

2011

The influence of perceived social norms on the relationship of perceptions of sexual intent and commitment of sexual aggression

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**The influence of perceived social norms on the relationship of perceptions of sexual
intent and commitment of sexual aggression**

by

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A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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2011

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Abstract

This study experimentally investigates the influence of different norms regarding the acceptability of sexual coercion, over-perceptions 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. Results of a logistic regression showed significantly increased odds of reporting likelihood to engage in sexual assault when male college students were exposed to rape-conducive normative messages and also perceived high sexual intentions in a woman. Implications and limitations of this research are discussed.

Introduction

Rape and sexual assaults on college campuses has been a significant problem for decades. In a landmark study Koss, Gidycz, and Wisniewski (1987) found that more than one in eight of the 6000 college women they sampled had been a victim of sexual coercion that meets the standard legal definition of rape or attempted rape. Similarly, Shapiro and Schwartz (1997) found 22% of the females they sampled had experienced date rape. Koss and colleagues (1987) also found 25% of the male students sampled admitted to having used verbal or physical coercion to obtain sexual activities from a woman before. This makes college the time in a person's life when they are extremely vulnerable to becoming victims (females) or perpetrators (males) of sexual aggression. Given these statistics it is clear that sexual assaults are not perpetrated by only a small minority of males that could be written off as social misfits or mentally impaired. Not surprisingly then, researchers have been examining the factors contributing to young college males becoming perpetrators of sexual assault.

While this increased attention to the factors that contribute to the perpetration of date rape is an important step, unfortunately the vast majority of studies examining this issue are correlational in nature. To make causal inferences, correlational studies are not sufficient. However, the study of date rape encounters obvious obstacles for experimental designs, such as ethical concerns as well as antecedent factors to rape that are hard or impossible to manipulate. On the other hand, a large body of literature suggests multiple factors influence a man's propensity to engage in forced sexual activity. Many of these could be empirically tested, but few have undergone rigorous scientific study so far. In

the current study, I want to experimentally look at two factors that have been consistently linked with engagement in forced sexual activity: perception of sexual intent and perceived norms.

This dissertation will provide experimental and empirical evidence of the importance of perceived norms (“peer pressure”) and its interaction with men’s tendencies to over-perceive women’s sexual intentions. While there have been studies linking a tendency to over-perceive sexual intentions to sexual aggression, the majority of these studies are not experimental in nature and do not provide insight into the interactions between over-perception and other variables of interest. Furthermore, retrospective reports from perpetrators of sexual assaults as well as surveys assessing various enabling factors related to sexual assault have consistently cited the importance of peer pressure and perceived expectations that using some force in obtaining sexual contact is normal or even desirable. Some of the most relevant studies will be briefly reviewed below. A full review can be found in chapter two.

Perceptions of Sexual Intent

Over-perceptions of sexual intent have been implicated in the perpetration of date rape and sexual coercion. Abbey (1982) first studied gender differences in the perception of sexual intent. While most men are able to reliably and correctly distinguish unambiguous friendly cues from unambiguous seductive cues, most real life dating situations and getting-to-know-each-other interactions happen in a gray zone in terms of the clarity of social cues transmitted. Partners rarely send out unambiguous signals both to avoid embarrassment and rejection, and also because dating situations are inherently

ambiguous in nature as the persons involved are often not quite sure themselves about whether they want to pursue a relationship going beyond platonic friendship at the outset of relationships. It is in these ambiguous interactions that men generally tend to attribute more sexual intentions into actions than women, both when rating male or female actors. In other words, males and females appear to have different standards for what constitutes cues to signal sexual interest, and males have a lower threshold for classifying behaviors as conveying sexual interest and intent (Haselton & Buss, 2000).

More recently, Willan and Pollard (2003) directly examined male students' perception of sexual intent and expectations for intercourse to occur across different stages of pre-coital activities. Perceiving consent to all sexual activities at the earliest stage (kissing) was most predictive of men's likelihood to use coercion later when they woman refused more sexual activity. Abbey and colleagues (2001) also asked college males to describe a sexual assault they committed. They found males who had committed sexual offenses had over-perceived women's intentions to engage in sexual activities more often and for longer periods of time than males who were not sexually aggressive.

In addition to perceiving sexual intent in interactions earlier than women, research has also shown men to have generally more interest in sexual activities and to be interested in sexual activities earlier in a relationship than women (Haselton, 2003; Shotland, 1989). This gender difference may lead to frustration and misunderstandings. It may also help explain why men tend to infer sexual intent in ambiguous behaviors before the threshold for women is reached. Men who are unaware of these differences in the moment may feel teased or assume that the woman has changed her mind after already

signaling sexual interest to them. Such misunderstandings of cause are not excuses or mitigating circumstances for behaving sexually coercively to get one's wishes fulfilled. However, studies have documented that most adolescent males (56%) agree with the belief that being teased or led on by a woman gives the male some right to use coercion to obtain sexual activity (Giarusso, Johnson, Goodchild, & Zellmann, 1979). By college age, the percentage of males endorsing this belief has dropped slightly, but this still leaves a sizable number of college males who believe a woman demonstrating sexual intent justifies the use of coercion if she is not willing to go through with the sexual activity (Cook, 1995).

Judging sexual intent in a woman happens largely in the interactions during the minutes or hours immediately preceding the actual decision to act sexually aggressive or non-aggressively. It is therefore a very proximal factor to the behavior of interest (sexually aggressive response vs. backing off from sexual activity). Over-perceptions of sexual intent are also particularly relevant for the type of sexual assault that is studied in the current paper. Research has shown the vast majority of sexual assaults committed in college happen between people known to each other, either during formal or casual dates, parties, or spontaneous social interactions (Abbey, McAuslan, & Ross, 1998). However, not all men who over-perceive 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 other factors internal to the potential perpetrator come into play when men are making decisions to behave sexually aggressive or sexually non-

aggressive. Another factor consistently noted in the literature is perceived norms regarding acceptable sexual behavior. The goal of the current study is to examine men's perception of sexual intentions as well as perceived norms and these factors' interaction empirically. Research regarding this factor will be discussed in more detail below.

Perceived Norms

The social psychology literature distinguishes between two types of norms: injunctive and descriptive norms. Descriptive norms are statements that refer to actual behavior, such as "35% of men have sexually assaulted a woman before." Injunctive norms on the other hand, refer to a perceived judgment about the acceptance of a behavior. The conclusion that using some degree of force to obtain sexual activity when the woman is unwilling is acceptable is an example of an injunctive norm. Therefore, descriptive and injunctive norms refer to cognitions about what people actually do and what they are expected to do. Personal norms are a person's own norms regarding the occurrence and acceptability of certain behaviors. Perceived norms are what a person thinks are the cultural norms of their group, keeping in mind that culture here can refer to a relatively small cultural group, such as male college students, fraternity brothers, or friends.

Perceived social norms can have a powerful impact on a person's behavior. Studies that interviewed males who committed sexual assaults during dating found that a sizable portion of offenders commented on the influence of peers, and pressure they perceived to engage in sexual activity as a motivator for behaving more sexually aggressive (Berkowitz, 1992). Social psychologists have also long studied the role

subjective norms play in socially undesirable behaviors. Neighbors, Larimer, and Lewis (2004) found that giving new normative information regarding how much college students drink in general actually led to a reduction in participants' self reported drinking. They assessed college students' self reported alcohol consumption, and at the end of the assessment students were provided feedback on how their own drinking and their perceived norms regarding drinking compared to actual behaviors of the typical college student. Participants viewed the normative information on a computer screen for one minute and were given a printout of the new normative messages to take home. Students were again assessed later in the semester, and overall students who received the normative feedback reported less alcohol consumption than those who only reported their norms and alcohol consumption. Similar results have been replicated numerous times, both with alcohol and also with other undesirable behaviors such as littering (Cialdini, Reno, & Kallgren, 1990), as well as to prevent HIV infections (Albarracin, Gillette, Earl, Glasman, Duranti, & Ho, 2005).

An explanation for this change in behavior is provided by Borsari and Carey (2003). They theorize people will compare their behaviors to 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. Neighbors and colleagues' study, participants corrected their perceived norms (overestimating drinking behavior in others) downwards and then adjusted their behavior to fit the new norm. These and similar studies demonstrate the importance of norms and how they can be relatively easily influenced to the point where they impact actual behavior. Although all these studies attempted to

make undesirable behaviors less likely, there is no reason to assume norms could not also impact behavior in the other direction, namely to make undesirable behaviors more likely.

Further support for the importance of perceived norms in the commission of sexual assaults is provided by research that looks at how previous experiences with violence relate to sexual aggression. Lyndon, White, and Kadlec (2007) found that males 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. Being exposed to violence in the home makes sexual aggression more normative and acceptable.

Most students attend college as they are transitioning into adulthood, at a time when they are still figuring out their own moral values and standards. During these years, they are especially susceptible to outside norms and these 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 acceptable of sexual aggression, objectifies women and portrays them as a commodity available to satisfy males' sexual needs, they will likely be impacted by these norms, and may change their own sexual tactics (Boeringer, Shehan, & Akers, 1991).

In summary, norms (1) are cited as important factors by perpetrators of date rape and sexual coercion who were interviewed in research studies looking at intrinsic factors of sexual assault, (2) can have powerful effects on a person's behavior as demonstrated

by numerous studies not restricted to aggression, (3) can be manipulated more easily in an experimental situation, (4) are more salient and people are generally able to verbalize their norms well, which makes them suitable for empirical study, and (5) norms are propagated through people's expressions of their beliefs and attitudes, and therefore seem to be a suitable aggregate to represent a host of underlying beliefs, values and judgments a person has, and are more proximal to the decision to engage in sexually aggressive or non-aggressive behaviors than beliefs and attitudes.

Although research looking at correlates of sexual aggression has examined constructs, which included social norms before, these measures have not been very clean in terms of the constructs they are measuring. For example, two items on the Rape Myth Acceptance Scale (Burt, 1980), ask responders to indicate what percentage of women make up a rape. This is an example of a descriptive norm. However, most of the other items do not assess norms. It is important to assess and differentiate between different constructs such as perceived norms in order to make valid inferences regarding their role in sexual assault perpetration. Studies examining antecedents for sexual assault however have largely focused on offenders' beliefs, attitudes, and personality factors, and no study to date has experimentally studied the influence of perceived norms on sexual assaults.

Current Study

In the current study over-perceptions of sexual intent are assessed by having participants rate a casual male –female interaction in terms of perceived 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 over-perceive sexual

intent. Norms regarding the acceptability of using force to obtain sexual activity are 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. It is hypothesized that men who do not perceive social cues accurately (i.e., over-perceive sexual intent in casual interactions) will endorse greatest intentions to engage in forced sexual activity if they are exposed to norms that convey acceptance of coercion to obtain intercourse (Figure 1). In other words, I expect to find an interaction of over-perceptions of sexual intent and norms. In the absence of norms encouraging or tolerating sexual aggression and the objectification of women, even men who have a tendency to over-perceive sexual intent are expected to not endorse greater aggressive sexual intentions than those who have more accurate perceptions.

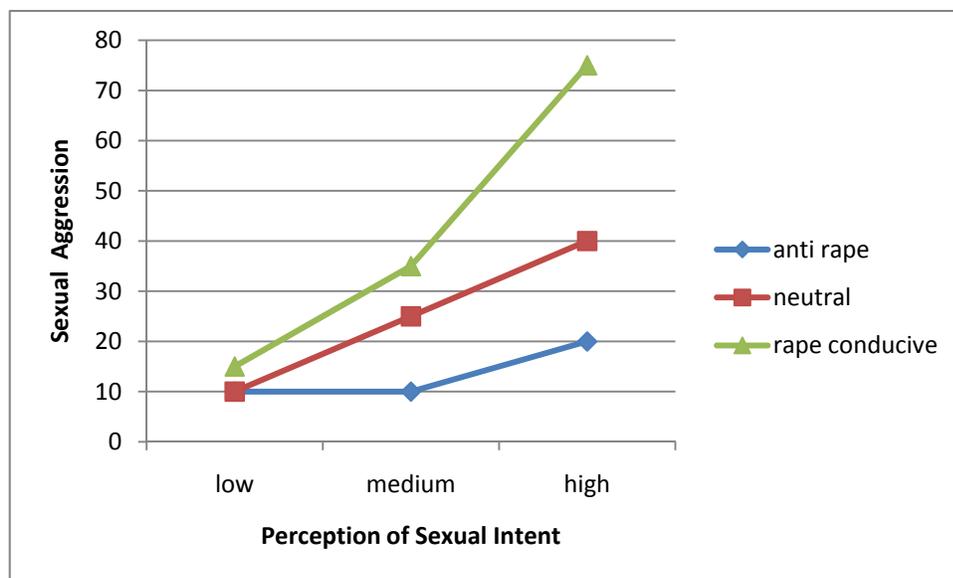


Figure 1. Hypothesized Interaction of Rape Norms and Perceptions of Intent

This study will add to the existing literature on date rape and sexual coercion by examining the possible interactive effects of sexual assault accepting norms and over-perceptions of sexual intent, and doing so using an experimental design. This will allow 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. Findings can help explain why seemingly normal and well-adjusted young men engage in sexual assault in college, and can also provide valuable information regarding the prevention of sexual assault. Furthermore, the results may also provide some insight into the gap between sexual assaults reported in studies by women (25-50%) and the much lower reports of perpetrated sexual coercion (around 10%) by men. If norms play an important role, males that do commit sexual coercion will find their behavior normative and are unlikely to consider their actions as sexual assault.

Review of the Literature

This review of the literature will begin with a general overview of the problem of date or acquaintance rape on college campuses. Important studies estimating prevalence and incidence of sexual aggression will be reviewed, followed by studies looking at specific external factors contributing to sexual assault in college. I will then address some methodological issues important in the study of sexual assault. The review will continue with theories regarding the perpetration of sexual aggression and will shift to intrinsic factors of offenders. Specifically, I will review the literature pertaining to beliefs and attitudes conducive to sexual assault and the literature pertaining to hypothesized miscommunication between the genders as a contributing factor to sexual assault. This literature review will conclude with the two factors that are the object of the current study: the influence of norms and the over-perceptions of social cues judged to signal sexual intentions, and how these can alter judgment and decision making.

Given the different nomenclature used by different researchers, it seems prudent to clarify terms that will be used in this dissertation at the outset. Rape in the literature is generally defined as oral, anal or vaginal penetration with the penis, fingers, or a foreign object against a person's will or when the victim is incapable of giving consent due to age or mental or physical condition. Sexual assault encompasses rape and other sexual offenses such as unwanted touching, kissing, and fondling. The terms sexual coercion and sexual aggression will be used to describe any actions done to gain compliance to engage in sexual activities with an unwilling partner. This can include verbal or physical

coercion, as well as the administration of substances with the goal to lower resistance to sexual activities.

The literature of general aggression and interpersonal violence also makes a distinction between the terms violence and aggression (Anderson, Berkowitz, Donnerstein, Huesman, Johnson, Linz, et al.)

2003). Violence is seen as an extreme form of aggression. Sexual aggression can range from relatively minor incidents such as trying to coerce a date into having sexual intercourse by threatening to not to pursue the relationship otherwise, to severe forms such as violent forcible rape. However, it is less common to make this distinction in sexual aggression research and since this dissertation examines both minor and more severe forms of sexual aggression the terms sexual violence and sexual aggression will be used interchangeably.

Prevalence

College violence and aggression have been concerns to campus administrators, parents, and students' alike and sexual aggression has been a subject of research for decades. Kanin (1957) reported 62% of freshman women sampled stated they had been a victim of "offensive and displeasing sexual aggression." In the 80's, Koss and colleagues conducted studies estimating college dating violence, including sexual aggression, to be so prevalent that most women were effected (Koss & Oros, 1982). For example, in 1987 Koss and her colleagues sampled over 6000 women from 32 colleges and universities in the United States (Koss, Gidycz, & Wisniewski). Over 53% of respondents stated they had experienced some form of sexual victimization since age 14. Of these women, 12.1%

reported having been victims of an attempted rape, and an additional 15.4% reported having been the victim of a completed rape. However, only 5% of victims in Koss' sample had reported their assault to police. Twenty-five percent of men in Koss' sample reported perpetrating some form of sexual assault, and eight percent of the men reported perpetrating acts that meet the legal definition of rape. Russell (1982) stated that the group most likely to be victims of rape was women between 20-24 years of age. Men are most likely to commit rape between the ages of 20 and 24. Therefore, college seems to be the one of the most vulnerable times in a person's life to become victim or perpetrator of sexual violence. Similar numbers as those reported by Koss and colleagues have been found by other researchers (e.g. Byers & Eno, 1991; Craig, Kalichman, & Follingstad, 1989; Lisak & Roth, 1988). Specifically looking at sexual aggression that happened during casual dates, Muehlenhard and Linton (1987) found seventy-eight percent of women surveyed reported having experienced sexual assault, and 57% of men admitted to sexually assaulting a woman.

More recently, Testa, Livingston, Vanzile-Tamsen, and Frone (2003) sampled over 1000 women from the community. Lifetime prevalence for experiencing forcible rape was 9.9%, and lifetime prevalence for experiencing rape while being incapacitated due to drugs or alcohol was 9.4%. Testa and colleagues found having an older boyfriend and drug use before age 18 predicted both types of rapes. Alcohol use before age 18 was associated only with being raped while incapacitated, and childhood sexual abuse was associated only with being the victim of forcible rape. McCauley, Ruggiero, Resnick, Consenti and Kilpatrick (2009) interviewed a national sample of 1980 women ages 18-

34. They found a lifetime prevalence of rape in this sample to be 11.2%. Alcohol use and abuse has also been implicated in campus sexual assaults. Research has consistently linked sexual assaults to the consumption of alcohol in the perpetrator, the victim, or both. Koss (1988/1998) found 74% of men and 55% of women involved in a sexual assault reported using alcohol before the assault occurred. Similarly, in Muehlenhard and Linton's (1987) sample, 55% of men and 53% of women reported using alcohol before the incidence.

Issues in Measuring Sexual Aggression

Discrepancies exist in the statistics reported for both sexual victimization experiences as well as reports of sexual assault perpetration. Getting accurate and reliable rates with regard to sexual assault victimization and perpetration has been difficult. These differences in reporting are largely due to methodological issues. Rape is generally defined as an act of sexual penetration (oral, anal or vaginal) against a person's will by use of force or threat of force or when the victim is unable to consent due to age or incapacitation (Fisher, Cullen, & Turner, 2000). Definitions for other forms of sexual assault, e.g. non-consensual touching, are less clear. Wording of questions assessing sexual assault perpetration or victimization can have a great impact on response rates, as can context and data collection methods (Koss, 1993). Having behaviorally descriptive questions generally leads to less ambiguity and enhanced recall as opposed to questions that use labels such as rape or sexual assault. In the current study all items were carefully worded in a way that was most descriptive of the behaviors being studied to minimize one source of measurement error.

Data taken from the national survey regarding reporting crime for example reports much lower rates of sexual victimization than other surveys. This alludes to the fact that sexual assault is one of the most underreported violent crimes in the US (Bureau of Justice Statistics, 2004). Fisher et al. (2000) compared the impact of different wording of questions directly by administering the rather narrow incidence screening report form used for the National Crime Victim Survey (NCVS) to over 4000 women, and then administering a very detailed and behaviorally descriptive survey to a second sample of over 4000 women. Women who were asked using the behaviorally descriptive questions reported sexual victimization at rates 11 times higher than those who were asked using the NCVS survey instrument. Similarly, Fisher (2009) found rape estimates to be 4.4%-10.4% lower when comparing incidence report rates from the National Violence Against College Women Study (direct questions with short cues only) vs. the behaviorally focused National College Women Sexual Victimization study. To minimize underreporting, participants will be assured anonymity, will answer all questions on a computer screen, and will have minimal contact with the experimenter.

The most common instrument to assess for both sexual assault victimization or perpetration is the Sexual Experience Survey (Koss & Oros, 1982), or some modified version thereof (e.g. Koss et al., 1987). Research on the validity and reliability of the SES has been somewhat sparse owing to the fact that many researchers make slight modification to the SES, which makes it difficult to compare data obtained from different studies (Ross & Allgeier, 1996). One published study examining the reliability and validity of the scale reports a one week test-retest reliability of .93, and an internal

consistency of $\alpha = .73$, using a sample of college women (Koss & Gidycz, 1985) to assess victimization, and .93 test-retest reliability with internal consistency of $\alpha = .89$ when administered to college males to assess for sexual assault perpetration. When comparing self-reported sexual assault perpetration to reports in an interview, men generally admitted to more perpetration on the SES than they did with an interviewer present.

More recent studies looking at the overlap between self-reported sexual assault perpetration using the SES and using an interviewer found much agreement of the 2 methods (e.g. Lisak & Roth, 1988). Ouimette, Shaw, Drozd, and Leader (2000) found high consistency in responding to the items describing rape but not labeling it as such across paper and pencil vs. interviewer responding, but found men did not respond consistently to items that used the word rape during the interviewing portion, suggesting underreporting due to social desirability or social anxiety.

Some researchers also are concerned about fabrication and non-disclosure as threats to validity. Intentional over-reporting of sexual victimization (fabrication) is rare, and not considered likely in victimization research (Koss 1993). Similarly, no evidence for over-reporting of sexual aggressive behavior has been found (Koss & Gidycz, 1985; Ouimette et al., 2000; Ross & Allgeier, 1996). Under-reporting however, has been a concern. Koss (1993) distinguishes between intentional non-reporting and unintentional non-reporting (i.e. lack of recall). She identifies unintentional non-reporting as the biggest threat to validity. In sum, researchers advocate using behaviorally specific questions administered via self-report without an interviewer present (Kolivas & Gross, 2007). Therefore, all of our outcome measures will be worded using much behavioral

description to avoid ambiguity and increase the likelihood that recall of relevant experiences will be cued. In summary, prevalence studies clearly demonstrate sexual aggression on college campuses is widespread, poses a significant problem, and further research is needed to look at key factors involved in sexual aggression on campus.

Brief Overview of Commonly Studied Factors in Sexual Aggression

Alcohol use is common in college students and has been researched as a factor in sexual aggression. It is a staple of society and alcohol is often viewed as a social lubricant and known for its dis-inhibiting properties (Brown, Goldman, Inn, & Anderson, 1980). Men report feeling more powerful, aggressive, and sexual after consuming alcohol (e.g. George, Frone, Cooper, Russell, Skinner, & Windle, 1995). Some studies have reported male perpetrators of sexual assault attributed their use of force to being drunk (Kanin, 1984), and men who engage in sexual aggression often report trying to get their date drunk in order to make it easier to verbally or physically persuade her to comply with their sexual requests (Kanin, 1985).

Abbey, McAuslan, and Ross (1998) examined the mutual effects of beliefs surrounding consensual and non-consensual sexual activities, over-perception of sexual intent on the perpetration of sexual aggression, and alcohol via the use of structural equation modeling. Data from 206 self-reported sexual offenders fitted the hypothesized model well. Rape supportive beliefs, dating and sexual experiences, alcohol consumption and expectancies predicted over-perception of sexual intent and the number of self-reported sexual assaults committed. This study demonstrates the complex interactions of numerous variables associated with the perpetration of sexual assault. It is noteworthy

however, that over-perceptions of sexual intentions and likelihood to commit sexual aggression were most proximally related to the actual number of assaults reported.

Other variables that have been consistently correlated with the perpetration of sexual assault are frequent dating activities and early sexual experiences (e.g. Malamuth, Linz, Heavey, Barnes, & Acker, 1995). Malamuth, Sockloskie, Koss, and Tanaka (1991) used structural equation modeling to predict sexual assault perpetration. They found both the number of sexual lifetime partners as well as the age of first sexual experiences together predicted sexual assault perpetration. Malamuth and colleagues hypothesized early and frequent sexual experiences reflect a greater interest and motivation for sexual activity, which may account for the greater use of sexual aggression in those men. Additionally, researchers have suggested more and earlier sexual experiences simply allow for more opportunities to use sexual aggression (Koss, Goodman, Browne, Fitzgerald, Keita, & Russo, 1994).

Reviews of victimization experiences have provided insight into the different types of tactics used to achieve compliance. Verbal pressure is more likely to occur in established relationships and when sexual activity has occurred before (Abbey, Ross, & McDuffie, 1996; Abbey, BeShears, Clinton-Sherrod, & McAuslan, 2004; Testa & Livingston, 1999). Use of alcohol and substances to gain compliance is most often found in dating/acquaintance situations and in settings where alcohol is readily available (e.g. clubs, bars, parties; Abbey, Clinton, McAuslan, Zawacki, & Buck, 2002; Abbey, Clinton-Sherrod, McAuslan, Zawacki, & Buck, 2003; Cleveland, Koss, & Lyons, 1999). Sexual assaults by strangers were most likely to involve use of weapons or force (Cleveland et

al., 1999), however, use of force was also linked to sexual assaults where victim and perpetrator are casually acquainted (Harrington & Leitenberg, 1994).

Theoretical models explaining sexual assault on college campuses

Pezza and Belotti (1995) identify three categories in the etiology of campus violence. While their review is not restricted to sexual violence alone but all kinds of dating violence, the factors they describe are mostly applicable to sexual dating violence as well. Pezza and Belotti identify predisposing, enabling, and reinforcing factors. Predisposing factors include beliefs, perceptions, values and attitudes of the population of interest. Hanson, Turbett and Whelehan (1986) specify common mistaken beliefs regarding violence that may contribute to the perpetration thereof: believing violent people are mentally ill, using mild violence may relieve stress and tension and thereby prevent more serious acts, violence can be attributed to sexual urges, relationships are generally conflict-free, and love will overcome any problems in a relationship. How men perceive interactions, particularly how much sexual intent they perceive in interactions, and their judgment regarding the likelihood for sex to occur also predisposes them to act more or less sexually coercive.

Enabling factors include resources, skills or barriers that may foster or hinder violent behaviors. Enabling factors especially relevant for college age men include being independent and not under direct supervision of parents for the first time in life, peer pressure, being removed from previous support system, and having strong sexual impulses. Norms fall into this category. Some men indeed cite peer pressure as their primary motivation for sexual activity (Berkowitz, 1992).

Reinforcing factors are behaviors of others or intrinsic rewards (e.g. sexual pleasure) that encourage sexual aggression. Society's stance on violence is ambivalent. Even though crime and violence are certainly looked upon badly, popular media depicts a near constant flow of violence, video games encourage adolescents to take on violent roles as the "hero" in a game, and aggression is applauded and encouraged in many sports. The media's influence on increasing aggressive behavior has been well documented (e.g. Bushman & Anderson, 2001). Other notable reinforcing factors include responses by the institution and authoritative figures. For example, a survey of 3300 college deans (Campus Violence Prevention Center, 1990, in Pezza & Belotti, 1995) found only 36% of sexual assaults resulted in penalties imposed by the university, whereas 56% of reported physical assaults resulted in penalties for the offender.

Perceptions of Sexual Intent

Research has looked at many potentially predisposing or enabling factors, such as mental illness, antisocial personality traits, previous exposure to violence, and lack of social or communication skills. One predisposing factor that has been consistently linked to sexual aggression is males' perceptions of sexual intent. Dating situations in general and potential situations in which sexual exchanges could occur are often ambiguous. Most people will not freely state their sexual intentions or give overt signs (Fichten, Tagalakis, Judd, Wright, & Amsel, 1992) to prevent potential embarrassment or rejection if the desired person is not reciprocating their advances. Instead, people resort to behaviors that are ambiguous and could be interpreted as sexual overtures or platonic, friendly intentions (Hennigsen, 2004). Not surprisingly, these ways to communicate

sexual interest or intent can lead to misunderstanding quite easily. Consequences of potential errors in perceptions can range from mild discomfort or embarrassment (Abbey, 1987) to severe adverse outcomes including sexual assault (Abbey, McAuslan, & Ross, 1998; Malamuth & Brown, 1994).

Research investigating gender differences in the perception of sexual intent has consistently shown men to interpret ambiguous behaviors, in other words those behaviors that fall into a gray zone between seductive vs. friendly, as showing greater sexual intent than women. Haselton and Buss (2000) have 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 of the 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 males who consistently miss mating opportunities will be outperformed by others. In situations with an asymmetry in costs from not pursuing mating opportunities as much vs. expending energy in unsuccessful courtship, error management theory predicts a bias in choice will evolve towards the less costly error, even though this strategy leads to overall more errors.

Haselton (2003) replicated these findings by examining 102 females' and 114 males' experiences with having their sexual intent inaccurately perceived or not perceiving a partner's sexual intent accurately in a natural setting. Males and females reported instances of inaccurately perceived sexual intent over the past year. Results were

consistent with predictions from error management theory and showed the males 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 under-perception of sexual intent at equal rates.

This over-perception bias in males holds true for perceiving sexual intent in women's behaviors, other men's behaviors, and their own behaviors as well (Abbey & Melby, 1986). Abbey and Melby examined three non-verbal cues to judge sexual intent: interpersonal distance, touch, and eye-contact. 246 undergraduates were randomly assigned to examine one of ten photographs depicting a man and a woman, with interpersonal distance (far, medium, and close), touch (mutual, female only, male only, ambiguous touch [forearms only], or no touch), and eye-contact (mutual or none) varied. Results confirmed the author's hypotheses. Male participants rated the woman in the pictures and the man in the pictures higher on sexual traits (seductive, promiscuous, flirtatious, sexy, sexual attraction between the characters depicted) than female participants rated them. Both male and female participants judged the woman depicted in the photographs higher on sexual traits compared to their judgment of the man depicted. In this study however, no differences were found based on ambiguity of the cues.

Willan and Pollard (2003) presented students with written scenarios of increasingly intense heterosexual activities, ending with female character's refusal to engage in more sexual activity. Students were asked 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's likelihood to engage in more intense sexual activities at each stage. Male students were also asked to rate their disappointment, anger, and happiness as well as the likelihood they would force the female in the story to more sexual activity after she declined. Results showed 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 males and females 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. Further providing support for perceptions of sexual intent as a predisposing factor, results also showed that men's initial expectations for intercourse to occur based on their judgment of the woman's intent best predicted their self-reported likelihood to use coercion after she refused more sexual activity.

Finally, some researchers have suggested that rapists have distorted perceptions of the rape itself and its impact on the victim. Gager and Schurr (1976) suggest rapists may function under the assumption the victim secretly wants sexual intercourse to happen and experiences pleasure, even if she is overly conveying distress. This notion is supported by the numerous studies that have found most rapists do not recognize their own behaviors as rape (e.g. Wolfe & Baker, 1980). Believing one's own behavior does not constitute rape should protect the rapist from negative feelings he may otherwise have such as guilt associated with committing a violent crime. Males who possess such a

defense mechanism may have lowered inhibitions toward rape, because they have found a way to justify their behaviors (the victim secretly wants it and enjoys the experience) for themselves.

In sum, since Abbey's (1982) original study, research has been conducted on this subject, and studies have consistently replicated Abbey's finding that men perceive females as exhibiting more sexual interest across methodologies such as written stimulus material (e.g. Willan & Pollard, 2003), observing live interactions (e.g. Shea, 1993), or rating photographs (Abbey, Cozzarelli, McLaughlin, & Harnish, 1987). Furthermore, these findings were also replicated using different outcome variables, such as rating a female on personality attributes (Abbey & Melby, 1986), perceived sexual intent (Willan & Pollard, 2003), and the rater's interest in the female (Haselton & Buss, 2000).

Normative influence and sexual aggression

Predisposing and, to a lesser degree, enabling factors related to rape supportive beliefs, acceptance of rape myths (e.g. only women who are promiscuous are raped), adherence to traditional gender role beliefs and values in sexual violence have been researched extensively since the late 70's (e.g. Burt, 1980; Lonsway & Fitzgerald, 1994; Bohner, Reinhard, Rutz, Sturn, Kerschbaum, & Effler, 1998; Demare, Lips, & Briere, 1993). Males who adhere to rape-conducive beliefs and attitudes have been consistently shown to report higher likelihood and higher perpetration of forced sexual activities. Hostile attitudes towards women have also been consistently linked to higher sexual assault proclivity in males (Malamuth & Ceniti, 1986; Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Malamuth et al., 1991). Feminist writers have remarked on how society's

values and descriptions of sexuality may create or reinforce rape supportive attitudes. Sexual activity is often depicted as a conquest, with the male aggressively pursuing a reluctant female with the goal of seducing her (Clark, Shaver & Abrahams, 1999). Being sexually dominant and aggressive may be a way for some men to demonstrate their masculinity, and is depicted as normative and acceptable in society.

Further evidence for the importance of norms comes from research on groups that present a sub-culture within the college campus. Notably, college men who are members of a fraternity have consistently reported highest rates of perpetration of rape in numerous studies (with the exception of Muehlenhard and Linton, 1987). For example, an alarming 35% of fraternity men reported having engaged in forced sexual intercourse in Garrett-Gooding and Senter (1987). Similarly, members of athletic teams also appear to be at higher risk to commit sexual aggression. Hoffman (1986) determined college varsity football and basketball players are reported for sexual assaults 38% more than the average college male. These rates are substantially higher than those found in the general student population (10-25%; e.g. Koss, Gidycz, & Wisnewski, 1987).

Martin and Hummer (1989) analyzed characteristics of fraternities that contribute to the sexual assault of women. Fraternities consist largely of males in their late teens and early twenties, who may lack the maturity to behave responsibly and respectfully if the opportunity for a sexual encounter presents itself. Moreover, fraternity houses lack supervision and are off limits for anyone not part of the group, therefore providing a private atmosphere with little risk of detection. Characteristics that are valued by fraternities are masculinity, loyalty and unity. High endorsement of masculinity

contributes to the development of rape supportive attitudes, while loyalty and unity make reporting a sexual assault less likely, and any investigation into an alleged sexual assault much more difficult.

However, not all fraternities foster rape supportive attitudes. Humphrey and Kahn (2000) studied different fraternities and athletic teams. Students rated the different groups as either having parties conducive or non-conducive to sexual assault. Members of those groups deemed to be more conducive to sexual assault to occur reported more peer support for sexually aggressive behaviors and were more hostile than members of the groups deemed to present a lower risk for sexual assault. Therefore, one cannot generalize to all fraternities or athletic teams, but rather should look at a subset of groups who should be distinguishable from non-rape supportive campus groups. It appears belonging to a peer group that fosters rape conducive beliefs, conveys tolerance for some sexual coercion and is accepting of beliefs that view women as objects puts males at higher risk to commit sexual assault. Such results point to the important role norms may play in the commission of sexual assaults.

Research on norms, attitudes and beliefs has generally used rather loose definitions of, often times including multiple constructs under one heading (e.g. the Rape Myth Acceptance scale has items measuring beliefs, attitudes and norms). Research conducted in such manner as well as retrospective reports of perpetrators points to the importance of norms in the perpetration of sexual assault on college campuses. However, few rigorous, well designed studies examining or manipulating constructs separately has been done, which has made it impossible so far to look at interactions of important

factors, such as social norms and perceptions of sexual intent, which is the focus of the current study.

Another line of research related to norms that attempts to explain sexually aggressive behavior has focused on entitlement and justifications for sexual assault. More than half of the male high school students and more than a quarter of the female students Giarrusso, Johnson, Goodchilds, & Zellman, (1979) sampled agreed with the notion that “being led on” by a woman justifies rape. Males that over-perceive sexual intent in a woman may feel “led on” when she objects to sexual acts, or may view her objections as merely done to comply with societal stereotypes. Such a situation could lead to sexual coercion, although the man may not perceive it as such. Support for this is partially provided by Willan and Pollard (2003), who had men rate a woman’s intent to engage in eventual intercourse over a period of successively more sexual activity. Results showed that males’ initial predictions of the woman’s intentions to engage in sexual intercourse and their initial perceptions of a female’s consent to later have sexual intercourse were most predictive of their reported likelihood to force a female acquaintance to have sexual intercourse. Furthermore, research has found men generally expect to engage in sexual activities early on in relationships than women. Therefore, men may be even more likely to mistake women’s flirting behaviors such as dancing or kissing as a sign 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.

Another factor that may make sexual aggression in dating situations more justifiable to certain males is society’s somewhat ambiguous response to acquaintance

rape. Campbell and Johnson (1997) observed a tendency in lay people to not recognize non-consensual intercourse as such if there was pre-intercourse consensual sexual activity. Congruent with this observation, a survey by Hickman and Muehlenhard (1997) found women to engage in more precautionary behaviors to avoid rape by a stranger than to avoid acquaintance rape. Koss (1988) found that 84% of sexual assaults occur between people that are known to each other.

This body of research provides further support for the important role of norms. Assuming consent to pre-intercourse activities also implies consent to sexual intercourse is a belief that gets shaped by social norms, and so are beliefs that females secretly want forced sexual intercourse. Therefore, altering perceptions and norms about what constitutes non-consensual sexual activity may influence men's likelihoods to engage in sexual assault by changing these factors abilities to enable sexual aggression.

College is for most students the time in their life in which they first live independently and without direct supervision. During this time, young adults also develop moral and social standards for themselves, independent of their parents' norms and values. Because these young adults have not fully developed their own sets of social standards, they are particularly vulnerable to outside influence. Peer pressure becomes a strong influence, and numerous studies have shown that college students admit to engaging in undesirable activities because of peer pressure (sexual activity – Berkowitz 1992; alcohol consumption – e.g. Pederson, LaBrie, & Lac, 2008; marijuana use – Lewis & Clemens, 2008; relational aggression – Schad, Szvedo, Antonishak, Hare, & Allen, 2008). Being exposed to other beliefs and opinions leads people to adjust their own

beliefs in an effort to fit in with others, avoid disagreement, and be liked by others (Goethals & Zanna, 1979; Sanders & Baron, 1977), a process called normative influence.

Research on the influence on being in a group on a person's own beliefs and opinions has generally found that a group's collective opinion as well as the opinions of the individual group members tend to become more extreme than the original beliefs and opinions of individuals expressed before the group interaction (Isenberg, 1986; Myers & Lamm, 1976). Findings from social psychology like these may provide a partial explanation for why member of certain groups (fraternity members, members of athletic teams) have been found to be disproportionately often involved in the perpetration of sexual assaults (Boeringer, 1996; Crosset, Ptacek, McDonald, & Benedict, 1996; Koss & Gaines, 1993). Fraternities and athletic teams are generally very cohesive groups with much interaction among members, and hence may produce larger effects in terms of shifted norms. However, the same mechanisms may be at work for college students in general, who find themselves in close relationships with peers on college campuses, and spend a lot more time with their peer group compared to the years before or after college. When men become part of a subculture during college that encourages dominance over women and views them as objects that can be used to satisfy men's sexual needs, they feel more comfortable perpetrating sexual assault (Boeringer, Shehan, & Akers, 1991; Kanin, 1985, Malamuth et al., 1991). Further contributing to the problem of peer influence and norms is a tendency of people to overestimate undesirable behavior in others (Berkowitz, 2003). In the case of sexual aggression in the context of peer pressure and norms this means college students who are exposed to views that encourage

dominance of women and acceptance of force will assume the norms (in this case what is acceptable sexual behavior) to be even more exaggerated than they actually are (i.e. higher acceptance of force to gain sexual activity; Heimerdinger, 2006; higher estimates of endorsement of sexism in peers; Kilmartin, et al., 2008).

Research looking at the impact of witnessing violence in the home on relational violence in one's own relationships also provides evidence for the importance of norms. Lyndon, White and Kadlec (2007) examined situational as well as factors intrinsic to the offender to distinguish between college males who use different tactics (verbal vs. physical) to gain compliance for sexual activity and non-coercive males. Men who used physical force were more likely to have experienced or witnessed violence in the home (childhood sexual or physical abuse, domestic violence between parental figures) compared to those who used verbal tactics only. Witnessing and being exposed to violence makes violence and aggression more normative and acceptable. Males who had witnessed violence repeatedly, behaved more used stronger forms of sexual aggression than those who were not exposed to violence in the home.

Borsari and Carey (2003) have outlined a two step process of how perceived norms of other people influence behavior. A person first compares their perceived norms to the personal behaviors. This comparison leads to a discrepancy. Norms will then influence behavior because in an effort to eliminate this discrepancy, people will adjust their behavior to fit the perceived norms. This mechanism has been demonstrated in research on undesirable behaviors such as drinking (e.g. Baer, Stacy, & Larimer, 1991; Lewis & Neighbors, 2004), HIV prevention (Albarracin, Gillette, Earl, Glasman,

Durantini, & Ho, 2005), and littering (Cialdini, Reno, & Kallgren, 1990). For example, Neighbors, Larimer and Lewis (2004) demonstrated that simply assessing a student's perceptions of college drinking and then providing correct normative information can lower students' drinking behaviors. In this experiment there was little interaction with the students and the intervention was delivered via computer entirely. Students were simply presented with a message displaying norms on the computer screen for about 1 minute, and then were provided with a print-out of this information to take home. Similar very brief, computer delivered normative feedback interventions have shown to lower undesirable behaviors numerous times (e.g. Neighbors, Lee, Lewis, Fossos, & Walter, 2009; Lewis, Neighbors, Oster-Aaland, Kirkeby, & Larimer, 2007; Walters, Vader, & Harris, 2007).

In sum, previous correlational research has consistently identified over-perceptions of sexual intent as an important variable in sexual aggression. The importance of norms has also been shown both directly (e.g. lowering rape conducive norms lowers sexually aggressive responses) and indirectly (retrospective reports from sexual offenders, research seeking to explain higher rates of sexual aggression in members of fraternities, athletic teams, etc). In the current study, perceptions of sexual intent will be assessed and norms will be manipulated by providing participants specific normative information in the form of normative peer messages conveyed on advertising material. These are designed to lower or heighten rape-conducive norms or leave them unchanged (control). This will enable us to test the role norms play experimentally, as well as test the hypothesis that norms that convey acceptance of sexual aggression and

perceptions of sexual intent interact with each other. We expect when norms are shifted towards supporting more sexually aggressive responses, and men over-perceive women's behaviors as sexual interest, sexually aggressive responses will be most pronounced.

Methods

Participants

Participants were 460 male students over the age of 18 who were enrolled in lower level psychology classes at Iowa State University, and who had self selected to be in this study by signing up on the department's experiment website, SONA. Our study focuses on sexual assault of women by men, because national statistics show 95% of adult victims of sexual assault are women, and the perpetrators of sexual assault of both men and women are overwhelmingly men (Bureau of Justice Statistics, 1995; Tjaden & Thoennes, 1998).

A priori computations of power for the planned analyses (GLM regression analysis with perception of sexual intent as a continuous variable and norms as a dummy coded between subject variable with three levels (rape conducive-, neutral, and anti-rape norms) were made using the computer program, Power and Precision V3. Using a least powerful scenario in which the effect size for each of the main effects was set to zero (no predicted change in R^2), and a conservative estimate of effect size for the interaction (assumed R^2 change = .10), using 40 participants per condition will result in power = .83, assuming an alpha level of .05 two tailed, which lead to the originally proposed 120 participants total. However, due to smaller than expected effect sizes, expected necessary deletion of participants due to not meeting inclusion criteria (e.g. not self-identifying as heterosexual) and a strong participation rate, substantially more men participated in the experiment.

Measures and Stimulus Material

Participants were shown a brief commercial depicting the interaction of a male and female character, under the guise of being asked to evaluate the commercial's suitability to advertise the product (a soda) shown. To assess participants' perceptions of sexual intent, participants responded to a questionnaire that included the three items originally included in Abbey's (1982) landmark study on perceptions of sexual intent, asking participants to judge the degree to which the female depicted behaves flirtatious, seductive, and promiscuous. However, since there has been some concern noted in research that these adjectives are biased towards females more, and following recommendations by Shotland and Craig (1988), the questionnaire was expanded beyond these three items (see Appendix A). Adding more items in this fashion was expected to yield better reliability compared to single item measurements. All items were answered on 11 point scales ranging from 0 – completely disagree to 10 – completely agree. A scale with more answer options was chosen to increase variability in answers despite known strong floor effects common in this line of research. In the present sample, reliability for the full scale including all new items was good, $\alpha = .84$. Unfortunately, construct validity of the full scale compared to the original scale was questionable, since the original scale as suggested by Abbey (1982), but not the new scale, was related to the other variables of interest as expected and proved to be a valuable covariate in further analyses. Hence, for the main analysis, Abbey's original version was used ($\alpha = .77$).

Participants' intentions and likelihood to use sexual aggression were assessed using their responses to a hypothetical scenario depicting a sexual encounter with a newly

acquainted woman. This scenario was adapted from Willan and Pollard (2003), with changes made to reflect American students' experiences and colloquial expressions (e.g. in the original scenario the couple meets at a cigarette machine, the word "trousers" was replaced by pants, etc.; see Appendix D). A forced choice option for a participant's first, second, third and fourth response to the scenario was presented, asking participants what they would do next if they were in the situation presented in the scenario. Asking for subsequent responses after the first one was done to decrease the chances that social desirability washes away effects. A study by Holtzworth-Munroe and Kimberly (1991) found male batterers to answer no differently from non-batterers when asked to indicate their response in a situation. Differences between batterers and non-batterers became apparent only after the first or second obviously socially correct answer was exhausted. This is presumably because of social desirability. Both groups of men know the socially "correct" and acceptable way to behave in a situation, which they could indicate when asked. However, aggressive men run out of non-aggressive response options sooner, which can be detected by using a paradigm as described above. The answer options that were presented to participants can be seen in Appendix E.

Because of the ordinal nature of the data that was produced, two ways of computing the composite dependent variable derived from such paradigm were considered. The first option consisted of assigning numerical values to the listed behaviors by ranking them in terms of severity of the coercion. Four female counseling graduate students were asked to rate the behaviors listed, and based on their ratings a ranked list was made. There was good agreement among raters, inter-rater reliability =

.97 (using an approximation of an intra-class correlation coefficient suggested by Ebel, 1951). Based on these ranks, participants received an average score across the 2nd to 4th answer option. Averaging scores from an ordinal scale in such fashion should produce a final composite score that can be treated as if it came from an interval scale for the purposes of further analysis (D. G. Bonnett, personal communication, 2010).

This way of scoring however was abandoned for two reasons discussed now. Upon inspecting the data it was discovered that some participants endorsed severe options of sexual coercion early on (i.e. on the first response option), but answered “let her leave” subsequently, a pattern that would not be adequately captured by such scoring. For example, numerous participants endorsed sexual assault as their first answer option, but, if they were asked to imagine their first choice did not work, they answered they would let the woman leave on the subsequent answer prompts. Furthermore, it proved very difficult to achieve adequate inter-rater reliability to classify the open ended response choices into the 11 behavioral categories, even after repeated training sessions. For these reasons, the second option of scoring was used to compute the dependent variable.

The second scoring option computed the final score by classifying the possible answer options into four criteria which were assigned the following scores: 0- non violent behavior (response indicates to leave the situation, or let the woman leave), 1 – mild verbal coercion without any threats (e.g. tries to talk to woman with intent to persuade her to more sex if she is agreeable), 2- verbal coercion or name calling including threats for negative consequences (e.g. “You lead me on, bitch”), 3- not discontinuing sexual

behaviors/disregarding her wish to stop (e.g. continue genital stimulation, acting as if he didn't hear her), or 4 – exaggerating sexual behavior even more or using physical constraints (e.g. attempting penetration, holding her down).

Answers across the four subsequent response prompts were classified accordingly by four raters: the author and one of three highly trained undergraduate research assistants rated and classified all responses. Average inter-rater agreements (kappa's) ranged from .76 to .89. Discrepancies amongst raters were resolved through numerous joint meetings during which discrepant ratings were discussed and a consensus found. The highest value (e.g. the most severe action the participant indicated he would do) across response options became the dependent variable. This ensured no sexually coercive response was missed, regardless when it was given by participants.

Because the above described response paradigm is a relatively novel approach, the “standard” outcome measure in studies of sexual aggression, which is the participants’ self-reported intentions to engage in sexually aggressive behaviors, was also used. The scenario used in the present study is taken from Willan and Pollard’s study and even though the manipulations are different, the outcome measures they used appear suitable for the purpose of the present study as well. Participants were asked to their likelihood to force the female to different kinds of sexual activities after she refuses. Items asking for likelihood ratings in such fashion have been commonly used, but because they are for the most part single item measures no data on reliability is available. However, Malamuth (1989a, 1989b), has done extensive research examining intentions to engage in sexual activities that are not generally socially acceptable (e.g. forced intercourse, group sex,

etc.). When questions are posed so that anonymity is guaranteed and the participant does not fear any consequences, likelihood estimates obtained by asking participants in such fashion correlate highly with self-reported engagement in sexual aggression (Appendix F). In the present study, the three questions of likelihood to commit sexual aggression were highly correlated with each other (r 's ranging from .82-.90) and were collapsed to form a composite measure of mean intentions to commit sexual assault.

As potential covariates, perceived desire of the female character to engage in various sexual behaviors (kissing, touching, petting and intercourse) as indicated in the story, were also assessed. These ratings were made on continuous scales expressed in percentage from 0%-100%. The participant's desire to engage in the same behaviors picturing himself in the situation of the male character in the story, were assessed in the same fashion.

The study ended 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 (Appendix G). The SES has been used in research extensively, and has been shown to have good reliability and validity. Koss & Gidycz (1985) for example report a test-retest reliability over one week of .93, and an internal consistency of .89 using the scale on a large, national sample of college males. In the present study, only the four final items of the SES were summed to assess for pre-existing engagement in sexual assault, 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 the woman wanted more sexual behaviors than the male or vice versa). Internal consistency for the full scale was $\alpha = .66$; for the last four items $\alpha = .73$ in the present study.

Procedure

Participants who were assessed in person ($N = 320$) were greeted by a male research assistant and were let into the experiment room. The research assistant gave participants a brief overview of the experiment to make sure they were here for the correct experiment, and obtained informed consent from participants (Appendix H). Participants were told they would be taking part in two short studies which had been grouped together because of the brevity. Participants were led to single rooms equipped with a computer workstation, and were told for the first study they will be evaluating TV as well as printed advertisements. They were then instructed to watch a brief video clip without sound on the computer depicting a commercial followed by a questionnaire. The participants viewed the clip without sound so they could focus on the non-verbal interactions, and because the sound was about the product being advertised in a different language, which was thought to be distracting. Participants viewed the commercial, and then answered a questionnaire that included the perceptions of sexual intent items as well as filler questions designed to keep participants from guessing the experimental hypotheses (see Appendix A for the questionnaire). Participants saw a message explaining that the task now switches to printed media, and that they would be evaluating messages directed at college students in residence halls to promote knowledge about

college students' sexual behaviors. Each participant saw four posters. On each poster, a normative message was printed congruent with the condition the participant was assigned to (i.e. anti-rape, neutral, or pro-rape). The messages were varied across conditions, but the poster background stayed the same. Participants were asked filler questions after viewing each poster, and were asked two questions inquiring about the content of the posters after all four were viewed, which served as a manipulation check. Participants who were unable to answer the two questions regarding the content of the posters correctly were eliminated from later analyses, because they were unlikely to have paid enough attention to the study to be influenced by the manipulation (no participant was eliminated due to this).

The posters contained manipulated normative messages that varied according to condition (see Appendix B for messages, Appendix C for questions). After the participants answered all questions, they were instructed to let the research assistant know they are finished and ready to start the second study. The research assistant returned and gathered informed consent for the second study for a second research credit. All participants agreed to take part in study two, which was explained to them as investigating sexual behaviors and situations college students sometimes find themselves in. After signing the second consent form, the participant read the scenario – (see Appendix D), and filled out questions measuring the outcome variables (see Appendix E and F). Once the participant had concluded this task, the research assistant fully debriefed the participant following the debriefing protocol outlined in Appendix I, to ensure the participant fully 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 the Couples and Family Clinic at Iowa State University. No adverse effects were reported by participants during debriefing.

Participants who completed the study online ($n = 150$) went through essentially the same procedures except that all instructions were given on a computer screen instead of by a research assistant. Participants online went through the same debriefing protocol as those participating in person, except that it was also given on the computer screen.

Results

Preliminary Analyses

Of the 460 participants, 78 were excluded from the analyses because they met one or both exclusion criteria: (1) they did not self identify as heterosexual and thus could not be expected to have reliable and valid ratings on the pertinent questions asking, for example, how much they found a female sexually attractive ($n=19$, 4.9%), or (2) they did not endorse ever having had any consensual or non-consensual sexual experiences in the past ($n=67$, 14.6%). Participants who had never had any kind of sexual experience were excluded because it was feared including them would lead to a confound based on religiosity (which was not assessed separately). This was suspected because (a) the proportion of college students age 20 (average age of participants) who have not had any kind of sexual encounters and choose so for non-religious reasons is small in the general population and (b) inspection of fill-in-the-blank answers revealed people in this subgroup to respond often with statements like “Sexual relations before marriage is a sin; I would never be in this situation in the first place”. Hence, coding all these participants as zeros on the dependent variable would lead to additional skewness and floor effects likely due to confounding effect of religious views.

These cuts led to a final group of 382 male, heterosexual participants who had some prior sexual experiences. These students were on average 20.1 years old ($SD = 2.8$ years). 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 appears to be consistent with the general student make-up at Iowa State University.

No significant differences were found between online and in-person participants, so they were treated as one for all analyses. Standard preliminary analyses were performed on all variables, including assessing for uni-variate and multivariate normality, linearity, checking for outliers, and assessing correlations among the predictor variables. Uni-variate outliers were assessed by inspecting histograms and box-plots. Outliers were numerous; however, they likely describe a genuine occurrence in the sample (not response- or data entry errors) and are descriptive of the population, especially given the non-normal distribution that can be expected for this line of research. Since they were deemed representative of the population, and particularly constituted the subgroup of interest (the men who do commit sexual coercion), it was decided to retain them. Descriptive statistics (mean, standard deviation, and skew) for all variables of interest can be found in Table 1.

As can be seen from these results, some measures of interest (i.e. intent to commit sexual assault, assessments of female and male characters' desires to engage in kissing, touching, and petting) suffer significant violations of the assumption of normality. The assessments of desire of the story's female characters were deemed to lack variability in responding and information, in other words, the vast majority of participants agreed the characters had strong desires to engage in kissing, touching and petting, and were dropped. Violations of assumptions was not unexpected for the dependent variables, as this line of research generally produces distribution with strong floor effects (majority of

participants endorsing little or no intent to commit sexual assault). Because the planned analysis was multiple regression analysis (the two predictors being participants' level of perceptions of sexual intent as a continuous variable, and norms as the between subject factor), having a more normal distribution was desirable.

Table 1

Descriptives

Measure	Mean	Standard Deviation	Skewness
Female desire to kiss	93.09	16.20	-3.24
Female desire to touch	88.64	19.93	-2.21
Female desire to pet	83.12	23.84	-1.56
Female desire for sex	27.35	33.94	.94
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	-.24
Maximum categorized intentions	1.68	1.53	.39
Mean likelihood to commit sexual assault	7.48	18.20	2.90

Accordingly, the inverse of the dependent variable was taken, such that inverse = $1/(x+1)$. Inversing is suggested for strongly skewed data as the most powerful

transformation available (Tabachnick & Fidell, 1996). Unfortunately, even this strong transformation did not lead to significant improvements, and the inversed distribution still violated assumptions of normality, linearity, and homoscedascity as seen by inspection of residual scatterplots and normal probability plots of the regression standardized residuals. Furthermore, frequency counts revealed about three quarter of the sample to indicate no intentions to commit sexual assault. Hence, the decision was made to perform logistic regression as the primary analysis. Logistic regression is less restrictive in its assumptions than ordinary least squares regression, and does not does not assume a linear relationship between the predictors and DV, a normally distributed DV, or equal variances of the DV across all levels of the IV.

Participants' previous engagement in sexual assault as a potential important covariate to be controlled for was assessed by analyzing the responses to the Sexual Experience Survey (SES; Koss & Oros, 1982). With regard to sexual violence, 22 participants (5.8%) indicated they had raped a woman before. Fourteen participants indicated they had unsuccessfully attempted to rape a woman before (3.7%).

Main Analyses

Multivariable logistic regression analyses were performed to test the hypothesis that engagement in sexual coercion is dependent on an interaction of heightened perceptions of sexual intent in woman in general as well as norms conducive to sexual coercion. As the best proxy measure for actual engagement in sexual coercion, intentions to behave sexually coercive were assessed using a novel multiple prompt paradigm, as well as an established measure asking for the likelihood to engage in sexual coercion.

For the first logistic regression equation, the established likelihood measure to commit sexual assault was used as the dependent variable, with participants indicating no intent (i.e. 0% likelihood, coded 0) in one group, and participants indicating any intent in the target group (coded 1). Condition was dummy coded with the anti-rape 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. Two interaction terms were computed analog to multiple regression, where each interaction term consists of the product of a dummy variable and the standardized continuous variable. Comparison to a hypothesized perfect model showed the model fit the data well (Hosmer and Lemeshow chi squares 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>	<i>e^b</i>	<i>CI</i> (odds)
Cond. 1	.72	.31	2.23	.02	2.05	[1.14, 3.76]
Cond. 2	.65	.31	2.10	.03	1.91	[1.05, 3.49]
Zperceptions	-.30	.21	-1.43	.15	.74	[.49, 1.12]
Interaction 1	.70	.30	2.33	.02	2.00	[1.12, 3.58]
Interaction 2	.38	.29	1.31	.20	1.47	[.83, 2.60]
Constant	-1.53	.24	-6.38	.00	.22	[.13, .35]

There was a significant main effect for condition, as well as a significant interaction. Intentions to commit sexual assault were related to the normative messages students were exposed to. 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 two times higher odds of estimating themselves as being likely to commit sexual assault. The predicted probabilities for being in the target group by conditions and at different levels of perceptions of sexual intent were calculated and can be seen in Figure 2.

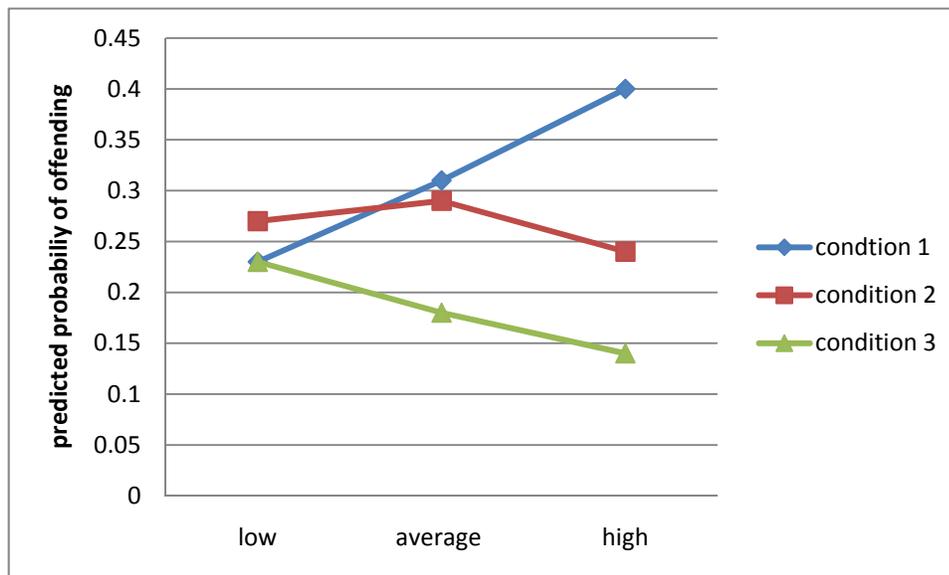


Figure 2. Means of self-reported intentions to commit sexual assault by condition and levels of perceptions of sexual intentions in the female target.

To exclude the possibility that significant effects were found were due to students' heightened desire for sexual intercourse to occur, the participants' ratings of how much they would like to engage in intercourse, if they were the male in a situation as the one depicted in the story, were introduced in a hierarchical logistic regression 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 should be controlled for was participants' previous engagement in sexual assault. As such, students' standardized responses to the

four items of the Sexual Experience scale 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 $\chi^2 = 30.89$, $p = .000$, $b = .82$, $p = .000$ and odds ratio = 2.27. However, most informatively, 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 $\chi^2 = 46.12$, $p = .000$. In other words, the interaction of condition 1 and perceptions of sexual intentions remained significant, $b = .77$, $p = .02$, and so did the predictors indicating condition. These results demonstrate the interactive effects of exposure to norms and general perceptions of sexual intentions in females predict intentions to commit sexual assault over and above past engagement in sexual assault.

The same multivariable logistic regression analyses were planned to be repeated with the novel measure of assessing intentions to commit sexual assault based on the multiple response paradigm as the dependent variable. Although this model also provided adequate fit when compared to a hypothesized perfect model (Hosmer and Lemeshow chi squares p values $> .05$), the independent variables overall did not significantly predict target group membership, log-likelihood ratios for models without and with the interaction terms $\chi^2 = 2.90$, $p = .40$ and $\chi^2 = 4.51$, $p = .51$ respectively. None of the individual predictors were significant. Because of these results, no other follow up analyses were attempted with this dependent variable.

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, non-sexual situations. Logistic regression on the established measure of likelihood to commit sexual assault showed that when other predictors are held equal, exposure to rape-conducive norms is associated with 2:1 increased odds of having intentions to commit sexual assault, and the interaction of norms and over-perceptions double 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 minute 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, since college tends to be the first time most students are without parental supervision, they may witness or participate in different behaviors they have not been exposed to while still at home. Living in close quarters with other males of similar age, may lead to a "group think" like phenomenon, where students are more likely to endorse more extreme notions than if they were 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 compound over time and experience, leading to even stronger effects than those observed.

Additionally, the differences in perceptions of sexual intent were observed from participants' ratings of a 30 second male-female interaction in a commercial. Outside the laboratory, students are interacting with the women they make judgments about in person, and may be much more involved and invested, which then 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 the ratings of the female character's desire to engage in sex students made. 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 exciting 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 important because it suggests prevention programs aimed to address both norms and misperceptions may be needed both as primary preventions (i.e. programs aimed at men who have not previously engaged in sexual coercion or assault) and in 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 population.

Some researchers (e.g., Malamuth et al., 1991) have tried to attribute differences in sexual assault proclivity to men's differences in sex drive, interest in, and desire for sex, arguing some men cannot restrain themselves as well 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 was 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, this means shifting the emphasis away from messages that allow the perpetrator some internal justification (e.g. "I could not control myself"; "I have a strong sex drive/need for sex") and instead emphasizing the

ability to control one's actions, as well as examining how perceptions of what is and is not appropriate behavior influence actions.

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 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 ($M = 20.1$; $SD = 2.8$; inter-quartile range = 19-21 years old). Such a result again points to the potential powerful influence norms can have, and could also suggest students' behaviors and beliefs are shaped significantly by peer messages for a much longer time than what has been previously assumed.

Limitations and Future Research

One limitation, that could also be considered a strength of the study and that has been discussed earlier, was the weak norm manipulation. On average, participants completed the study in much less time than expected, and it can be assumed they only spend a minimal amount of time looking at the four posters which conveyed the messages designed to manipulate norms. No fixed or minimum time was set that participants had to spend for studying the messages. However, despite this manipulation being likely extremely weak, the hypothesized effect and interaction were found nonetheless, making the results especially encouraging. Follow up studies should attempt to secure a slightly stronger manipulation of norms though, 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.

Another limitation of this study came from the lack of ethnic diversity in the sample. Although race was correlated with the outcome measures, the effects of race could not be examined because of the small proportions of non-White participants. Furthermore, although a significant correlation of race and outcome measures pointed to a possibly important variable to consider, because of the strong violations of normality in the outcome measures and following likely violation of linearity assumptions, correlation may not have given a good indication of the true relationship of these variables. 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 attempted to be replicated with a stratified sample mimicking the general population of college-age men in the US, rather than using a convenience sample of self-selected students. Self-selection tends to be a concern in all studies, but particularly in those assessing sexual behaviors, and one could make the argument 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 some students did not sign up for the study in the first place because of their discomfort with any sexual content in 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, and 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.

The novel approach tried to assess intentions to commit sexual assault did not appear to work out with this sample. Several reasons come to mind. It is possible the measure is not appropriate for sexual offending, and potential sexual offenders and non-offenders differ from domestic batterers vs. non-batterers, the group on which this type of measurement was originally created for. It is also possible this particular scenario used (i.e. the female indicating she has to leave just before commencing intercourse), is not suitable for the multiple response paradigm because after a participant responds with “letting her leave”, the real life equivalent of the situation would not require any other response, and thus asking for more responses is artificial and may create suspicion or resentment in participants. In the original study that used the paradigm, the situation was

such that the man and woman had been in a married relationship, and leaving without returning and addressing the stressful situation later was not a viable option. Another problem with this measure was that responses essentially showed a binary distribution, with participants either endorsing letting the female leave or mild verbal attempts to get her to stay, or endorsing continued sexual engagement or use of more force, with only few participants responding in the middle. From a theory standpoint however, it is not feasible to lump together those participants who would use no coercion and immediately comply with the woman's wishes with those who would attempt verbal persuasion first, and such a distribution of responses is not easily explained within the existing literature – again pointing to possible problems inherent to the measurement.

Implications and Conclusion

This study provided some exploratory evidence for the importance to consider 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 very weak, and the assessment of over-perceptions of sexual intentions was based solely on the men's ratings of a 30 second 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 towards 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 to change norms with education and interventions geared towards 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 vs. sexual intent and how men evolutionary tend to perceive greater sexual intentions in interactions may help lower risks of committing sexual assault. Such interventions may be easier to implement than interventions that aim at changing norms, since 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 here discussed study provides the first experimental evidence the author is aware of that demonstrates the causal importance of normative influence on the self-reported likelihood to commit sexual assault, and is also the first study that attempts to experimentally examine the interactions of norms and over-perceptions of sexual intentions. While suffering from limitations common to this line of research (e.g. self report, proxy measure for actual sexual assault behaviors, non-normal distributions with strong floor effects), this study nonetheless provides valuable exploratory insight into the interplay of two important mechanisms in sexual assault perpetration. It also offers some cues 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 A: Perception of Sexual Intent and Filler Items

All items will be answered on a 11 point scale with three anchor points: 0-completely disagree, 5 –neutral, 10-completely agree

This set of questions **refers to the male character** in the commercial you just watched:

The man in the commercial is attractive

The man in the commercial is friendly

The man in the commercial is interested in a friendship with the woman

The man in the commercial is polite

The man in the commercial is attracted to the woman

The man in the commercial is flirtatious

The man in the commercial is promiscuous

The man in the commercial is seductive

The man in the commercial is trying to pick up the woman

The man in the commercial is interested in a romantic relationship with the woman

The man in the commercial is interested in a sexual encounter with the woman

The man in the commercial is interested in a one night stand

This set of questions **refers to the female character** in the commercial you just watched:

The woman in the commercial is friendly

The woman in the commercial is interested in a friendship with the man

The woman in the commercial is polite

The woman in the commercial is attractive

The woman in the commercial is attracted to the man

The woman in the commercial is flirtatious

The woman in the commercial is promiscuous

The woman in the commercial is seductive

The woman in the commercial is trying to pick up the man

The woman in the commercial is interested in a romantic relationship with the man

The woman in the commercial is interested in a sexual encounter with the man

The woman in the commercial is interested in a one night stand

This next set of questions **refers to the product** advertised:

This is a high quality product

I would want to purchase this product

This is an attractive product

The commercial was made well

The acting was good

Appendix B: Normative Messages

Condition 1: Rape conducive norm messages

Most men and women agree if a woman leads a man on it's her own fault if he wants more sex later

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

Most men and women agree if a woman dresses in tight skirts and low cut tops, she is just asking for trouble.

74% of college seniors have said they have used a bit of force before to convince a woman to have sex when she changed her mind the last minute

Condition 2: Neutral messages

Most men and women agree using condoms is a smart thing to do to prevent STD's

Most men and women belief STD prevention is important

Most men and women agree it's important to get treated for STD's

Most men and women say they would go to see a doctor if they thought they had an STD.

Condition 3: Anti-rape norm messages

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.

Most men and women agree a woman dressing in tight skirts and low cut tops doesn't imply a woman wants to have sex.

94% of college aged men have agreed they find it mean and disgusting to use force to convince a woman to have sex even when she changes her mind the last minute.

Almost all men agree it's not ok to use force to get a woman to have sex.

Appendix C: Questions After Normative Influence Messages

After each poster (filler), rated on 5 point scales from 1- very ineffective to 5- very effective

How attractive is this poster?

How effective is this poster in conveying the message?

Questions serving as manipulation checks presented after poster 4:

What was the content of the posters?

Summarize one of the written messages as best as you can.

Appendix D: Hypothetical Sexual Encounter Scenario (Willan & Pollard, 2003;
adapted to fit American students)

It's 11.30 pm 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.

Whilst 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.

Appendix E: Outcome Measures

Please indicate the extent to which the female has indicated her desire to engage in

Kissing

Touching

Heavy petting

Intercourse

Picture yourself as the male character in this situation. Please rate the extent to which you would desire to engage in

Kissing

Touching

Heavy petting

Intercourse

If you were in this situation, what would you do next?

Try to verbally persuade her to more sexual activity

Touch her breast some more, hoping to get her in the mood

Pull her closer towards me

Try to finger her vagina to get her more aroused

Tell her she owes me sex now that she has gotten me all riled up

Make her feel guilty, hoping she will change her mind

Tell her if she leaves now there is no way you would want to have a relationship with her

Tell her whatever she wants to hear to increase the chance she will have sex with you

Point out to her that there is nobody else around and you could make her have sex with you if you wanted to

Threaten her

Tell her you will tell everyone what an easy girl she is if she leaves now

Try to penetrate her anyways

Hold her down and touch her some more

Hold her down and attempt to have intercourse with her

[open response option]

If your first choice didn't persuade her to stay, what would you do then?

If this didn't work, what would you do then?

If this still didn't work, what would you do then in this situation?

Appendix F: Intentions to Behave Sexually Aggressively

If you there was no chance anybody would ever find out, how likely would it be that you would force the woman to... (estimates to be made as percentages)

Touch your genital area or give you a “hand job”?

To give you oral sex?

Have intercourse with you?

Appendix G: Sexual Experience Survey

Instructions: The following items ask you for behaviors sometimes experienced in intimate relationships. Looking at yourself in your intimate relationship, have you ever had the following experiences?

Have you ever had sexual intercourse with a woman when you both wanted to?

Yes No

Has a woman ever misinterpreted the level of sexual intimacy you desired?

Yes No

Have you ever been in a situation where you became so sexually aroused that you could not stop yourself even though the woman didn't want to?

Yes No

Have you ever had sexual intercourse with a woman even though she didn't really want to at first, because you threatened to end the relationship otherwise?

Yes No

Have you ever persuaded a woman to have sexual intercourse with you by arguing about the topic? Yes No

Have you ever said things you didn't really mean to get a woman to sleep with you?

Yes No

Have you ever been in a situation where you used some degree of physical force (e.g. holding her) to try to engage in kissing or petting when she didn't really want to?

Yes No

Have you ever **tried** to get a woman to sleep with you **by threatening to use** some

degree of physical force if she didn't cooperate, but for various reasons intercourse didn't occur? Yes No

Have you ever **tried** to get a woman to sleep with you **by using** some degree of physical force (e.g. holding her arms), but for various reasons intercourse didn't occur?

Yes No

Have you ever **had** sexual intercourse with a woman **by threatening** her to use force if she didn't cooperate? Yes No

Have you ever **engaged** in sexual acts (such as oral, anal or vaginal intercourse) with a woman **by using** some degree of force? Yes No

Appendix H: Informed Consent Document (Study 1 and Study 2)

Study 1. Title of Study: Sexual Attraction

Investigators: You are invited to participate in a relationship study being conducted by Sarah Edwards, MS, a graduate student in Psychology at Iowa State University and David Vogel, Ph.D., a professor in Psychology at Iowa State University
This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to find out how sexual cues influence advertisements and the messages advertisers try to get across to consumers. We are also interested in people's sexual behavior, tactics and choices. The results of this study will help us to better understand the influence of sexual cues in advertisement, and people's sexual choices and tactics.

You are being offered to participate because you signed up to participate in this study on SONA. Participants have to be over the age of 18. By signing this consent, you indicate that you are over 18 years of age.

DESCRIPTION OF PROCEDURES

You will be asked to watch a brief video clip of an advertisement and to view several poster ads, and will be asked to answer a number of questions that will be distributed to you over the course of this study.

You will not be asked to provide your name or identifying information anywhere on the survey answer sheet. Therefore, all your answers will be anonymous. You are free to not answer any or all questions. This study should take about 30 minutes to complete.

RISKS

Some of the questions you will be asked might make you uncomfortable because of their private nature. You can choose to not answer any and all questions. Some people might also experience discomfort watching the video clip, seeing the posters, or reading the questions. You can choose to not participate in any and all activities, and you can discontinue your participation at any time without penalty or loss of benefits you are otherwise entitled to.

BENEFITS

By participating in this study, you might become more aware of your attitudes and beliefs surrounding dating and sexual relationships. In addition, the results of this study will help us derive programs for successful communication in dating and sexual situations.

ALTERNATIVES TO PARTICIPATION

You can gain research credit for your class by other means. Please consult your

course syllabus or instructor to inform you about other ways of gaining extra credit.

COSTS AND COMPENSATION

You *will not* have any costs from participating in this study. You *will* be compensated for participating in this study by receiving 1 point extra credit to be applied towards the psychology class of your choice.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY

No identifying information will be collected. All data will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis.

To ensure confidentiality to the extent permitted by law, the following measures will be taken: Participants will not be asked to provide their names or other identifying information, and no electronic identifiers (e.g., IP addresses, cookies) will be retained with the data. Any identifying information that may be inadvertently associated with the data, such as email addresses if the participant provides one, will be deleted immediately. Only the investigators will have access to the data and results will be reported as summarized statistics on a group level only.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about the study contact David Vogel, 515-294-1742, or Sarah Edwards, edwardss@iastate.edu.
- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Consent Statement

By signing this form, you are stating that you have read and understand this form and the research project, and are freely agreeing to be a part of this study. If there are things you do not understand about the study, please ask the researchers before you sign the form. You will be given a copy of the entire consent form to keep.

Participant's Signature	Printed Name	Date
Researcher obtaining consent:		
Signature	Printed Name	Date

INFORMED CONSENT DOCUMENT (Study 2)

Study 2. Title of Study: Sexual Behavior

Investigators: You are invited to participate in a relationship study being conducted by Sarah Edwards, MS, a graduate student in Psychology at Iowa State University and David Vogel, Ph.D., a professor in Psychology at Iowa State University

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to find out more about college students' sexual behaviors. We are also interested in people's sexual behavior, tactics and choices. The results of this study will help us to better understand college student dating and relationships. You have been selected because you signed up to participate in this study on SONA. Participants have to be over the age of 18. By signing this consent, you indicate that you are over 18 years of age.

DESCRIPTION OF PROCEDURES

You will be asked to read a short story and answer questions about it. You will not be asked to provide your name or identifying information anywhere on the survey answer sheet. Therefore, all your answers will be anonymous. You are free to not answer any or all questions. This study should take about 30 minutes to complete.

RISKS

Some of the questions you will be asked might make you uncomfortable because of their private nature. You can choose to not answer any and all questions. You can choose to not participate in any and all activities, and you can discontinue your participation at any time without penalty or loss of benefits you are otherwise entitled to.

BENEFITS

By participating in this study, you might become more aware of your attitudes and beliefs surrounding dating and sexual relationships. In addition, the results of this study will help us derive programs for successful communication in dating and sexual situations.

ALTERNATIVES TO PARTICIPATION

You can gain research credit for your class by other means. Please consult your course syllabus or instructor to inform you about other ways of gaining extra credit.

COSTS AND COMPENSATION

You *will not* have any costs from participating in this study. You *will* be compensated for participating in this study by receiving 1 point course credit to be applied towards the psychology class of your choice.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY

No identifying information will be collected. All data will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis.

To ensure confidentiality to the extent permitted by law, the following measures will be taken: Participants will not be asked to provide their names or other identifying information, and no electronic identifiers (e.g., IP addresses, cookies) will be retained with the data. Any identifying information that may be inadvertently associated with the data, such as email addresses if the participant provides one, will be deleted immediately. Only the investigators will have access to the data and results will be reported as summarized statistics on a group level only.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about the study, contact David Vogel, 515-294-1742, or Sarah Edwards, edwardss@iastate.edu.
- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Consent Statement

By signing this form, you are stating that you have read and understand this form and the research project, and are freely agreeing to be a part of this study. If there are things you do not understand about the study, please ask the researchers before you sign the form. You will be given a copy of the entire consent form to keep.

Participant's Signature	Printed Name	Date
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Researcher obtaining consent:

Signature	Printed Name	Date
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Appendix I: Debriefing Protocol - Sample

Thank you for your participation in this study. This study investigates people's attitudes, beliefs, intentions and behaviors regarding sexual aggression in dating relationships. Feel free to invite other students to participate in this study. However, please don't tell them the specific study questions or what this study is about. Contaminating the study by telling people too much about specific questions and answers would make the data unusable and your time and effort today would be wasted.

[Ask participants what they thought the study was about, and explain why we had to use deception. Then explain the study in detail, like this:]

At the beginning of this study, you were asked to evaluate a video clip and answer questions. We were interested in how men perceive situations in which sexual intentions are ambiguous and which could result in sexual relationships or platonic friendships. You then evaluated 4 posters with messages. These were designed to convey opinions of other people to you to see how much men get influenced by other people's opinions about sexual tactics and behaviors. It is important to know that these opinions were made up by us, and do not represent actual opinions. Particularly, it is important to know that it is never acceptable to force a person to sexual activities they do not consent to. We have done actual surveys with college aged males and have found the following:

More than 95% of your peers think significant other people in their lives do not support the use of physical aggression in a dating/intimate relationship.

Over 98% of your peers answered they do not use physical aggression in their intimate/dating relationships.

The vast majority of your peers found using sexual aggression in a dating/intimate relationship to be negative or extremely negative.

The majority of your peers answered in a representative survey there is little, very little or no support from significant others to use sexual aggression in a dating/intimate relationship.

A representative survey of your peers found 77% do not plan on using sexual aggression in their intimate/dating relationships in the future.

The vast majority of your peers answered they have seldom or never been sexually aggressive in an intimate/dating relationship.

You then may have read a short story in which a woman did not consent to intercourse. It is important to remember that it is not ok to coerce or try to force a woman to any sexual activity, and doing so can result in serious negative consequences such as criminal

prosecution. In addition, these experiences usually have serious psychological consequences for both men and women.

Verbal, physical or sexual aggression is not acceptable behaviors. These behaviors interfere with healthy relationships and can become very problematic for victims and aggressors alike.

If you have any negative reactions to this study, or if you have been a victim or perpetrator of dating aggression, it may be helpful to you to speak to a trained mental health professional about your experiences. The following agencies offer free or low cost services to ISU students:

Student Counseling Services

3rd Floor, Student Services Bldg, north of Friley Hall.

To make an appointment, call 515-294-5056

Couples and Family Therapy Clinic

1st Floor of the Palmer HDFS Building

Monday - Friday, flexible hours

Call 515-294-0534 to set up an appointment

If you have any concern or questions about this study, you may also contact the principal investigator, Sarah Edwards at edwardss@iastate.edu

If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office of Research Assurances, Iowa State University, Ames, Iowa 50011.

Thank you again for your time and participation.