanic = 0) on offending likelihood. Figure 1 shows the results of this path model, estimated using AMOS v. 20.

Generally, the comparative fit index (CFI) should be over 0.9 and the root mean square error of approximation (RMSEA) should be less than 0.06 to indicate a good fit to the data, and this model meets each criterion (CFI = .985, RMSEA = .031), suggesting a good fit. This model controlled for the impacts of minority group status and age on sexual coercion likelihood, and minority group members were significantly more likely to engage in sexual coercion (Std. Est. = .201, $p < .01$), while age was not related to coercion likelihood (Std. Est. = −.031, *ns*). Support for Hypothesis 1 was found in the positive, significant direct effect of arousal level on the average likelihood of sexual coercion (Std. Est. = .208, $p < .01$). At the same time, Hypotheses 2 and 3 were also supported in that self-reported arousal level exhibited a significant positive relationship with overperception of sexual intent (Std. Est. = .110, $p < .05$), and overperception was then also positively related to the hypothetical likelihood of coercion (Std. Est. = .360, $p < .01$), even controlling for the direct effect of arousal level on coercion likelihood.

Overall then, it seems that self-reported sexual arousal had both a direct effect on the likelihood of sexual coercion and an indirect effect by increasing the likelihood that the participant overperceived the woman's level of sexual interest. The AMOS software program provides results related to the statistical significance of both the direct and indirect effects specified in a path model. These results demonstrate that the standardized indirect effect of arousal on sexual coercion likelihood (through overperception) was significant (Std. effect = .04, $p < .05$), as was the standardized direct effect of arousal level on sexual coercion (Std. effect = .208, $p < .01$). In other words, overperception of sexual intent partially but not fully mediated the relationship between sexual arousal level and average sexual coercion likelihood score.

Discussion

Existing research on the perception of sexual intent and sexual arousal has separately found relationships with sexual coercion among college students (Ariely & Loewenstein, 2006; Bouffard, 2002, 2011; Farris et al., 2008). The current study examined the combination of these factors and found that in fact, experienced states of sexual arousal have both direct and indirect effects (through altered perceptions of the victim's intent) on the likelihood sexual coercion. Specifically, while experimental condition did not predict coercion likelihood or overperception, the average level of sexual arousal predicted both overperception and coercion, and this was true in both bivariate and multivariate analyses.

The link between arousal, inaccurate perception of the potential partner, and sexual coercion likelihood is consistent with previous criminological

research (often examining rational choice theory) that has indicated that sexual arousal indirectly affects sexual behavior decision making by altering perceived consequences of such behavior (Bouffard, 2002, 2011; Loewenstein et al., 1997). However, the existing criminological research has focused on altered perceptions of costs and benefits, rather than examining how arousal may alter the individual's perception of other aspects of the situation itself, thus making offending more likely. Cullen (2011) in particular suggested that scholars should focus more on how aspects of each offending situation could influence decision making, and this study provides important information on that issue, including a demonstration of how current emotional state can shape not only the individuals' perception of the consequences of their actions but also their perception of the situation itself. Future research should examine the role of other factors (e.g., alcohol or drug intoxication, prior relationship status, peer expectations, physical setting) as they impact both the perception of the victim and other aspects of the situation, such as the risks of detection.

In addition to adding to the criminological literature on rational choice theory, these results also inform a growing psychological literature examining overperception of sexual intent by demonstrating that the level of sexual arousal can alter this perception. Several other studies (e.g., Bernat et al., 1999; Davis et al., 2006) have demonstrated the victim's reaction (arousal vs. disgust during a rape) or the introduction of force cues during an audiotaped depiction of a sexual assault can reduce arousal levels, at least among some participants; however, little prior research on overperception of sexual intent has examined how arousal can influence perceptions of the victim. Only Maner and colleagues (2005) have previously examined the causal model proposed here and thus additional research is needed to confirm the findings. At the same time, future research should expand on these findings and examine how other factors (e.g., attitudes about interpersonal relationships, rape myths, prior use of erotic materials) may interact with current sexual arousal to influence the overperception of intent. For instance, sexual arousal may have an especially detrimental effect on the ability to accurately perceive a potential partner's cues among those who have attitudes supportive of rape or those who have extensive histories of using erotic materials.

While the results here await replication, particularly among non-student samples, they may nonetheless be potentially useful in the development of effective strategies to prevent sexual coercion, especially among college-aged populations. For example, teaching individuals about the impact that being in an aroused state will have on the manner in which they make decisions (as Loewenstein, 1996, suggested) may increase awareness and promote more deliberative cognitive processes when they find themselves in

similar high-risk situations. For example, public health research has shown that heightened sexual arousal is related to failure to use condoms (Boldero, Moore, & Rosenthal, 1992). Several effective programs have provided participants with information to help them identify and counteract the influence of current arousal (and anticipated sexual pleasure) on the decision to engage in risky sexual behaviors among those at risk for HIV transmission (see Kelly & Kalichman, 1998; Kyes, 1990). This type of "relapse prevention" programming has also been used effectively to educate sexual offenders, as well as drug-dependent individuals, to anticipate and plan in advance for how certain individual and situational factors may precipitate their relapse (e.g., Marlatt & Barrett, 2004; Yates & Ward, 2007). Program design efforts are needed that will incorporate this knowledge into prevention efforts, as is research to investigate whether the application of this type of approach to campus sexual assault prevention programming would increase the efficacy of such efforts, but the current results suggest this might be a fruitful endeavor.

Limitations

While the current study made use of a sample of male university students that was larger than those used in past criminological research in this area, the current results may not generalize to other university samples, nor to the general population or to offender populations. At the same time, the effects of arousal on the decision-making process proposed by authors like Loewenstein (1996) are conceived of as more or less universal and as such the generalizability of the sample is necessarily not in question. University students do, however, live in (and engage in sexual coercion within) a unique social setting and thus future research is needed to replicate these findings in other universities and among other populations, particularly known sexual offenders. Regardless, much of what is known about the relationship between arousal, perception, and sexual coercion comes from similar and often smaller samples of university students. As such, the current study provides an important contribution to this body of research.

The arousal manipulation utilized in the current study achieved only modest levels of arousal, such that the hypothesized effects may have been somewhat muted in this study. At the same time, relatively consistent support was found for the hypotheses advanced in this study, using self-reported sexual arousal, even with only moderate levels of arousal. At higher levels of arousal, it is possible that even more sizable influences on overperception could emerge. Participants also completed the survey materials online and while this allowed for the efficient collection of data from a large sample, it also means that individual participants may have completed the materials in very

different contexts, reducing our ability to fully control all aspects of the study setting. For instance, some participants may have not given the survey materials their full attention because they could complete the questions in any location where they had Internet access. These factors may explain the failure to find support for our hypotheses among the experimental results, although several previous studies have reached similar conclusions.

Finally, the current study examined the influence of arousal on the perceptions and sexual coercion decisions of non-homosexual males only. While women generally are less likely to engage in sexually coercive/forceful behaviors at the same rate as do men, they do engage in these types of behaviors (see P. B. Anderson & Savage, 2005, for instance). Future research should examine whether sexual arousal produces similar impacts on the perception and decision-making processes of women and homosexual individuals who engage in these behaviors.

Conclusion

The current study set out to bring together two promising but separate lines of inquiry into the factors that precipitate sexual coercion/force. While these results are but a preliminary step toward better understanding the complex interaction of individual and situational factors as they impact decisions to utilize sexually coercive tactics, they do suggest some useful avenues for future research, and for possible refinements to prevention programming. In particular, they advance our understanding of the many ways in which states of heightened sexual arousal influence the decision process itself. Previous rational choice research has shown that arousal can reduce the influence of perceived costs and increase the perception of potential benefits, while the current efforts suggest that the arousal level can influence the perception of the victim's interest in sexual relations within the specific situation, further increasing the likelihood of sexual coercion. Nagin (2007) and Cullen (2011) each suggested that increased attention to choice and specifically to how emotions and situational factors influence decision making were important for advancing criminological theorizing. While much work is still needed in this area, the current effort underlines the potential gains to be made in our understanding of sexual coercion and of the role of emotion in offender decision making more generally.

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Notes

1. This statement is not meant to suggest that sexual coercion is motivated entirely by sexual arousal, nor that the desire for sexual pleasure and that for domination/control are the same. In the end, whether individuals are motivated by the desire for power or for sexual pleasure, once the state of sexual arousal is activated it is hypothesized to demonstrate attention-shifting effects within the decision to use coercion.
2. Applying a physiological measure to each of several 100 individuals who took the survey online (so as to promote honesty and privacy) was considered impractical, and in this case unnecessary, as a number of existing studies have successfully relied on self-reported level of sexual arousal (Ariely & Loewenstein, 2006; Bouffard, 2002, 2011; Loewenstein, Nagin, & Paternoster, 1997). In addition, Malamuth, Heim, and Feshbach (1980) discussed the validity of this type of self-report measure and concluded that "for nondeviant populations, self-reported sexual arousal has been generally found to correlate highly with genital measures" (p. 402).

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