

Young Men's Likelihood Ratings to Be Sexually Aggressive as a Function of Norms and Perceived Sexual Interest

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This study experimentally investigated the influence of different norms regarding the acceptability of sexual coercion and overperception of sexual intentions in casual interactions with women, as well as an interaction of these factors on self-reported likelihood to engage in sexual assault by male college students. Results of a logistic regression showed a significant interaction of men's perceptions of sexual intentions of women and exposure to norms regarding the acceptability of sexual coercion. Even after very brief exposures to rape-conducive norms, men who tended to perceive women as having more sexual intentions had significantly larger odds of rating themselves as likely to use coercion to obtain engagement in sexual activities compared with those who perceived lower sexual intentions in women or were exposed to antirape norms. This pattern of results suggests that interventions targeting peer pressure and adjustment of social norms might be particularly beneficial for those men who tend to overestimate how much interest in sexual interactions a woman might have.

Keywords: rape, sexual assault, sexual aggression, norms, sexual intentions

According to the Bureau of Criminal Justice (Bureau of Justice Statistics, 2011), more than 240,000 sexual assaults were perpetrated in 2011. About one in 12 college men admit to having raped a female, and about one in five men agree they have become so sexually aroused they "could not stop themselves from having sex" even though the woman did not consent (Fisher, Cullen, & Turner, 2002). Furthermore, committing a sexual assault is a key predictor of future engagement in assaults. In fact, recent research on perpetration patterns suggests that a small minority of men perpetrates a large number of sexual assaults and could be considered serial perpetrators. (Loh, Gidycz, Lobo, & Luthra, 2005; Loh, Orchowski, Gidycz, & Elizaga, 2007; McWhorter, Stander, Merrill, Thomsen, & Milner, 2009). Many studies looking at external factors as well as internal characteristics of perpetrators of sexual assault have been conducted; however, few of these were rigorous experimental designs. In the current study, we wanted to experimentally investigate two factors that have been consistently linked with male engagement in forced sexual activity: how much a man perceives a woman as having interest in and intentions to engage in sexual acts (hereafter referred to as *perception of sexual intent*) and what the man considers the social or peer norms to be regarding the acceptability of using some force or coercion to push a woman to engage in a sexual act (hereafter referred to as *perceived*

norms). Our study focused on men perpetrating sexual assault against females because men perpetrate 99% of all rapes (Greenfeld, 1997), women are victimized at higher rates, and the factors related to female perpetration or male-on-male rape likely differ from those related to male-on-female rape.

Perceptions of Sexual Intent

Research investigating sex differences in the perception of sexual intent has consistently shown that men to interpret ambiguous behavior—those behaviors that fall into a gray zone between seductive versus friendly—as signaling greater sexual intent than when women rate the same behaviors (e.g., Abbey, 1982). Therefore, men may be more likely to mistake women's flirting behaviors such as dancing or kissing as signs that they are interested in sexual intercourse (Shotland, 1989), and may more easily feel "led on" if the woman subsequently does not agree to more sexual activity. Haselton and Buss (2000) described this phenomenon in terms of evolutionary selection with the error management theory. Members of the sex that generally has a smaller investment in reproduction and raising offspring (in humans: males) evolve to be driven to seek out as many mating opportunities as are available. The cost of missing mating opportunities is much higher than the cost of expending time and energy for a courtship that will not lead to a mating opportunity, as others will outperform males who consistently miss mating opportunities. In situations with an asymmetry in costs from not pursuing mating opportunities as much versus expending energy in unsuccessful courtship, error management theory predicts that a bias in choice will evolve toward the less costly error, even though this strategy leads to overall more errors.

Haselton (2003) replicated Haselton and Buss's (2000) earlier findings by examining 102 women's and 114 men's experiences with having their sexual intent inaccurately perceived or not perceived.

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ceiving a partner's sexual intent accurately in a natural setting. Men and women reported instances of inaccurately perceived sexual intent over the past year. Results were consistent with predictions from error management theory and showed that men have a systematic bias when it comes to perceiving mating opportunities, namely they overestimate sexual intent. Women, on the other hand, do not seem to have this bias, and are reported to have made errors of over- or underperception of sexual intent at equal rates. Other studies have shown that this overperception bias in men occurs for perceiving sexual intent in women's behaviors, other men's behaviors, and their own behaviors as well (Abbey & Melby, 1986).

Perceptions of sexual intent appear to play an important role in sexual aggression. Willan and Pollard (2003) presented participants with written scenarios of increasingly intense heterosexual activities and asked them to rate the female character's desire to engage in each subsequent activity (kissing, body touching, mutual masturbation, sexual intercourse), their own desire if they were in such a situation, and the female character's likelihood to engage in more intense sexual activities at each stage. The scenario ended with the female character's refusal to engage in more sexual activity, and the male participants were also asked to rate their disappointment, anger, and happiness as well as the likelihood that they would force the woman in the story to engage in more sexual activity after she declined. Results showed that male students perceived a greater desire and likelihood in the female character to engage in more sexual activity than female students during the early stages of sexual activity (kissing), but these differences diminished once the sexual activity increased in intensity. This provides support that men and women differ in their perceptions of sexual intent during earlier stages of intimacy, when cues are more ambiguous (e.g., kissing), but not when cues become more unambiguous. Similarly, Loh et al. (2005) found that men who attempted or committed a sexual assault perceived having partners who exhibited token resistance at higher rates than men who did not act coercively (48.3% vs. 24.6%); thus, it seems that men who engage in sexual assault misperceive the early cues. This misperception then leads them to attempt or commit a future sexual assault at about 3 times as often (Loh et al., 2005). Further providing support for perceptions of sexual intent as a predisposing factor to potential sexual violence, the best predictor for self-reported likelihood to use coercion after the female character has refused more sexual activity was men's initial expectations for intercourse to occur based on their judgment of the woman's intent at the outset of the interaction.

However, not all men who overperceive a woman's sexual intent go on to verbally or physically coerce her into more sexual activity, even if situational factors (e.g., being alone at the man's place of residence) are favorable for sexual aggression to occur. Therefore, it is reasonable to assume that other factors internal to the potential perpetrator come into play when men are making decisions to behave sexually aggressive or sexually nonaggressive. Another factor consistently noted in the literature is perceived norms regarding acceptable sexual behavior.

Perceived Norms

Most students attend college as they are transitioning into adulthood, a time when they are still figuring out their own moral values

and standards. During these years, they are especially susceptible to outside norms, which are likely to impact behavior. Going away to college also leaves students largely unsupervised, and students can experiment with different behaviors that were less likely to emerge while still under parental supervision. When students immerse themselves in a subculture that is more accepting of sexual aggression, objectifies women, and portrays women as a commodity available to satisfy men's sexual needs, they will likely be impacted by these norms and may change their own sexual tactics (Boeringer, Shehan, & Akers, 1991).

Perceived social norms can have a powerful impact on a person's behavior. For example, studies that interviewed males who committed sexual assaults during dating found that a sizable portion of offenders commented on the influence of peers and the pressure they perceived from them to engage in sexual activity as a motivator for behaving more sexually aggressive (e.g., Berkowitz, 1992). Giarrusso, Johnson, Goodchilds, and Zellman's (1979) sampling of high school men found that more than half agreed with the notion that "being led on" by a woman justifies rape. Some men might expect women to resist their sexual advances in an effort to comply with social expectations rather than as an expression of their true wishes (e.g., Loh et al., 2005). In this case, these men may view this behavior as an invitation to intensify their efforts of persuasion, seduction, and coercion (Polaschek & Ward, 2002). Therefore, using some amount of sexual coercion can be viewed as normative in our culture (Forbes, Adams-Curtis, & White, 2004; Lloyd & Emery, 2000).

Empirically examining the effects of social norms, Bohner, Siebler, and Schmelcher (2006) gave students normative feedback based on fictitious responses of peers on a measure of rape myth acceptance. In line with previous social norms research, they found that students who were presented with fictitious information suggesting that their peers highly endorse rape myths reported the highest rape proclivity as measured by their responses to date rape scenarios compared with those who received information suggesting low rape myth acceptance by peers. Similar results were replicated by Eyssele, Bohner, and Siebler (2006).

Perceived peer norms even appear to be more influential than personal norms at times. Brown and Messman-Moore (2010) recently found that perceived norms predicted college men's ratings of their willingness to intervene when witnessing sexual aggression, but personal norms did not after peer norms were included. Another study that looked at nonadjudicated perpetrators of intimate partner violence found that these men consistently overestimated how often other men engaged in intimate partner violence, having exaggerated norms compared with the actual occurrence of this type of aggression (Neighbors et al., 2010). These studies point to the importance of what men perceive other men do and believe.

As a result of this research, many acquaintance rape prevention programs now incorporate a norms component (e.g., Berkowitz, 2010; Gidycz, Orchowski, & Berkowitz, 2011). A mechanism by which social norms influence behaviors is suggested by Borsari and Carey (2003). They theorize that people will compare their own behaviors with the norms they perceive. This can lead to a discrepancy, which people seek to resolve by shifting their own behavior to match the perceived norms. Heimerdinger and Hinsz (2013) found that college men consistently overestimated their peers' endorsement of rape-conducive norms. Further support for

the importance of perceived norms in the commission of sexual assaults is provided by research that looked at how previous experiences with violence relate to sexual aggression. Being exposed to violence in the home makes aggression in general more normative and acceptable, which may lead to increased use of aggression by the person witnessing it unless steps are taken to mitigate this influence. Indeed, Lyndon, White, and Kadlec (2007) found that men who witnessed or were victims of physical or sexual aggression while growing up were more likely to engage in the most severe forms of sexual aggression (e.g., forcible rape) later in life.

The Current Study

Clearly perceived norms are an important construct to consider in the study of factors related to date rape perpetration. Therefore, altering perceptions and norms about what constitutes nonconsensual sexual activity may influence men's likelihood of engaging in sexual assault by changing these factors that enable sexual aggression (Berkowitz, 2010; Gidycz et al., 2011). The current study adds to the existing literature on date rape and sexual coercion by examining the possible interactive effects of sexual assault-accepting norms and overperceptions of sexual intent using an experimental design. This allowed for causal inferences of the role of norms in the perpetration of sexual assault, thereby demonstrating the importance of normative peer influence in the perpetration of sexual coercion. In the current study, having participants rate a casual male–female interaction in terms of perceived sexual intent assessed overperceptions of sexual intent. Similar methodologies have been used in previous research studies (e.g., Abbey & Melby, 1986) and should provide a gradation of participants' tendencies to overperceive sexual intent. Norms regarding the acceptability of using force to obtain sexual activity were manipulated by presenting participants with prepared normative information regarding the acceptability and prevalence of the use of force to obtain sexual activities. Previous research seeking to change norms by providing different normative information has demonstrated success in changing norms for relatively brief periods with short manipulations (Heimerdinger & Hinsz, 2013).

Hypotheses

We hypothesized that men who tend to perceive social cues as indications for sexual interest to a greater degree (i.e., overperceive sexual intent in casual interactions) would endorse greater intentions to engage in forced sexual activity if they were also exposed to peer norms that convey acceptance of coercion to obtain intercourse compared with men who have norms not condoning such behavior. In other words, we expected to find an interaction of overperceptions of sexual intent and norms (Hypothesis 1). In the absence of norms encouraging or tolerating sexual aggression and the objectification of women, even men who have a tendency to overperceive sexual intent were expected to not endorse greater intentions to be sexually aggressive than those who have more accurate perceptions.

Furthermore, should this hypothesis be supported by data, two follow-up analyses were planned to test whether the relationships found hold even after accounting for the participants' desire to engage in intercourse (Hypothesis 2), as well as the participants'

level of self-reported previous engagement in sexual assault (Hypothesis 3).

Method

Participants

Participants were solicited from a midwestern university and received extra credit in their psychology or communication studies classes for participating in research. Participants were included in the study if they were male, identified as heterosexual, and stated they have had previous sexual experiences. The 382 students who participated were on average 20.1 years old ($SD = 2.8$). Most students identified as Caucasian ($n = 323$; 84.6%), and some as African American ($n = 13$; 3.4%), Hispanic ($n = 10$; 2.6%), Asian American ($n = 19$; 5.0%), multiracial ($n = 6$; 1.6%), or international students ($n = 11$; 2.9%). This was consistent with the general student composition at this university. No participants dropped out of the study.

Procedure

Participants were informed that they would be taking part in two brief studies that had been grouped together to fill the hour and thus allowed for extra credit to be given. This deception was used to keep the participants from guessing the true intent of the study and, thereby, reducing socially desirable responding to the sexual intent questions. Participants completed the study via computer. After giving informed consent, all participants were randomly assigned to one of the three conditions: prorate norm condition, neutral norm condition, or antirape norm condition.

Part 1. For the first part (i.e., Study 1), participants were informed that they would be evaluating TV and printed advertisements. All participants, regardless of condition, were then instructed to watch a brief video clip without sound on the computer depicting a commercial for a soda, which featured an unacquainted young man and a young woman sitting at a bus stop, with the man eventually offering the woman a soda. To assess participants' perceptions of sexual intent, participants responded to a questionnaire that included the three items originally included in Abbey's (1982) hallmark study on perceptions of sexual intent, asking participants to judge the degree to which the woman behaves flirtatious, seductive, and promiscuous. To enhance the credibility of the cover story, participants also answered filler questions about the actors (e.g., level of friendliness, ability to play the role, etc.), as well as the product being depicted.

Participants then saw a message on the screen explaining that the task would now switch to evaluation of printed advertisements, and that they would be evaluating messages directed at college students in residence halls to promote knowledge about college students' sexual behaviors. Participants then saw four posters with the normative messages that corresponded to their assigned condition (antirape norm condition, neutral norm condition, rape norm condition). Four posters in each condition were used to make the manipulation more powerful. Participants in the rape conducive condition ($n = 127$) saw posters containing messages such as "Most men and women believe if a woman leads a man on, it's ok for the man to become a bit stronger with her if she tries to duck out of sex at the last minute." Participants in the neutral condition

($n = 130$) saw posters with the same pictorial backgrounds, but messages congruent with their condition (e.g., “Most men and women agree using condoms is a smart thing to do to prevent STDs”). Participants in the antirape condition ($n = 125$) saw the same posters, but with messages congruent with their condition (e.g., “Most men and women believe if a date changes her mind about sex at any time, the right thing to do is to stop and respect her wishes”). After each poster, all participants answered a filler question in line with the cover story and were asked to report on the content of the posters, which served as a manipulation check. All participants were able to remember the content of the posters accurately and thus all were included in the analyses.

Part 2. Next, participants were that told they would now start Study 2, which was explained to them as investigating sexual behaviors and situations college students sometimes find themselves in. After giving consent, participants read a hypothetical scenario depicting a sexual encounter with a newly acquainted woman (see Willan & Pollard, 2003; see Appendix for example scenario). Participants were asked to rate how likely they would force the woman to engage in three kinds of sexual activities (petting, oral sex, vaginal intercourse) if they were in a situation like that depicted in the story. As a potential covariate, the participants’ desire to engage in sexual intercourse if they were in a situation as described in the scenario was assessed as well. The study concluded with questions from the Sexual Experience Survey (SES; Koss & Oros, 1982), which asks participants to indicate their involvement in consensual and coerced sexual activities, and demographic questions asking for participants’ age, sex, sexual orientation, and ethnicity. Finally, participants were debriefed, with care being taken that the participants understood the purpose of the experiment, the deception employed, and the false norms given. Participants were also provided with referral information to student counseling services and a family clinic. No adverse effects were reported to the researchers.

Measures

Degree of sexual intent. For Part 1, participants reported on their perceptions of sexual intent after viewing the video by responding to three questions developed by Abbey (1982) asking participants to judge the degree to which the woman depicted behaves flirtatious, seductive, and promiscuous. All items were answered on 11-point scales ranging from 0 (*completely disagree*) to 10 (*completely agree*). In the present sample, internal consistency of the three items was .77.

Intention to commit sexual assault. For Part 2, participants were asked to rate how likely it would be that they would force the woman to engage in three different kinds of sexual activities (petting, oral sex, vaginal intercourse) if they were in a situation depicted in the vignette they read (Willan & Pollard, 2003). Participants indicated their likelihood as a percentage from 0% to 100%, with higher scores indicating greater likelihood. Using ratings of intentions to be sexually aggressive in lab research has been common practice given that direct observations of sexual aggression are impractical and unethical in a lab situation. Furthermore, intentions to engage in a behavior have been found to be the most direct precursor to actually engaging in a behavior (e.g., Fishbein & Azjen, 1975), and have been applied to sexual aggression in dating relationships (Betts, Hinsz, & Heimerdinger, 2011).

In the present study, the three questions of likelihood to commit sexual aggression were highly correlated with each other (r s ranged from .82 to .90) and were collapsed to form a composite measure of mean intentions to commit sexual assault.

Participants’ desire to engage in intercourse. As a potential covariate, the participants’ desire to engage in sexual intercourse if they were in a situation as described in the scenario was assessed as well. Participants rated their desire on continuous scale as a percentage from 0% to 100%, with higher scores indicating greater desire.

Sexual experiences. At the end of Part 2, participants’ involvement in sexual experiences was assessed with the SES (Koss & Oros, 1982), which asks participants to indicate their involvement in consensual and coerced sexual activities. The SES has been used in research extensively and has been reported to be stable across short timeframes (Ouimette, Shaw, Drozd, & Leader, 2000). Koss and Gidycz (1985) reported test–retest reliability over 1 week of .93 and an internal consistency of .89 using the scale on a large, national sample of college men. In the present study, only the four final items of the SES were used to assess whether participants had engaged in sexual coercion previously because these items are unambiguous in assessing sexual assault as defined in the legal literature, whereas earlier items on the SES may imply a range of behaviors (e.g., a “yes” to the question “Has a woman ever misinterpreted the level of sexual intimacy you desired?” could mean that the woman wanted more sexual behaviors than the male or vice versa; see Ouimette et al., 2000). In the present study, the internal consistency for the last four items was .73.

Results

Standard preliminary analyses were performed on all variables, including assessing univariate and multivariate normality and linearity, checking for outliers, and assessing correlations among the predictor variables. Descriptive statistics (means, standard deviations, and skew) for all continuous variables of interest are shown in Table 1. Participants’ age was unrelated to their rating of the woman’s sexual intentions ($r = .03, p = .52$), ratings of their own likelihood to be sexually aggressive ($r = -.01, p = .83$), and past reported history of committing sexual aggression ($r = .00, p = .99$). Given the lack of variability in reported race or ethnicity, group-level analyses based on this variable were not feasible.

Participants’ previous engagement in sexual assault as a potential important covariate to be controlled for was assessed by analyzing the responses to the last four items of the SES (Koss & Oros, 1982). With regard to sexual violence, 22 participants (5.8%) indicated they had raped a woman before. Fourteen partic-

Table 1
Descriptive Statistics

Measure	Mean	SD	Skewness
Male desire to kiss	93.60	17.67	-3.46
Male desire to touch	92.82	16.63	-3.19
Male desire to pet	89.22	21.24	-2.36
Male desire for sex	75.96	33.09	-1.22
Perceptions of female sexual intent	4.64	1.91	-0.24
Mean likelihood to commit sexual assault	7.48	18.20	2.90

ipants indicated they had unsuccessfully attempted to rape a woman before (3.7%).

Multivariable logistic regression analyses were performed to test the main hypothesis that self-reported intentions to use sexual coercion is a function of heightened perceptions of sexual intent in women in general as well as being exposed to norms conducive to sexual coercion. Logistic regression is less restrictive in its assumptions than ordinary least squares regression, and does not assume a linear relationship between the predictors and dependent variable, a normally distributed dependent variable, or equal variances of the dependent variable across all levels of the independent variable, and is hence more appropriate for this kind of data, in which the dependent variable cannot be assumed or expected to be normally distributed (Tabachnick & Fidell, 2000). Because our primary interest was in testing predictors of any likelihood of coercive behavior to occur and we had a large number of participants indicating no intent, logistic regression was an appropriate choice.

The participants' rating of their likelihood to commit sexual assault was used as the dependent variable, with participants indicating no intent (coded 0) in one group ($n = 281$, 74%) and participants indicating any intent in the target group (coded 1; $n = 101$, 26%). Condition was dummy coded with the antirape norm condition as the reference group, and standardized scores on the perceptions of sexual intent measure by Abbey (1982) were used as a continuous predictor. We chose the antirape condition as the reference group because a core part of many prevention programs based on normative influence is the promotion of antirape norms; thus, it was of interest to see whether these made a difference compared with prorape norms or norms as usual (neutral condition). Two interaction terms were computed analogous to multiple regression, in which each interaction term consisted of the product of a dummy variable and the standardized continuous variable. Comparison with a hypothesized perfect model showed that the model fit the data well (Hosmer and Lemeshow χ^2 p values $> .05$, Nagelkerke $R^2 = .05$). Comparison of log-likelihood ratios for models with and without the interaction terms entered showed reliable improvement with the inclusion of the interaction terms (model $\chi^2 = 12.68$, $p = .03$). Results of the logistic regression including confidence intervals for the odds ratio are displayed in Table 2.

Table 2
Logistic Regression Statistics

Variable	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>	OR	CI
Condition 1	0.72	.31	2.23	.02	2.05	[1.14, 3.76]
Condition 2	0.65	.31	2.10	.03	1.91	[1.05, 3.49]
zperceptions	-0.30	.21	-1.43	.15	0.74	[0.49, 1.12]
Cond1 × zperc	0.70	.30	2.33	.02	2.00	[1.12, 3.58]
Cond2 × zperc	0.38	.29	1.31	.20	1.47	[0.83, 2.60]
Constant	-1.53	.24	-6.38	.00	0.22	[0.13, 0.35]

Note. zperceptions = participants' perceptions of the female's interest in sexual activity rescaled as *z*-scores; Cond1 × zperc = product of the first dummy variable with zperceptions; Cond2 × zperc = product of the second dummy variable and zperceptions. Conditions were dummy coded such that the first dummy variable coded the rape-conducive condition 1, and the remaining two conditions were dummy coded 0. The second dummy variable coded the neutral condition 1, and the remaining conditions were dummy coded 0.

There was a significant main effect for condition, but not for perceptions of sexual intentions, as well as a significant interaction. Unsurprisingly, students exposed to the prorape messages had higher intentions to be sexually aggressive. Students in the neutral condition also indicated greater likelihood to be sexually aggressive compared with students in the antirape condition. There was a significant interaction such that students who were exposed to rape-conducive messages and had higher general perceptions of women's sexual intent had 2 times higher odds of estimating themselves as having a likelihood to commit sexual assault compared with those exposed to antirape norms. The predicted probabilities for indicating intentions to be sexually aggressive by conditions and at different levels of perceptions of sexual intent were calculated and are shown in Figure 1.

Given that linear multiple regression is very robust against nonnormality with large enough sample sizes, we analyzed the data in this way as well. This yielded essentially the same results.¹

To exclude the possibility that significant effects were found solely due to students' heightened desire for sexual intercourse to occur, we ran a second logistic regression analysis with the participants' ratings of how much they would like to engage in intercourse if they were the man in the situation depicted in the story introduced as the first variable in a hierarchical logistic regression. Doing so allowed us to control for this variable before the interactive hypothesis was tested. Such a model did not fit the data well (Hosmer and Lemeshow $\chi^2 = 17.94$, $p = .003$), nor did participants' desire to have intercourse significantly add to the model when included by itself or in later steps as part of the hypothesized model.

Another potential covariate that was controlled for was participants' previous engagement in sexual assault. As such, students' standardized responses to the last four items of the SES were included in a first step of another hierarchical logistic regression. Unsurprisingly, previous engagement in sexual assault by itself predicted intentions to commit sexual assault (log-likelihood $\chi^2 = 30.89$, $p = .000$, $b = .82$, $p = .000$, OR = 2.27). However, a most informative finding was that the pattern of results from the original analysis was repeated even after the effects of engagement in previous sexual assault were controlled for (log-likelihood $\chi^2 = 46.12$, $p < .001$). In other words, the interaction of the prorape condition and perceptions of sexual intentions remained significant ($b = .77$, $p = .02$), and so did the predictors indicating condition.

¹ Logistic regression was chosen because it has less restrictive assumptions (i.e., less dependence on normality), but it also led to dichotomizing the dependent variable. Therefore, we reran our analysis as a hierarchical linear multiple to examine the potential that our dichotomizing the dependent variable altered the findings in an important manner. The results of the hierarchical linear multiple regression showed very similar results to logistic regression. Most important, there was a significant interaction of Condition 1 and perceptions, $\beta_{\text{cond1}} \times z_{\text{perc}} = -.184$, $p = .007$, but not of Condition 2 and perceptions, $\beta_{\text{cond2}} \times z_{\text{perc}} = -.102$, $p = .132$. This replicates the key findings of the hierarchical logistical regression, with men with higher perceptions of sexual intent but not exposed to antirape norms having the highest levels of self-reported intentions to be sexually aggressive. Therefore, in the text, we report the findings of the logistic regression because it better met the assumptions of the current data set (Tabachnick & Fidell, 2000).

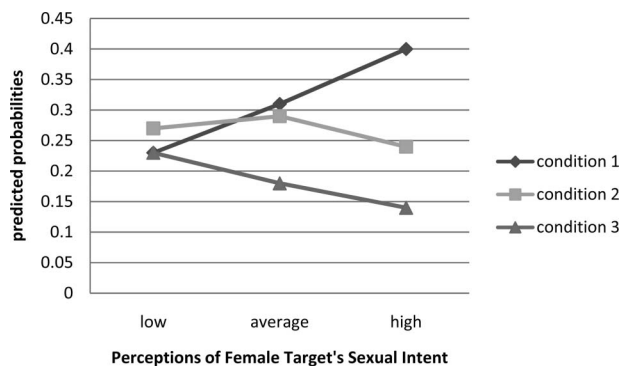


Figure 1. Predicted probabilities of self-identifying as having any likelihood to commit sexual assault by condition and levels of perceptions of sexual intentions in the female target. Low corresponds to -1 standard deviation, average corresponds to the mean, and high corresponds to 1 standard deviation above on perceptions of sexual intent. Men in Condition 1 saw the rape-conducive norm messages, men in Condition 2 saw the neutral norm messages, and men in Condition 3 saw the antirape norm messages.

Discussion

The data supported the hypothesis that likelihood to commit sexual assault is a product of both exposure to norms condoning sexual aggression and a predisposition to perceive women as having higher sexual intentions in everyday, nonsexual situations. Logistic regression analyses showed that when other predictors were held equal, exposure to rape-conducive norms was associated with 2:1 increased odds of having intentions to commit sexual assault, and the interaction of norms and overperceptions of sexual intent in women doubled the odds as well. This increase in odds may not appear too impressive from a purely statistical standpoint; however, this increase was observed after using a very brief (approximately 1 min or less) intervention designed to alter norms. In real life, students are constantly exposed to normative influence from peers and others. This is particularly pronounced during the college period, when young people develop their own norms independent from their parents' views (Boeringer, Shehan, & Akers, 1991). In addition, because college tends to be the first time most students are without parental supervision, they may witness or participate in different behaviors that they had not been exposed to while at home. Living in close quarters with other men of similar age may lead to a "groupthink"-like phenomenon in which students are more likely to endorse more extreme notions than if they are by themselves (Isenberg, 1986; Myers & Lamm, 1976). Taking these factors together, outside the experimental situation, students are likely exposed to much stronger normative influence, which compounds over time and experience, likely leading to stronger effects than those observed. Using a longitudinal design, one could better examine the impact of culminating, multiple social norm influences over time.

In the present study, there was no independent relationship between perceptions of female intent and likelihood of coercion. However, we believe that this is not necessarily representative of the real world. The differences in perceptions of sexual intent were observed from participants' ratings of a 30-s male-female interaction in a commercial. Outside the laboratory, students are inter-

acting with women in person and would likely be much more involved and invested. This may lead to greater effects of perceptions of sexual intent, especially when the student's initial perceptions turn out to be wrong and disappointment follows instead of the expected sexual interaction. Some tentative evidence for such a conclusion was found by looking at participants' ratings of the female character's desire to engage in sex. This measure was originally included to provide further evidence for the perceptions of sexual intent assessed earlier; however, these factors did not correlate with each other. The ratings of the female character's desire to engage in sex were made after the norm intervention, and could therefore not be considered fully independent from the intervention, and were not suitable for inclusion in a regression as a possible substitute for the initial assessment of perceptions of sexual intent. However, an exploratory analysis of this construct found it to be a highly significant predictor of group membership. It is possible that when identification with the situation is higher (in real life, the student is likely a participant in the situation instead of imagining himself to be a character), perceptions of sexual intent play a larger role by themselves and in conjunction with norms than what was estimated in the current analysis. It could also be that specific perceived intentions during a sexual situation are associated with greater feelings of betrayal or false promises, which could lead to more aggressive responding. Future studies should attempt to investigate this.

Another important finding of the current study was that the effects could be observed even after participants' different levels of previous engagement in sexual assault were accounted for. This is significant because it suggests that prevention programs aimed at addressing both norms and misperceptions may be needed both in primary prevention (i.e., programs aimed at men who have not previously engaged in sexual coercion or assault) and secondary prevention programs (those aimed at men who already have a history of sexual coercion). The proportion of men who have already committed sexual assault in our sample was slightly lower than what could be expected in a college sample (6.8% vs. 8%; e.g., Koss, Gidycz, & Wisniewski, 1987). To solidify inferences drawn from these results, they should be replicated with a sample that has numbers of perpetrators similar to the general college population.

Some researchers (e.g., Malamuth, Sockloskie, Koss, & Tanaka, 1991) have tried to attribute differences in sexual assault proclivity to men's differences in sex drive, interest in, and desire for sex, arguing that some men cannot restrain themselves when experiencing sexual desire. In the present study, no support was found for this notion. Participants' ratings of their own desire to have sexual intercourse if they were in the male character's situation were unrelated to the variables of interest, and, when entered as a covariate, did not lead to adequate model fit or predict intentions to commit sexual aggression significantly. In terms of sexual assault prevention or intervention, countering attempts at internal justification (e.g., "I could not control myself") and instead emphasizing the ability to control one's own behavior as well as emphasizing other people's ability to control their behavior to make this a normative expectation might be especially fruitful.

Another interesting lack of finding was that age was not related to any variables of interest. Of course, studying a college population severely limits age range. However, developmental research suggests that students undergo great changes during college, such

as, for example, developing their own norms and beliefs. From this line of research, it could be expected that older college students may be less susceptible to norm influences than younger ones. However, this was not supported by the data, despite having a fairly representative age range in the sample. Such a result points to the potential powerful influence norms can have.

Limitations and Future Research

One limitation was the weak norm manipulation. On average, participants completed the study in much less time than expected, and it can be assumed they only spent a minimal amount of time looking at the four posters that conveyed the messages designed to manipulate norms. No fixed or minimum time was set that participants had to spend studying the messages. However, despite this type of manipulation, we found a significant interaction between norms and perceived sexual intentions, making the results especially important as their effects in the real world are likely stronger. Because the difference between the prorate and no norms (neutral) condition was nonsignificant (albeit with a trend in the expected direction), this was not terribly surprising. Particularly given the nature of the norms manipulation, its brevity, and the message coming from an university employee, we suspected that it would be harder to induce prorate norms in students under these conditions, even though we took precautions such as minimizing interactions with students, assuring anonymity, and having a male research assistant of similar age as the participants run the experiment. It appears that despite this precaution, receiving antirape normative messages might be more credible to participants coming from somebody formally associated with the university compared with prorate norms. This makes sense when considering social desirability and known antiassault norms formally propagated by the university the subjects were attending (e.g., the university participates in sexual assault awareness month in several ways each year, and fliers and advertisement depict antirape norms across campus). Follow-up studies should attempt to secure a slightly stronger manipulation of norms, by, for example, requiring participants to spend a set amount of time reading the messages or asking the participants to memorize or think about the messages and recall them later. Doing so might also address why we found relatively low absolute predicted probabilities (i.e., for the most at-risk group, the predicted probability of self-reporting intentions to be sexually coercive was still $<.5$). Yet, because this study was concerned primarily with adding to the foundational knowledge about mechanisms of sexual coercion rather than applications, we believe that the relative increase in predicted probabilities of the men with prorate norms and high perceptions of sexual intent in women is very important and adds to our understanding of how the interaction of societal (norms) and intrapersonal variables (e.g., perceptions of sexual intent) relate to perpetrating sexual coercion.

Another limitation of this study comes from the lack of ethnic diversity in the sample. The effects of race could not be examined because of the small proportions of non-White participants. Future studies should make an effort to include more non-White individuals, and assess control for the effects of race to see whether the results can be replicated in a more diverse sample.

Along the same lines, ideally the results of this study should be replicated with a stratified sample mimicking the general population of college-age men in the United States rather than using a convenience sample of self-selected students. Self-selection tends

to be a concern in all studies, particularly in those assessing sexual behaviors, and one could make the argument that those men who are more forthcoming, open, or possibly aggressive with their sexuality are more likely to participate in studies that require disclosure of personal sexual preferences and behaviors. However, recruitment materials for the current study did not emphasize interest in personal sexual behaviors, but instead focused on the use of sexual attraction in advertisement. Consent to the second part of the study informed students about the study's questions related to sexual behaviors as well as inclusion of sexually explicit material, but no student refused participation in the second part. Nonetheless, it is possible that some students did not sign up for the study in the first place because of their discomfort with the sexual content of the studies.

Another limitation of the current study is its cross-sectional nature along with the use of intentions or likelihood self-report ratings as a proxy measure of future engagement in sexual assault. Because of obvious ethical reasons, committing sexual assault can never be investigated directly in the lab, and using intentions is the proxy measure of choice. However, future research ideally could be conducted in a longitudinal fashion with follow-up with participants after several years to assess actual rates of committed sexual assault retrospectively through self-report and/or access to appropriate records.

Implications and Conclusion

This study provides some initial evidence for the importance of considering interactive factors in the prediction of risk for sexual assault or coercion. Even though the manipulation of norms was for ethical and practical reasons brief, and the assessment of overperceptions of sexual intentions was based on the men's ratings of a 30-s observed interaction between a man and a woman, a significant interaction of norms and perceptions could be demonstrated. In real life, men are likely exposed over and over to similar normative messages, which have a cumulative effect on one's own norms. Prevention or intervention programs aimed at changing norms could be improved if they were targeted more toward males especially at risk, namely those who, in addition to being exposed to environments that convey rape-conducive norms, also have higher than average perceptions of sexual intent. Such programs could also combine interventions aimed at changing norms, with education and interventions geared toward lowering perceptions of sexual intent. Indeed, including relatively simple educational messages explaining research findings that point to differences in how men and women communicate friendliness versus sexual intent and how men evolutionarily tend to perceive greater sexual intentions in interactions may help lower risks of sexual assault. The results of our study, although not demonstrating a direct relationship of perceptions of female intent and sexual coercion, seem to suggest that by lowering perceptions of female intent across the board, the risk for men who would otherwise be at greatest risk of perpetrating (those also exposed to rape-conducive norms) could be mitigated somewhat. Such interventions may be easier to implement than interventions aimed at changing norms because college age men are likely to be exposed to norms that would counteract such interventions on a regular basis as part of participating in the college culture and activities.

Research on sexual aggression perpetration has generally suffered from loose definitions of key constructs and confusion of constructs.

Furthermore, the vast majority of this line of research is not experimental in nature. The current study provides the first experimental evidence we are aware of that experimentally examines the interactions of norms and overperceptions of sexual intentions. Therefore, this study provides valuable insight into the interplay of important mechanisms in sexual assault perpetration. It also offers some clues to potential valuable improvements that can be made to existing prevention and intervention programs aimed at reducing the alarming rates of sexual coercion and assault on college campuses.

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Appendix

Hypothetical Sexual Encounter Scenario Given to Participants (Adapted from Willan & Pollard, 2003, to Fit American Students)

It's 11.30 p.m. on a Friday night, and you are at a night club in town, standing at the bar with a couple friends. You feel pretty good about yourself in your new shirt and jeans, and are confident in the way you look tonight. An attractive woman walks towards you and stops at the bar to order a beverage. She fumbles in her purse for a while apparently looking for more change to pay for her beverage. You reach into your pocket, find some change, and walk over to introduce yourself and give the bartender the extra money—a quarter—she was missing. The woman smiles at you and introduces herself as Cindy. She offers you a cigarette and also finds a quarter to refund you the money. You stand together and talk about each other's majors, courses, and the impending exams. You offer to walk Cindy back to a party at a nearby house, close to the residence halls where you both live. Cindy accepts.

At the party, you sit with Cindy and talk about your common interests in certain musical groups. You spend a couple of hours enjoying yourself with Cindy, and towards the end of the party you set off together to your residence hall. You arrive at your room first, and offer to make Cindy a coffee. Cindy accepts and comments that she must leave shortly. In the room, you play some

music performed by the groups you know Cindy likes and you both sit on your bed. You both start kissing each other. While passionately kissing, you touch Cindy's breast through her shirt, to which she does not object, but continues kissing you some more. You put your arm around Cindy's shoulders and continue to passionately kiss and caress her, and you both lie down on the bed. Cindy lets you continue to touch her breasts and you remove her bra and blouse. While kissing her breasts, you begin to stroke Cindy's thighs and she lets you touch her vagina.

While you and Cindy are lying down on the bed passionately kissing, you continue to touch Cindy all over. You remove your jeans and underwear, and Cindy lets you remove her skirt and underwear. You both lie back down on the bed and proceed mutually petting each other. You are about to move on top of Cindy to proceed with intercourse, when she is trying to move away from you and says it's really time to go.

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