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FOLLOWING THE SCRIPT: PORNOGRAPHY'S ASSOCIATIONS WITH MEN'S SEXUAL AGGRESSION THROUGH OBJECTIFICATION AND PORN SEX SCRIPTING

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Abstract

Following the Script: Pornography's Associations with Men's Sexual Aggression Through Objectification and Porn Sex Scripting

Sarah J. Harsey

Objectification is the treatment of a person as a body, or a collection of body parts, as something to be used to the benefit of others; it strips individuals of their humanity such that their status is demoted to something less than fully human. Scholars have noted that the objectification of women may be theoretically important in sexual violence (Fredrickson & Roberts, 1997; Gervais & Eagan, 2017; MacKinnon, 1989). Mainstream heterosexual pornography is an especially persistent source of objectification. It not only portrays women in objectifying and degrading ways (Gorman et al., 2010), but it also frequently pairs such objectification with explicit acts of aggression (Bridges et al., 2010). Moreover, pornography consumers often reenact behaviors they observe in pornography (Rothman et al., 2015), which may lead to the reproduction of objectifying treatment and aggressive behaviors in people's own sexual encounters. The aim of this dissertation is to test a model containing men's objectification of women, pornography use, and perpetration of sexual aggression. This model positions objectification of women and porn sex scripting as mediators of the relationship between pornography use and sexual aggression. In the first path, it was hypothesized that men's pornography use would positively predict objectification of women, which in turn was predicted to be associated with perpetration of sexual aggression. In the second path, pornography use was predicted to be associated with greater porn sex scripting, which was

expected to subsequently be related to higher levels of sexual aggression. Data from 261 heterosexual or female-attracted, cisgender young men were analyzed. Structural equation modeling indicated the proposed model was a good fit for the data. Pornography use frequency predicted porn sex scripting, which was associated with greater sexual aggression perpetration. Objectification of women also predicted sexual aggression but was not associated with pornography use frequency. Three alternative models were tested to further optimize data fit. Analysis of these models revealed that preference for aggressive pornography predicted objectification of women. This led to the identification of two alternative models in which all the originally hypothesized pathways between variables were statistically significant. These findings are notable for several reasons. First, only a few studies have investigated the link between men's objectification of women and sexual aggression. The current study lends further support to the notion that objectification plays an important role in men's sexual violence against women. This finding has important theoretical implications. Evidence suggesting objectification may facilitate perpetration could lead to the development of sexual violence prevention and intervention programs that specifically target objectification. The current study is also among the first to identify a previously unexplored relationship between pornography reenactment (porn sex scripting) and perpetration of sexual aggression. These findings highlight the need for more critical perspectives of pornography in both academic and cultural discourses.

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Following the Script: Pornography's Associations with Men's Sexual Aggression Through Objectification and Porn Sex Scripting

Men's sexual aggression is one of the most serious threats faced by women of all nationalities, ages, and identities (Dartnall & Jewkes, 2013). In the United States alone, approximately one in five women will be raped – almost exclusively by men – at least once in their lives (Black et al., 2011; Smith et al., 2017). Nearly 44% of women will experience other types of sexual violence throughout their lives, such as unwanted, non-penetrative sexual contact and sexual coercion, which are also mainly attributable to men's sexual aggression (Breiding et al., 2014). Rates of sexual victimization tend to be highest among women with marginalized identities, indicating that women of vulnerable social statuses are more frequently subjected to men's sexual aggression. In the US, for instance, multiracial and Native American women report the highest rates of rape across racial and ethnic groups (Smith et al., 2017); similarly, bisexual women experience rape at more than twice the rate (46%) of heterosexual women (Chen et al., 2020). The impact of sexual violence on women's well-being is substantial. Women who have been sexually assaulted report psychological difficulties like post-traumatic stress disorder (Resick, 1993), assault-related injuries and chronic pain (Golding, 1999; Tjaden & Thoennes, 2006), as well as financial hardships related to medical treatment costs, loss of work productivity, and expenses for psychological treatment (Peterson et al., 2017).

Identifying the underlying reasons for men's sexual aggression is instrumental in preventing and reducing sexual violence. Research has identified a number of

contributing factors in men's sexual aggression perpetration, including experiencing childhood maltreatment, substance use, and deficits in social functioning (Tharp et al., 2013). Researchers use such predictor variables to generate models that explain men's sexual aggression. For instance, Malamuth's (1986) confluence model features men's hostile masculinity and preference for impersonal sex as two primary pathways of men's perpetration (Malamuth & Hald, 2017).

The purpose of this dissertation is to introduce and test a new model of men's sexual aggression that synthesizes three related but distinct factors: Pornography use, objectification of women, and sexual scripts. This model situates pornography use as central influence on men's objectification of women and sexual scripts. Specifically, it posits that pornography both reinforces an objectifying view of women and leads men to adopt aggressive sexual acts observed in pornography into their own sexual scripts (to be henceforth described as "porn sex scripting"). These two pathways – objectification and porn sex scripting – are proposed to subsequently contribute to men's perpetration of sexual aggression. Each pathway in the proposed model represents two explanations for the association between pornography and men's sexual aggression perpetration (Wright et al., 2016). The objectification pathway signifies a dehumanizing cognitive schema that emboldens and enables perpetrators to act aggressively toward women. The porn sex scripting pathway, which reflects theories of social learning and media effects (Bandura, 1978; Gerbner & Gross, 1976), suggests that pornography is a powerful learning tool that directly informs men's sexual behaviors. The high prevalence of male-perpetrated aggression in

pornography (Bridges et al., 2010) may normalize and such aggressive behaviors and, given its ubiquity in high-pleasure contexts, encourage men to act similarly with their own sexual partners.

Objectification

In general terms, objectification is the perception or treatment of people as objects or non-human entities. Human characteristics, particularly those relating to the mind, are rendered irrelevant or nonexistent through objectification. Objectified people's thoughts, feelings, and individuality can be largely ignored or minimized – these are not qualities that objects tend to have, after all. The degree to which such human qualities can be denied varies greatly in severity. At its most extreme, objectification can result in the complete subjugation of individuals who are used solely for an objectifier's needs or wants. Slavery, for instance, is one such example of one of the most extreme expressions of objectification. On the less severe end of the spectrum, restaurant patrons may objectify a waiter when they perceive the worker as existing, at least temporarily, to only serve their needs.

Objectification is a largely negative and anti-social phenomenon – there is little benefit from being treated as less than human, especially given its ability to facilitate mistreatment. This potential for mistreatment made objectification particularly interesting to philosophers, feminists, and psychologists, who have sought to better understand the ways in which it occurs and how it can cause harm.

Philosophical theories

Objectification, explored as a concept by 18th-centrury German philosopher Immanuel Kant, was the focus of third-wave feminists who argued that the sexual objectification of women was instrumental in the generation and perpetuation of gender inequality. Led by radical feminists Andrea Dworkin and Catharine MacKinnon, the movement to recognize objectification as a sexist, degrading force gave name to the ways in which women were – and still are – viewed or treated as little more than bodies or a collection of body parts to be used for men's pleasure. Dworkin (1979) writes that, "Objectification is the accomplished fact: an internalized, nearly invariable response by the male to a form that . . . is sufficiently whatever he needs to provoke arousal. […] The primary target of objectification is the woman" (Dworkin, 1979, p. 113). According to Dworkin, objectification is the oppressive force through which men degrade, use, and subjugate women, who are afforded little more value than their use as sexual instruments. MacKinnon (1989) echoes Dworkin's instrumental views of objectification, describing it as the process of having "a social meaning imposed on your being that defines you to be sexually used, according to your desired uses, and then using you that way" (MacKinnon, 1989, p. 329).

Philosopher Martha Nussbaum (1995) continued this conceptual work on objectification, but assumed a less radical approach and conceptualized objectification as a multi-dimensional construct with seven distinct ways in which objectification can manifest. These types of objectification were instrumentality (the objectified target is used as a tool by others), denial of autonomy (the objectified

target is viewed as devoid of autonomy and self-determination), inertness (the objectified target is treated as lacking agency), fungibility (the objectified target is considered interchangeable with other objectified targets), violability (the objectified subject to being violated through acts of violence), ownership (the objectified target is treated as something to be owned, bought, or sold), and denial of subjectivity (the experience and feelings of the objectified target is treated as dismissible or inconsequential) (Nussbaum, 1995). By delineating several different categories of objectification, Nussbaum suggests that objectification is characteristically heterogeneous; more specifically, she argues that "all types of objectification are not equally objectionable . . . the evaluation of any of them requires a careful evaluation of context and circumstance" (Nussbaum, 1995, p. 256). She shies away from broadly condemning objectification as Dworkin and MacKinnon did in their work and instead emphasizes the importance of the context in which the objectification occurs. According to Nussbaum, objectification ceases to be morally problematic when it is characterized by "a complete lack of instrumentalization" and is simultaneously "symmetrical and mutual . . . and undertaken in a context of mutual respect and rough social equality" (p. 275). But she acknowledges that certain uses of objectification are reliably harmful. For instance, Nussbaum finds herself agreeing with Dworkin and MacKinnon in that the commercialization of the objectification is deleterious, stating that the centerfold magazine *Playboy* is an example of harmful manifestations of objectification.

Philosopher Rae Langton (2009) expands on Nussbaum's (1995) list of objectification types, proposing that three additional ways to objectify be added: (1) reduction to body, (2) reduction to appearance, and (3) silencing. While Nussbaum draws from some of MacKinnon and Dworkin's work in her discussion of objectification, Langton (2009) argues that she curiously neglects to include objectification types that directly address the feminist perspective on objectification – in other words, Nussbaum opts for rather broad definitions of objectification that fail to sufficiently take into consideration the types of objectification that relate specifically to the treatment of women (Langton, 2009).

Langton's (2009) first proposed addition to Nussbaum's list, "reduction to body," describes how women are viewed not as humans but as bodies; with respect to this type of objectification, a woman is represented and valued entirely for the physical body she inhabits. "Reduction to appearance" suggests a similar process whereby women's physical appearance takes precedence over all else. Through reduction to appearance, women – and girls – serve merely aesthetic or decorative purposes. Langton's third type of objectification, "silencing," is another type of objectification taken directly from feminist thought: since the silencing of women is a cornerstone of women's oppression, doing so deprives them of the opportunity to engage in the uniquely human experience of speech (Langton, 2009). Any thoughts, feelings, or expressions are muted and made irrelevant, thereby rendering women's inner world irrelevant and limiting their existence to what can be observed.

Objectification Theory

Nussbaum's philosophical piece on objectification was shortly followed by one of the first (and only) psychological theories involving objectification and gender. Fredrickson and Roberts' (1997) Objectification Theory describes how women, steeped in a sexist culture, adopt the perspective of others who objectify them, which in turn leads women and girls to objectify themselves. This phenomenon, termed "self-objectification" provided a new framework through which to understand the negative consequences of objectification.

As Objectification Theory posits, self-objectification leads to constant self-conscious body monitoring. Fredrickson and Roberts (1997) propose that this body monitoring intrudes upon women and girls' consciousness, interrupting their thoughts and actions to the point where peak motivation states (i.e., a focused immersion in a particular task or goal) are difficult to maintain. The ceaseless interruptions associated with body monitoring therefore effectively limits women and girls from reaching their full potential. Moreover, the authors argue that habitual body monitoring consumes such a high degree of attention and energy that women and girls may be able to less effectively monitor their internal bodily experience – in other words, so many of women and girls' resources are invested in surveilling their outward appearance that many fewer resources can be allocated to internal states, thereby preventing more meaningful connections to their bodies.

In addition to producing reduced opportunity for peak motivational states and internal body monitoring, self-objectification was originally proposed to be associated with feelings of shame, anxiety, depression, sexual dysfunction, and eating disorders

(Fredrickson & Roberts, 1997). Research investigating self-objectification largely supports these claims, finding that self-objectification is associated with greater body shame, greater appearance anxiety, fewer experiences of peak motivational states, lower internal bodily awareness, and reductions in task performance (American Psychological Association, Task Force on the Sexualization of Girls, 2007; Moradi & Huang, 2008). Body shame, one of the direct consequences of self-objectification, has been found to predict eating disorder symptomology, depression symptomology (Moradi & Huang, 2008), and decreased sexual pleasure (American Psychological Association, Task Force on the Sexualization of Girls, 2007). The experience of self-objectification, then, is markedly negative, leading women and girls to lead lives that are largely constricted by the oppressive compulsion of body monitoring.

Dehumanization

In a speech to the University of Chicago Law School in 1993, Dworkin argued, "Dehumanization is real. It happens in real life; it happens to stigmatized people. It has happened to us, to women. We say that women are objectified. We hope that people will think that we are very smart when we use a long word. But being turned into an object is a real event" (Lederer & Delgado, 1995). Here, Dworkin employs the term "dehumanization" to, presumably, describe the same process that occurs with objectification. To be regarded as nothing more than a body or collection of body parts is to be denied the totality of one's humanity and is ultimately dehumanizing. Following this logic, dehumanization is an important aspect of objectification. But, like objectification, dehumanization is a complex concept.

Several theories have provided the conceptual framework for dehumanization. Infrahumanization theory (Leyens et al., 2001) provides evidence for the ways in which people belonging to a particular ingroup may deny full humanness to those in outgroups. Specifically, infrahumanization occurs when fewer “secondary emotions” (i.e. uniquely human emotions) are attributed to individuals (Leyens et al., 2001). Although Leyens et al. (2001) do not discuss their theory in the context of gender, infrahumanization is applicable to the objectification of women. For example, it may be possible that men who perceive women as belonging to an outgroup grant them fewer secondary emotions. Men who infrahumanize women may therefore regard them as less complex and intelligent people – perhaps, even, as more like children. For example, it is relatively common and acceptable for women to be colloquially called “girls” instead of descriptors that more accurately reflect adult age. In advertising, women may be portrayed as young children through the use of clothing, props, and symbols representing childhood (Conley & Ramsey, 2011); it is possible, then, that infrahumanization plays a role in the infantilization of women.

Haslam’s (2006) dual model of dehumanization builds upon infrahumanization theory by further articulating the ways in which people may be dehumanized. Whereas infrahumanization conceptualized dehumanization as a process by which humans are regarded as more animal-like, the dual model proposes that dehumanization can also occur when humans are viewed as inanimate objects, like robots (Haslam, 2006). In this way, dehumanization is possible when either

human uniqueness (which separates people from animals) or human nature (which separates humans from inanimate objects) is denied.

Harris and Fiske (2006) also highlight dehumanization's role in social cognition, claiming that dehumanization occurs whenever an individual's mind is not taken into account or is considered irrelevant. Stereotypes often facilitate this type of dehumanization, leading to decreases in perceptions of competence and warmth; those who are seen as lacking in these two dimensions are subject to dehumanization. Research merging this perspective with objectification theory finds that, when a woman's physical appearance is the primary focus, perceptions of her warmth and competence are decreased (Heflick et al., 2011).

Interestingly, these theories of dehumanization generally avoid in-depth discussions relating to gender and, more specifically, to the objectification of women. As an example, Haslam (2006) pays tribute to feminist conceptualizations of objectification (such as Fredrickson and Roberts' objectification theory) and suggests that objectification is a variant of mechanistic (object-like) dehumanization, but stops short of explaining how sex and gender may play a role in dehumanization. Similarly, Harris and Fiske (2006) omit any mention of gender or objectification. In later writings, however, Haslam and colleagues directly discuss the relationship between objectification of women and dehumanization, observing that "at least some forms of objectification seem to involve perceiving another person as incompletely human, and at least some forms of dehumanization involve perceiving people as object-like" (Haslam et al., 2013, p. 26). Similar to what Haslam (2006) initially suggested,

Haslam et al. (2013) concluded that "objectification is a form of dehumanization which strips the target of their humanity, mind, and moral standing" (Haslam et al., 2013, p. 44).

Whereas the dehumanization research originated in explaining intergroup violence, objectification was conceptualized to explain individual experiences of the self (Haslam et al., 2013); these two lines of research have remained largely segregated from each other. Concepts surrounding objectification would do well to borrow more heavily from dehumanization's focus on large-scale violence and specifically focus on possible links between objectification and sexual violence. Likewise, dehumanization, in its discussions of intergroup and outergroup violence, would likely benefit from including discussions of sexism (in addition to its relatively more frequent analyses of racism).

Despite the frustrating lack of communication between objectification and dehumanization theories, theories of dehumanization do provide useful insight that can be applied to objectification. For example, Haslam and Loughnan (2014) note that individuals who belong to marginalized social groups (e.g. people of color, the homeless, immigrants, mentally ill, women) are at particular risk of experiencing objectification. This suggests that women who have multiple marginalized identities may be subjected to objectification more frequently than women who have more privileged identities.

Haslam and Loughnan (2014) also include a list of individual factors that may increase the occurrence of dehumanization, including emotions (disgust and

contempt), motives (sociality, sexuality, moral equanimity, and group protection), cognitions (self-focus and egocentrism), threat (primarily through the lens of terror management theory), and power (feeling a greater sense of power over others). While each of these variables may impact the objectification of women, of particular interest are the sexuality and power motives. However, only one study has examined sexual motives as a means of dehumanization (Vaes et al., 2012), and sexuality as a motive may be inextricably tied up in other motives, such as power and feelings of disgust and contempt.

The consequences of dehumanization are generally described in terms of violence due to its ability to increase anti-sociality (including acts of aggression and violence) and decrease perceived moral status (degree to which people are seen as deserving to be not harmed) (Haslam & Loughnan, 2006). Importantly, research has not determined whether dehumanization precedes and facilitates violence, or whether dehumanization follows the violence as a means of justifying the aggressive acts – reasonably, though, dehumanization could serve both as a means of facilitating violence proactively and as a way for violence to be justified after it has been committed.

Finally, Haslam and Loughnan (2006) suggest several ways in which dehumanization can be reduced, including increasing intergroup contact. While this may be applicable for groups that are relatively isolated from each other (such as ethnic groups that are separated by physical distance), such strategies identified in the dehumanization research are not likely generalizable to gender. Intergroup contact

between men and women is typically fairly high in most Western societies – after all, most men have had contact with women, whether it is with their mothers or other female family members, throughout some portion of their lives. Since the strategies aimed at reducing dehumanization were conceived in the context of ethnocentrism, applying them to gender might not be practical.

What's in a Name? Objectification, Dehumanization, and Sexualization

Despite occupying different areas of scholarly work, objectification and dehumanization share many of the same qualities. Similarly, the term sexualization often dominates gendered research related to objectification. Although objectification, dehumanization, and sexualization seem to describe interrelated phenomenon, these terms have often been employed in different contexts.

Dehumanization, used by social scientists to explain ethnocentrism and intergroup violence (Haslam et al., 2013), is perhaps the most general of conceptualizations regarding the ways in which people treat one another as less than (or other than) human. It is not specific to things of a sexual nature, nor does it aim to be – its primary focus is large-scale violence and has largely ignored dehumanization as it specifically relates to gender. Some, however, have suggested that objectification (including, more specifically, objectification of women) is a subtype of dehumanization (Haslam, 2006; Haslam et al., 2013).

On the other hand, objectification has ultimately been the term of choice by feminist scholars to describe the phenomenon as it is experienced by women on a personal level, and the ways in which it is used to ultimately subjugate women

through sex (Dworkin, 1979; Fredrickson & Roberts, 1997; Langton, 2009; MacKinnon, 1989). To these feminists, sexual objectification would be a redundant term – the type of objectification they discuss is more or less limited to that of a sexual nature. Non-sexual objectification receives less attention.

Regardless, having a definition of sexual objectification is useful to distinguish instances in which objectification is *not* sexual (although this type of objectification will not be discussed in length in this paper). According to the APA taskforce on the sexualization of girls, sexual objectification happens when a person is "made into a thing for others' sexual use, rather than seen as a person with the capacity for independent action and decision making, and/or sexuality is inappropriately imposed upon a person" (American Psychological Association, Task Force on the Sexualization of Girls, 2007, p. 1).

Sexualization is a slightly broader term that encompasses sexual objectification but also includes instances in which "a person's value comes only from his or her sexual appeal or behavior, to the exclusion of other characteristics [or when] a person is held to a standard that equates physical attractiveness (narrowly defined) with being sexy" (American Psychological Association,Task Force on the Sexualization of Girls, 2007, p. 1). Sexualization is a process that likely leads to sexual objectification.

However, much of the research on objectification fails to make such differentiations. For example, as with Dworkin's conceptualization, objectification is often used synonymously with dehumanization. Likewise, the term "sexualized"

frequently denotes objectification or dehumanization. Oftentimes, the terms "sexualized," "dehumanized," and "objectified" refers to similar subjects in the research – for example, a bikini-clad woman featured in a media image, used as an experimental stimulus, may be referred to as sexualized in one study, but in others described as dehumanized or objectified. Since the current research on objectification often does not distinguish between these terms, this paper will use "sexualized," "objectified," and "dehumanized" to refer to ways in which women are regarded as bodies to be viewed and used by men. Although there are certainly situations in which, for example, a woman may be dehumanized but not sexually objectified (e.g., when her status as a woman is less salient than other dehumanized identities), perhaps it is fair to conclude that the majority of women's experiences of objectification are inextricably bound together with sexualization and dehumanization (assuming one can even tease apart dehumanization and objectification).

Prevalence of Objectification

As Fredrickson and Roberts (1997) argued, women's lives are saturated with exposure to and experiences of objectification. Research has attempted to quantify the prevalence of objectification in everyday life. One relatively straightforward approach is to evaluate its prevalence in the media. In an analysis of nearly 2,000 print advertisements appearing in popular magazines in the US, researchers discovered that approximately 52% of advertisements containing a woman depicted them in an objectifying way (Stankiewicz & Rosselli, 2008). This particular analysis also examined the proportion of sex-object portrayals by magazine type: when looking at

only magazines marketed towards men (such as *Sports Illustrated, GQ,* and *Esquire*), nearly three-quarters of ads featuring women showed them in sexually objectifying ways. In contrast, only 8% of ads featuring women in news and business magazines portrayed them as sex objects. It is of no surprise, then, that men's magazines have been singled out as being particularly problematic regarding the objectifying content they present to a largely male audience (Coy & Horvath, 2011). Similar results have been found using online advertisements that appear on websites: out of the 600 online ad images examined, researchers found that approximately half of ads that contained a women showed them in a mainly decorative role (Plakoyiannaki et al., 2008). Beyond print advertisements, the objectification of women is also prevalent in video games (Summers & Miller, 2014), music (Flynn et al., 2016; Rasmussen & Densley, 2017), music videos (Aubrey & Frisby, 2011), and social media (Carrotte et al., 2017; Yan et al., 2021).

Given the prevalence of objectifying representations of women displayed in media, such images are seemingly inescapable. Research supports this conclusion. A study using an ecological momentary assessment methodology – a technique in which participants are prompted regularly throughout the day via an application on their smartphones to complete a survey – measured 81 Australian women's exposure to objectifying experiences (Holland et al., 2017). Over a period of a week, the women reported witnessing an average of 9.42 instances in which they noticed another individual be sexually objectified by another person (such as seeing individuals be targeted by catcalling or leering) or an objectifying image from the media. More than

half (64%) of objectifying instances witnessed by participants originated from media sources. In fact, media not only supplied the most opportunity to witness objectification, but they were also the most frequent source of objectification in general: Whereas the participants reported a total of 299 occasions of objectification in which they themselves were the target of objectification, seeing objectifying media was reported on nearly 500 occasions over the course of the study. Out of all the reported instances of objectification, media provided the bulk of daily objectifying exposures.

Objectification's Associations with Attitudes and Behaviors

One concern about the ubiquity of objectification of women, particularly in the media, is its potential to influence the way people think about women, aggression, and sexual violence. This issue has been the focus of both experimental and correlational research involving a range of objectifying media.

Experimental Evidence

Lanis and Covell (1995) conducted the first study to experimentally investigate the impact of objectifying images of women on rape-supportive beliefs – prior to this experiment, the relationship between sexually objectifying media and beliefs had been theoretically explored by feminist authors (such as Susan Brownmiller), who proposed that such images contributed to the development and perpetuation of anti-woman attitudes. The purpose of Lanis and Covell's study, therefore, was to provide evidence for the then-unsubstantiated claims made by these feminists in the 1990s – do sexually objectifying media representations really

influence how people think about women? To test this question, the researchers randomly assigned participants to view a series of 10 magazine advertisements from one of three possible categories: neutral, nature-based advertisements, advertisements featuring women in competent, non-traditional roles, or advertisements with women who were portrayed as sex objects. After viewing ads from one of the three conditions, participants' rape myth acceptance and other pro-violence and anti-woman beliefs were measured. Results from this experiment indicate that men (but not women) who viewed the objectifying ads reported more rape-supportive and anti-woman beliefs compared to the men who saw the neutral or progressive advertisements. The effect was reversed for women: female participants who saw the objectifying ads reported lower endorsement of pro-violence and anti-women beliefs. While the objectifying ads may have primed women to think critically about issues relating to sexual violence, the same ads bolstered men's sexist and rape-supportive beliefs. The results of this study were later replicated by McKay & Covell (1997), who additionally found that exposure to the sex-object advertisements decreased support for feminism. These two early studies confirmed what feminists had been speculating: media that portrays women as sexual objects can negatively impact people's beliefs about women and sexual violence. The potential for such media representations to cause harm was supported, and soon additional experimental research on the effects of sexually objectifying media on attitudes followed.

Print advertisements remained an important focus of this research, although studies have produced mixed results on their influence on attitudes. An experiment

comparing the effect of objectifying and non-objectifying ad images of female models found that men who viewed a series of objectifying ads reported more favorable attitudes towards voyeurism (Kalyanaraman et al., 2000). Objectifying ads appearing in magazines have also been found to increase acceptance of child abuse myths (Machia & Lamb, 2009), which suggests that sex-object images may stimulate many types of pro-violence attitudes. Similar research examining the effects of viewing magazine covers reveals that men who were exposed to the covers of men's magazines – and who also reported higher levels of rape myth acceptance and believed men's magazines are legitimate sources of information – indicated higher rape proclivity compared to men who saw non-objectifying magazine covers (Romero-Sanchez et al., 2017). Although somewhat complicated, the results of this study showed that objectifying media may activate sexist and aggressive beliefs among men who already hold sexist attitudes.

While most research looks at how objectifying ad images can alter attitudes about women more broadly, some research suggests that sexually objectifying advertisements can influence the way men think about an individual woman as well: in a study examining the effects of an objectifying ad appearing in a student newspaper, researchers found that men, after reading a statement from the female university president in the newspaper, rated the president as less competent when the statement was placed alongside an ad featuring a sexualized model (Schooler, 2015). Previous research has found that reading objectifying comments about a woman's appearance (Funk & Coker, 2016) or prompting individuals to focus on women's

appearances (Heflick & Goldenberg, 2009; Heflick et al., 2011) can cause decreases in perceptions of the targeted women's competence and decreases in perceived personhood (Loughnan et al., 2010). In a survey that assessed adolescent boys' responses to images of female athletes, researchers asked the young men to appraise magazine photographs of female athletes that highlighted their physical skills, photographs that portrayed female athletes as sex objects, or photos of sexualized fashion models (Daniels & Wartena, 2011). Results of this study found that the sexualized athletes, although clearly competent and high-achieving, received objectifying appraisals similar to those elicited by the photos of the sexualized models. In contrast, the athletic-focused photographs elicited comments regarding the female athletes' physicality or physical actions portrayed in the pictures.

Female victims of rape are also afforded less moral concern and are perceived to be more responsible for the rape when they are pictured wearing a bikini (Loughnan et al., 2013); in addition, when a female rape victim is sexualized, her perpetrator is perceived as being less blameworthy (Bernard et al., 2015). While this research suggests that when a female target is objectified, perceptions of that particular target are influenced, Schooler's (2015) study demonstrates how objectifying imagery unrelated to a particular woman (i.e., the objectifying ad placed next to the female president's statement) can negatively impact how she is perceived.

Overall, studies investigating the effects of sexually-objectifying advertisements on people's beliefs about women and sexual violence suggest that these images do have legitimately negative consequences. Of course, static

advertising images represent only a portion of the pervasive objectifying media that is consumed every day in abundance. Video game exposure has been found to boost men's tolerance of sexual harassment (Dill et al., 2008) and rape myth acceptance (Beck et al., 2012). Experiments with music videos have identified significant effects of objectifying music videos on acceptance of interpersonal violence and adversarial sexual beliefs (Aubrey et al., 2011), sex role stereotyping and acceptance of objectification of women (Kistler & Lee, 2010), and decreases in empathy for female victims of rape (Burgess & Burpo, 2012). Television with objectifying representations of women has similarly been found to increase men's hostile sexism Rollero (2013), gender-role stereotyping (Ward, 2002; Ward & Friedman, 2006), and self-reported willingness to engage in sexually coercive and harassing behaviors (Galdi et al., 2014).

Correlational Evidence

Correlational research supports the findings from the collection of experiments conducted on exposure to objectifying media and images. For example, young men (but not young women) who report playing video games featuring sexist content (such as games from the *Grand Theft Auto* series) also indicate higher endorsement of benevolent sexism (Stermer & Burkley, 2012). Research on television programming and its relation to attitudes have found that adolescents who consume sexualized media express higher levels of acceptance of the objectification of women (Peter & Valkenburg, 2007; Ward & Friedman, 2006). Some correlational studies have identified relationships between particular genres of television programming and

attitudinal outcomes: adolescents who watch more sports-themed television report more sexist beliefs and view the objectification of women more positively (Custers & McNallie, 2017), whereas adolescents who view talk shows or prime-time programs that contain sexual themes tend to express more support of traditional gender roles (Ward & Friedman, 2006). Likewise, researchers have identified relationships between men's consumption of reality TV shows featuring objectified representations of women and agreement with the notion that women are sex objects (Wright & Tokunaga, 2016). In addition, use of magazines that are high in sexualized content (such as men's lifestyle magazines) is related to increases in adolescent boys' objectifying beliefs about women (Ward et al., 2015). Wright and Tokunaga (2016) similarly found correlational evidence for the relationship between men's exposure to objectifying magazines and higher levels of perceptions of women as sex objects. A meta-analysis by Ward (2016) concludes, unsurprisingly, that both correlational and experimental research indicate that objectifying media meaningfully (and overwhelmingly negatively) shape the way individuals think about women and sexual violence.

Objectification and Sexual Violence

For numerous reasons, objectification is a deeply problematic phenomenon. Contemporary research examining the effects of exposure to objectifying media (which comprises a fair proportion of the literature on the objectification of women) tends to focus primarily on how such representations can negatively shape individuals' cognitive appraisals of women (e.g., Heflick et al., 2011) or of constructs

related to gendered violence, such as rape myths (Driesmans et al., 2015). Despite the existence of theoretical work (Fredrickson & Roberts, 1997; Gervais & Eagan, 2017; Nussbaum, 1995) that describes a causal link between objectification and the perpetration of violence against women, relatively little research has investigated this relationship directly.

Objectification of women has been identified as one of the most common cognitive distortions employed by male rapists to motivate and justify their violence (Polaschek & Ward, 2002). After conducting interviews with 37 New Zealand men imprisoned for rape, Polaschek and Gannon (2004) found that 70% of their sample expressed that they perceived women to be sex objects. One of the men from this study was quoted as saying his victim was “just an instrument,” while another referred to groups of women as a “cattle market” (Polaschek & Gannon, 2004, p. 306). A separate series of interviews conducted with convicted rapists living in the UK yielded similar results: most of the men (54%) reported that they viewed women mostly as providers of sex, a perspective that enabled them to disregard their victims’ lack of consent and consequently perpetrate the sexual assault (Beech et al., 2006). The researchers involved in the two interview studies concluded that the objectification of women served as a major motivational factor in these men’s assaults on women (Beech et al., 2006; Polaschek & Gannon, 2004).

In addition to the qualitative research exploring themes in rapists’ discourse, three quantitative studies also suggest a relationship between the objectification of women and perpetration of violence. To test the association between these two

variables, Rudman and Mescher (2012) conducted two implicit-association surveys with college students. In the first survey, the researchers measured the extent to which participants associated women with animals (a process the researchers termed "animalizing") and their self-reported likelihood of committing sexual violence. The results of this first survey showed that for men, but not for their female counterparts, animalizing women was positively associated with rape proclivity. In other words, the less human that the men perceived women to be, the more willing they were to perpetrate sexual assault. In Rudman and Mescher's (2012) second survey, a sample of college men were tested for their implicit associations of women with both animals and objects. Replicating the results of their first survey, they continued to find a relationship between men's animalization of women and their self-reported rape proclivity. Men's implicit associations of women and objects also resulted in a significant relationship with rape proclivity. As a whole, this set of surveys provides evidence that associating women with less-than-human qualities is related to perpetration of sexual violence – importantly, though, Rudman and Mescher (2012) measured rape proclivity and not actual perpetration of sexual violence. Although research does indicate a that a link exists between rape proclivity and perpetration of sexual violence (Malamuth, 1981), rape proclivity is still just a proxy for sexually abusive behaviors. The two other studies examining the relationship between objectification and perpetration of sexual violence, however, included behavioral measures of sexual violence perpetration.

Gervais and colleagues (2014) conducted an online survey with 502 men attending college to explore the relationship between the objectification of women, alcohol consumption, and self-reported experience of perpetrating sexual violence. Objectification of women was associated with both higher alcohol consumption and sexual violence perpetration, leading the authors to propose that men's objectification of women might serve as a mediator for the relationship between alcohol consumption and sexual violence perpetration.

Ramsey and Hoyt's (2015) two-part study further established an association between objectification and sexual violence: the more the male participants objectified their female partners, the more likely they were to use sexual pressure and coercion against them. This particular result should be interpreted cautiously, though, since the authors note that their partner objectification measure shared a fair amount of variance with other variables related to sexual pressure and coercion, such as religiosity and hostile sexism.

Although limited, the research examining the relationship between the objectification and women and acts of sexual violence indicates that a meaningful association does exist between the two constructs. This suggests that not only can objectification have serious consequences – even more serious, arguably, than objectification's more commonly-investigated effects – but that it is gravely understudied.

Pornography

Defining Pornography

There is a perplexing contrast between the vivid images that the term pornography evokes and the evasiveness of a definition that sufficiently captures it. Most individuals, if presented with pornography, would likely label it as such (although, notably, this question has not been tested in research, perhaps because we take for granted people's confidence in identifying pornography). "I know it when I see it," a phrase famously used by US Supreme Court Justice Potter Stewart in reference to pornography in the obscenity trial *Jacobellis v. Ohio* (1964), is a good example of the general assuredness surrounding pornography. In fact, most articles presenting research on pornography do not offer a definition of the construct for their readers and even fewer provide a definition for study participants (Ashton et al., 2019). It is possible that defining pornography seems like an unimportant task when what is meant by pornography appears to be obvious.

Despite this, there have been efforts to define pornography. The Attorney General's Commission on Pornography (i.e., the Meese Report; 1986), which aimed to evaluate the pornography industry and the impact of pornography, reported the following definition: "A reference to material as 'pornographic' means only that the material is predominantly sexually explicit and intended primarily for the purpose of sexual arousal" (pp. 228 – 229). Hard-core pornography, also discussed in this government report, was similarly described as "material that is sexually explicit to the extreme, intended virtually exclusively to arouse, and devoid of any other apparent content or purpose" (p. 229). Dozens of other definitions, usually including some elements of sexual explicitness and intention to produce arousal, have been produced

over the decades since the Meese Report (see Ashton et al., 2019, for a sampling of recent definitions used in research). For instance, Hald, et al. (2010) define pornography as "sexually explicit materials intended to create sexual arousal in the consumer," (p. 15), whereas Peter and Valkenburg (2009) describe it as "that [which] depicts sexual activities in unconcealed ways, often with close-ups with (aroused) genitals and of oral, anal, or vaginal penetration" (p. 408).

However, no single "gold standard" definition of pornography has been identified. As such, researchers (on the occasion they do provide a definition) have seldom used the same definition of pornography (Owens et al., 2012). Ashton and colleagues (2019) attempted to produce a unifying definition of pornography, describing it as "Material deemed sexual, given the context, that has the primary intention of sexually arousing the consumer, and is produced and distributed with the consent of all persons involved" (p. 20). Yet this is still insufficient. The latter component of this definition, that only consensually-created sexually explicit material counts as pornography, is an almost entirely useless as a criterion since consent of the individuals involved in pornography cannot be determined by observers. In this way, only the creators of sexually explicit content would know whether their material constitutes pornography or not. To illustrate this, consider one of the world's most famous pornographic films, *Deep Throat*. The X-rated film ostensibly shows its protagonist Linda Lovelace willingly and eagerly engaging in sex acts; however, Lovelace later revealed in testimony to the 1986 Attorney General's Commission on Pornography that she was coerced into performing in the film (and others) by her

then-husband, stating that anyone watching *Deep Throat* was watching her being raped (Bronstein, 2013). This film does not meet the consent criteria, yet there is no doubt that this notorious work is pornography. Moreover, making a distinction between consensual and non-consensual pornography feels appropriately progressive but misses the crux of issue: Pornography serves its consumers, even (and especially) at the expense of its subjects, whose maltreatment either is the point or is beside the point.

Aside from this particular definitional issue, there are a few more general reasons why pornography has proven to be a challenging term to define. First, pornography is somewhat of a moving target. A few decades ago, pornography was generally limited to films, images, and printed text. The arrival of the Internet greatly diversified the media landscape, including pornography. Now, in addition to more conventional images and videos, there are pornographic video games, immersive virtual reality pornography, live "cam girl" video streams, sexually explicit gifs (i.e., a brief, soundless video that automatically loops), and more. Some of these new modalities may be included in general definitions that, for instance, describe "videos" in broad terms, but others, like video games, may not be. Another reason is that there is a fair amount of media content that falls into a baffling pornographic gray area. For instance, social media platforms host like Facebook, TikTok, and Twitter host popular videos show young, attractive women using food products in messy and grotesque ways to make inedible creations (in one video, a woman fills a toilet with ice cream, candy, and other sweets and mixes the concoction with her hands before

ladling it into cups – this particular video has over 7 million views on Twitter). Often described by the videos' creators as pranks or cooking "hacks," it is speculated that these videos are actually fetish material for those who are aroused by wet and messy food scenarios featuring women (Mahan, 2021). There is nothing overtly sexually explicit about these videos – after all, most mainstream social media would remove videos showing bare breasts or genitals – yet they are intended to provoke arousal in a specific audience. Many viewers, however, do not seem aware that these videos are fetish-related and respond with confusion (Lopez, 2021), suggesting that a sizeable proportion of viewers does not "know it when they see it." This kind of sexual content easily hides in plain sight and does not automatically trigger thoughts of pornography. Moreover, under definitions that include sexual explicitness, these videos would likely not count as pornography despite being pornographic for a certain group of people. This example serves to illustrate one of the central difficulties in trying to define pornography: some material will only be pornographic for a niche audience – does this mean it is always pornography or just sometimes pornography?

The obstacles that stand in the way of developing a "gold standard" definition of pornography need not be the ruin of pornography research, however. Instead, it might be better practice to establish what pornography is *not*. For instance, it seems clear that pornography is not limited to a specific modality. This is important because research is sometimes too limiting in their measurement of pornography. In a survey of pornography use, Regnerus et al. (2016) base their analyses on a single item asking

participants whether they had seen an "X-rated movie." This term is not only outdated but is also fails to capture a diversity of pornographic material, a limitation the authors acknowledge. Pornography may also not be consistent with the kind of content it presents. Depending on its audience, pornography can include varying degrees of nudity (including no nudity), explicit sexual acts or a complete absence of acts, real or simulated non-consent, and so on. With that said, pornography is not simply any sexually provocative material – there are important distinctions between pornography and, for example, racy advertisements that appear during football game broadcasts. Sexualized but non-pornographic media is significantly less explicit and, importantly, is permitted to be more publicly visible than pornography. While sexualized non-pornographic media arguably exists to incite arousal, just as pornography does, it typically stops short of the hallmarks of pornography such as displays of genitals, masturbation, and intercourse.

Furthermore, it is entirely possible that a gold standard definition of pornography would fulfill a philosophical need rather than a practical one. In most scenarios where a definition might be useful, such as pornography research with participants, a definition of pornography that is neither overly restricted nor overly complicated may serve its intended purpose of evoking the type of content typically considered to be pornography. Any given definition might not capture some materials that are pornographic for some people – such as the wet and messy fetish videos that are popular on mainstream media platforms – but it is likely to appropriately evoke conceptualizations of material most people would consider to be pornographic.

Generally, good-enough definitions of pornography – ones that describe a range of modalities and a variety of content without imposing limiting criteria – are functional and appropriate for most practical uses. Many definitions of pornography are likely to good enough, such as the one used by Rasmussen and colleagues (2016), which itself is adapted from Morgan (2011). Their definition describes pornography as "(a) pictures and/or video with naked people portrayed sexually, (b) pictures and/or videos of people engaging in sex or masturbation, and (c) written or audio material describing people engaging in sex or masturbation. Having sex includes vaginal, anal, and oral penetration" (p. 441).

Pornography Content

A definition of pornography, no matter how comprehensive or otherwise ideal, cannot easily convey the nature of pornography. Most definitions offer no insight into what people actually see when they view pornography – the specific behaviors and acts, the way words are used or not used, what is shown and not shown, and the implicit and explicit messages communicated to viewers are impossible to know based on a general definition of pornography. To understand pornography means getting acquainted with its content.

Content analyses have been conducted on pornography since the early 1980s. Due to concerns about the violence and degrading representations in heterosexual mainstream pornography, most analyses focused on sexual aggression and representations of women in this genre. One of the first content analyses quantifying the violent content in pornography examined pictorials and cartoons appearing in

Penthouse and *Playboy* issues published in the 1970s (Malamuth & Spinner, 1980). The researchers found that, across the two magazines, 10% of the cartoons and 5% of the pictorials contained sexually violent imagery. Films offered even richer (and, incidentally, more violent) material for researchers to examine. Palys (1986) analyzed 150 adult and triple-x pornographic videos released from 1961 to 1984 that were available to rent from video outlets in Canada. Verbal anger or humiliation was featured in 77% of adult-film scenes and 60% of triple-x scenes, and rape was present in 21.9% of scenes of adult-themed videos and in 30.6% of triple-x themed videos. Additionally, when coding for rape-myth reinforcement (i.e., content that showed women as saying "no" to sex when they really meant "yes," or that a woman who initially resists sex will ultimately enjoy it, or that a woman was somehow deserving of rape), 28% of adult film scenes and 22% of triple-x videos were found to promote rape myths. These early content analyses identified a gender disparity between aggressors and victims: perpetrators of aggression were largely male characters and women were more frequently the targets (Cowan & Campbell, 1994; Palys, 1986; Yang & Linz, 1990).

The Internet, ushering in a new modality of pornography, changed the pornography landscape considerably beginning in the late 1990s. Early analyses of pornographic content online suggested that it was more aggressive and violent than its print and film counterparts. Barron and Kimmel (2000) analyzed user-posted pornographic stories on a news-sharing server called Usenet and compared rates of its violent content to that of magazines and videos bought in adult stores. Compared to

24.8% of magazines and 26.9% of videos, 42.1% of Usenet vignettes contained some form of violence. Approximately 17% of Usenet content was categorized as “extreme sexual violence” by the researchers; in comparison, only 1.9% of both magazine and video content met this criterion. Like with most violence in pornography, most violence featured in the Usenet stories (62.7%) was perpetrated by a male character against a female character.

More recent content analyses provide insight into the prevalence of aggression and violence in contemporary pornographic media. Using a sample of 275 most popular adult films of 2004 and 2005, Bridges et al. (2010) coded for physical aggression (such as gagging, slapping, spanking, and hair-pulling) and verbal aggression (name-calling, insults, and threats). In total, physical aggression was present in 88.2% of scenes analyzed and verbal aggression was found in nearly half of the scenes. Spanking (75.3%), gagging (53.9%), open-hand slapping (41.1%), and choking (27.6%) constituted the most common acts of physical aggression. Importantly, this content analysis indicated that nearly 95% of all physical and verbal acts of aggression targeted women, demonstrating that heterosexual pornography is greatly inequitable in its violence. To add to this, women targeted by aggression were shown as responding neutrally or pleasurably 95% of the time.

In fact, it is relatively uncommon for pornography to show women’s resistance or displeasure. For instance, Klassen and Peter (2014) analyzed the content of online pornography videos and reported that 6% of women appearing in online pornographic videos were portrayed as explicitly non-consenting to the sexual

activity. This finding is supported by a similar content analysis that found only 7.4% of pornography scenes contained obvious instances of non-consent (Jozkowski et al., 2019). While it is assuring that most pornography is not overwhelmed by rape content, this also means that it communicates the message that women enjoy men's aggression. Women are consistently shown as accepting of verbal abuse, physical harm, and degrading acts. There is a scarcity of examples in pornography in which women's non-consent or refusal is met with cessation of sexual activity and negotiation between performers – this would be a meaningful example of consent in pornography.

Prevalence and Popularity

Despite (or, perhaps, because of) its aggressive and other antisocial content, pornography is ubiquitous and widely consumed. The full scope of pornography is difficult to assess. Along with the definitional challenges relating to pornography, including decisions about what materials can be claimed as pornography, specific numbers about its prevalence can be difficult to obtain. There are, however, insights and estimates that shed light on its ubiquity.

According to website traffic analyses, Pornhub.com (a popular online archive of pornographic videos) was the 8th most-visited website in the United States in July 2021 after garnering a total of 1.26 billion website visits ("Top 100: The Most Visited Websites in the US," n.d.). Ranking below Pornhub.com in visits for that month were social media giants Instagram.com and twitter.com, which both failed to attract as much traffic as the explicit website ("Top 100: The Most Visited Websites in the

US," n.d.). According to the same traffic analytics, two other pornography websites, xvideos.com and xnxx.com, also earned spots in the top 20 most-visited websites for July 2021, ranking 12th and 16th, respectively. In 2019, Pornhub.com boasted the addition of 6.83 million new videos and 1.36 million hours' worth of new content uploaded to the site in the span of a year (Pornhub, 2019). This was, however, before Pornhub removed millions of amateur pornographic videos from its site in 2020 after news reports emerged that the website was hosting videos of underaged girls being raped and assaulted (Valinsky, 2020). While Pornhub may have suffered a slight drop in popularity as a result, other websites (xnxx.com in particular) appear to be picking up some of Pornhub's lost traffic (Taylor, 2021).

Pornography's magnitude and influence can also be gauged by the money it generates. Reports estimate that the pornography produces a revenue of anywhere between $9 billion to $97 billion a year globally, potentially making it a bigger industry than Netflix ($11.7 billion) or even Hollywood ($11.1 billion) (Naughton, 2018). OnlyFans, a relatively new pornography platform driven by individual content creators, shared with potential investors its projection to collect a revenue of $2.5 billion in 2022 (Primack, 2021). Most financial valuations of pornography as an industry are essentially well-researched guesses, however, as revenues and profits are not typically disclosed by pornography-based businesses. In an interview for Yahoo Finance, the managing editor of pornography trade magazine Adult Video News stated, "The safe estimate is to say it's worth billions, but I don't know exactly how many billion, and no one does" (Benes, 2018, para. 4). Apart from non-disclosure

from major pornography websites, another issue that complicates the estimation process is that of classification: what counts as pornography? While it is simple enough to identify websites like Pornhub.com as a contributor to the pornography industry, other revenue streams like amateur webcamming, pornography performers' personal websites, and analog forms of pornography (like print media) may not always be easily figured into monetary estimations. The true extent of the pornography industry may be largely unknowable.

Although precise information about the pornography industry may be lacking, pornography has certainly earned a place in the Western mainstream media diet. In the past century, pornography has consistently occupied some corner of the media world. Yet, up until only a few decades ago, pornography was limited to analog photos and videos that typically required some effort to obtain – consumers had to place orders in the mail, subscribe to specific cable channels, visit adult shops, or inherit a stash of magazines or videos. The arrival of the Internet, followed by the influx of Internet-enabled personal devices, essentially removed all barriers to pornography access. In a prescient article written near the dawn of the Internet era, Cooper (1998) described how the Internet's "Triple A engine" of Access, Affordability, and Anonymity would leave an indelible mark on sexuality, leading her to conclude, "Like Pandora's Box, once opened, it is now impossible to go back. Forever more these two entities will be inextricably linked" (Cooper, 1998, p. 192).

And indeed, advancements in technology have offered nearly unfettered access to pornography that is both free and anonymous (or, at least, provides an

appearance of anonymity). Approximately 85% of American adults own a smartphone and 75% own a desktop or laptop (Mobile Fact Sheet, 2021). Unsurprisingly, a clear majority of consumers primarily view pornographic material through the Internet as opposed to print magazines or other analog sources (Dwulit & Rzymski, 2019; Hald et al., 2013; Herbenick et al., 2020; Zohor Ali et al., 2021). Smartphones and other pocket-friendly technology are consumers' preferred method of accessing pornography online; for instance, Pornhub reports that mobile devices were responsible for approximately 84% of all its website's traffic in 2019 (Pornhub, 2019). Pornography's easy accessibility and transportability via mobile devices allow consumers to view pornography at nearly any time and location. One survey of college students reported that nearly 16% had viewed pornography at a location other than home (Zohor Ali et al., 2021). Another survey of adult men found that 16.1% of men disclosed that they had viewed pornography at work on a mobile device and additional 5.4% had used a computer to browse adult content at work (Downing et al., 2016). Youth may also be spending time at school visiting pornographic websites; a survey of primarily Black and Hispanic high school students revealed that 10% had ever viewed pornography at their high school (Rothman & Adhia, 2016). According to Pornhub's annual statistics summary, weekdays from 2pm-6pm see above-average website traffic (Pornhub, 2019), which further suggests that some consumers may be viewing pornography during regular work or school hours. The COVID-19 pandemic and subsequent work-from-home status of millions of workers has further boosted pornography viewing during typical business hours. An analysis of Pornhub's traffic

at the start of the pandemic revealed that website traffic at 1pm was 26.4% higher than pre-pandemic levels (Pornhub, 2020). It would seem as though the "Triple A engine" that drives most pornography today allows consumers to more easily invite this type of sexually explicit content into their everyday lives.

Considering the immediacy and ease of access to pornography online, it would be fair to speculate that pornography consumption is relatively high. Indeed, research generally suggests that the majority of men and a substantial number of women have ever been exposed to pornography. A nationally representative sample of over 2,000 adults aged 18-70 years in the U.S. reported that 94% of men and 87% of women had viewed pornography at least once in their lives (Herbenick et al., 2020). Rates for lifetime pornography exposure are similarly high outside of the U.S. as well. A recent survey of nearly 1,000 college students in Malaysia, a relatively conservative country, indicated that nearly 95% of men and nearly half of women had viewed pornography at least once (Zohor Ali et al., 2021); research on college students in Eritrea, another conservative country, found that 78% of young men and 58% of young women had ever seen pornography (Amahazion, 2021). In a survey of 6,500 Polish college students, researchers concluded that 78.6% of their sample (78.4% of women and 79% of men) had viewed pornography (Dwulit & Rzymski, 2019). When measured in terms of exposure in the past year or past month, the gender gap in pornography consumption tends to grow wider. The Relationships in America survey, a nationally representative survey with thousands of individuals, asked participants when they had last intentionally look at pornography. Results

indicated 69% of men and 40% of women aged 18-39 years reported viewing pornography within the past year (Regnerus et al., 2016). More recent survey results have reported higher levels of pornography use. Solano and colleagues (2020) surveyed 1,415 adults aged 18-73 years living in the U.S. and found that 92.3% of men and 67.9% of women had viewed pornography in the past year. Similarly, 91.5% of men and 60.2% of women reported viewing pornography within the past month. Weekly consumption rates tend to remain high for men. Regnerus and colleagues' (2016) analyses found that in a given week, 46% of men and 16% of women seek out and view pornography, a finding that suggests men are more regular consumers. Results from a large survey of individuals living in Sweden revealed a higher weekly pornography use rate for male respondents aged 16-24 (65.6%) and a similar weekly consumption rate for female respondents of the same age group (12.9%) (Malki et al., 2021). Solano et al.'s (2020) study revealed that, on average, men spend over an hour viewing pornography per week and women spend an average of approximately 21 minutes.

Trends in Pornography Use

Exact estimates of pornography use vary depending on study methodology, but research tends to produce a few reliable findings. First, with respect to demographic variables, men tend to report higher pornography exposure and use frequency than women (Carroll et al., 2008; Grubbs et al, 2019; Regnerus et al., 2016; Solano et al., 2020; Willoughby et al., 2014). One notable exception is Dwulit and Rzymski's (2019) survey of Polish adults, which did not identify significant

differences in men and women's pornography use; the reasons for this finding are not clear, although the authors suggest it may signify women are catching up to men's pornography consumption.

Pornography consumption peaks among young adults ages 18-26 and then declines with older age (Malki et al., 2021; Perry & Schleifer, 2019; Price et al., 2016). Surveys of pornography use suggest that non-white individuals in the U.S. consume slightly more pornography than their white counterparts (Cooper & Klein, 2018; Malki et al., 2021; Wright, 2013), although the reasons for this finding are understudied and not well-understood. Sexual orientation is also a predictor of pornography use, with LGBT individuals reporting greater pornography usage than heterosexual people (Bőthe et al., 2018; Hald et al., 2018). Research suggests that pornography use may be higher among LGBT populations, particularly among LGBT youths, because of pornography's role in sexual identity confirmation and exploration (Bőthe et al., 2019). Generally, though, pornography is primarily used as a sexual stimulus. In a review of research on motivations for pornography use, Grubbs et al. (2019) identified sexual arousal and excitement as the leading reasons people view pornography for both men and women, although men more uniformly report viewing pornography for pleasure-related reasons. Less common motivations identified in the review include curiosity and information-seeking, to appease or bond with a sexual partner, and as a way to attenuate unwanted internal states like boredom (Grubbs et al., 2019).

There has been some debate whether the rate of pornography consumption has increased over the past few decades. Using data from a large annual survey of U.S. adults (the General Social Survey or GSS), researchers found that 44.9% of men aged 18-26 in the years 1973-1980 had viewed pornography (Price et al., 2016); in comparison, 61.5% of men the same age in the years 2008-2012 had viewed pornography. Wright (2013), in an examination of the same data from the GSS, suggests the rate had increased in only small increments and notes that an additional .5% more men per year viewed pornography from the years 1973 to 2010. However, pornography use rates from the GSS are likely underestimating how many individuals are accessing this sexually explicit media. The pornography consumption question on the GSS asks respondents if they have seen a "pornographic film," which may have potentially led survey takers to only consider full-length videos watched in completion. As a result, some participants may have omitted brief pornographic video clips, gifs, video games, still images, and so on. To address this issue, researchers have examined Internet traffic to evaluate the use of pornography materials online. Lewzcuk et al. (2019) analyzed Internet activity from nearly a quarter million Polish residents over a 12-year period from 2004 to 2016. Results identified a 310% increase in the number of individuals accessing Internet pornography over the time period. Although Internet use for all purposes certainly increased over the years as well, Lewzuk and colleagues (2019) found that the rate of Internet pornography exceeded the growth of general online use. Yet this study is still likely to underestimate pornography use growth as it was not able to include mobile devices in its analyses,

which are the predominant way of accessing pornography online (Pornhub, 2019). Challenges associated with survey methodology may prevent a truly comprehensive appraisal of pornography use change over time. However, the available research does indicate pornography use has increased over the past several decades (Price et al., 2016; Wright, 2013), which appears to be at least partially driven by the availability of pornography online (Lewzuk et al., 2019). And with continuous technological developments leading to faster and more broadly available Internet, in conjunction with more affordable mobile devices, there is little reason to believe this upward trend in will cease.

Children and Adolescents' Exposure to Pornography

"It's easy to view sexually explicit stuff and you don't have to go out of your way, it will come to you." (Boy - Grade 9) – Lewis et al. (2018), p. 338

The question of youths' exposure to pornography is closely linked to the advent of the Internet (Peter & Valkenburg, 2016). In the decades preceding the information superhighway, relatively sparse research investigated children's exposure to pornography. Such studies typically examined childhood exposure to pornography among samples of adult sex offenders or juvenile offenders (Condron & Nutter, 1988; Ford & Linney, 1995; Wieckowski et al., 1998). But just as the Internet made pornography accessible, affordable, and anonymous for adult audiences, it also granted young children and adolescents easy access to sexually explicit materials online. This gave rise to greater concerns about children's exposure to pornography, which resulted in the proliferation of research on the issue.

Most digital natives (i.e., people who grew up during the time of digital technology) first experience pornography as children. Research estimates that the average age of first pornography exposure is around 11-13 years for boys and 13-17 years for girls (Herbenick et al., 2020; Lim et al., 2017; Sinković et al., 2013; Wright & Štulhofer, 2019). In addition to the average age of exposure, some individuals in these studies report very young ages of first pornography exposure. For instance, some studies indicate the youngest age of first pornography exposure to be 6 years old (Bőthe et al., 2021; Palazzolo & Bettman, 2020) or 7 years old (Harper & Hodgins, 2016). Camilleri and colleague's (2021) large survey of U.S. college students revealed that approximately 9% of men and 14% of women were first exposed to pornography at 8 years old or younger, suggesting that it is not unusual for very young children to be exposed to pornography.

Some studies suggest that youths' exposure to pornography rivals the exposure rates of adults. A survey of over 1,000 Taiwanese high school students indicted that 71% had viewed pornography at least once (Chen et al., 2013). This finding is similar to Wright et al.'s (2020) survey of 614 adolescents, which found that 68% had been exposed to pornography. Other studies have identified even higher rates of pornography exposure among young people. Thurman and Obster's (2021) sample of U.K. teens found that 80.5% of their sample had been exposed to pornography, while 84% of Nguyen and colleagues' (2020) sample of Vietnamese adolescents reported pornography exposure. Perhaps unsurprisingly, nearly all boys and around half of girls will have been exposed to pornography by the time they are

18 (Sabina et al., 2008; Svedin et al., 2011). Frequency of pornography use can be quite high among youth as well. A survey of around 3,000 Canadian teens reported that 52% of their respondents (including 70.5% of cisgender/heterosexual boys) viewed pornography on a weekly basis (Bőthe et al., 2020).

Many instances of children's exposure to pornography are unintentional, however. A national survey of teenagers living in the United Kingdom discovered that 44% of teens had seen pop-up advertisements for pornography while browsing the web and 41% had unintentionally visited a pornography website (Livingstone & Helsper, 2010). A similar survey of American children aged 10-17 years found that 66% of those who had viewed pornographic material online within the past year had done so unintentionally (Wolak et al., 2007); in contrast, only 34% of children who had viewed sexually explicit content indicated that their exposure to pornography had been wanted. In addition to pop-up ads (Livingstone & Helsper, 2010), young people may also inadvertently view pornography through misspelled website addresses, web searches for non-pornographic material, spam emails, or redirections from websites (Chen et al., 2013). Social media platforms may be another way youths access pornography unintentionally. Research suggests it is more common to have seen pornography on social media platforms like Twitter and Instagram (63% of respondents) than on pornography-specific sites (47% of respondents) (Thurman & Obster, 2021).

The type of pornographic material that young people report seeing (intentionally or unintentionally) can sometimes be extreme. A survey of young

adults reported that approximately 18% of men and 10% of women had viewed rape or sexual violence in pornography between the ages of 8 and 17 years (Sabina et al., 2008). This study also found that participants had also seen sex between human and animals (31.8% of men, 17.7% of women) and sex involving urine or feces (21.8% of men, 16.4% of women) by the time they were 17 years old (Sabina et al., 2008). Another survey of Swedish adolescents reported that, among adolescents who view pornography frequently (i.e., every day or nearly every day), 30% had seen violent or forced sex, 30% had watched individuals have sex with animals, and 17% had viewed sex between adults and children younger than 15 (Svedin et al., 2011). More recent research suggests that young people are still coming across difficult pornographic content. Rostad and colleagues (2019), in a survey of American high school students, found that nearly 30% of boys and 16% of girls had viewed pornography featuring women being forced to engage in sexual acts.

Pornography's Associations with Attitudes and Behaviors

Meta-analyses and systematic reviews encompassing decades of research have identified pornography to be significantly associated with permissive sexual attitudes and stereotyped ideas about gender (Peter & Valkenburg, 2016), violence-supporting attitudes (like rape myth acceptance) (Hald et al., 2010), earlier age of first sexual experience (Owens et al., 2012), unsafe sex practices, greater number of sexual partners, and sexual risk-taking (Grubbs et al., 2019; Harkness et al., 2015), and lower relationship satisfaction (Wright et al., 2017). A meta-analysis of studies that experimentally exposed participants to pornography found that pornography viewing

increased violence-supporting attitudes as well as behavioral (non-sexual aggression) (Allen et al., 1995). Generally, longitudinal studies support the idea that pornography precedes changes in attitudes. Specifically, pornography viewing has been shown to be a precursor for people's attitudinal changes in traditional gender roles (Brown & L'Engle, 2009; Koletic, 2017; Wright & Bae, 2015) and opposition to affirmative action for women (Wright & Funk, 2014).

Pornography and Sexual Violence

For decades, one of the most critical questions related to pornography use concerns its association with sexual violence. As argued by radical feminists (Dworkin, 1981, 2000; MacKinnon, 1989), pornography encourages and sustains men's perpetration of sexual violence against women. As such, much research has focused on this topic.

Although rape proclivity (i.e., the likelihood of committing rape if there was no chance of facing repercussions) is not strictly a behavioral measure, some research has identified a positive association between individuals' self-reported rape proclivity and pornography consumption (Boeringer, 1994; Demare, Briere, & Lips, 1988). These two studies found that type of pornography moderated this relationship, as analyses revealed particularly strong associations between rape proclivity and use of pornography that depicts sexual activity occurring with the explicit non-consent of the female characters. However, nonviolent pornography (pornography characterized by apparent sexual consent and lacking in physical violence, such as beating or

whipping) was generally predictive of rape proclivity as well (Boeringer, 1994; Demare et al., 1988).

Perpetration of sexual aggression, a term encompassing behaviors that meet the legal standards for rape, attempted rape, and sexual harassment, is similarly associated with pornography use (Boeringer, 1994; Simons et al., 2012; Vega & Malamuth, 2007), even among adolescents (Bonino et al., 2006; Stanley et al., 2016; Ybarra et al., 2011). To synthesize this body of research, Wright and colleagues (2012) conducted a meta-analysis of 22 studies from seven different countries (totaling in over 20,000 participants), which produced a few important conclusions: first, pornography use was found to be a significant predictor of sexual aggression perpetration, resulting in an average correlation coefficient of 0.28. Second, violent pornography tended to produce stronger associations with sexual aggression perpetration than did non-violent pornography; however, a test for a possible moderating effect of violent content on the relationship between pornography and sexual aggression did not yield significance. Finally, when looking more closely at type of sexual aggression, the meta-analysis concluded that, while both verbal and physical sexual aggression were related to pornography use, verbal sexual aggression (e.g., pressuring someone into having sex through lies, false promises, or threats) was more strongly associated to pornography. As Wright et al. (2012) note, verbal coercion may be perceived as less condemnable compared to physical coercion, thus making verbal sexual aggression a relatively more common and less proscribed expression of sexual violence.

Similar to research exploring the influence of third variables in the association between attitudes and pornography use (Hald & Malamuth, 2015), studies have identified significant moderators in the relationship between pornography and sexual violence, including hostile masculinity and preference for impersonal sex (Malamuth et al., 2000; Vega & Malamuth, 2007), corporal punishment experienced during childhood (Simons et al., 2012), and alcohol intoxication (Davis et al., 2006; Wright et al., 2015). The role of these third variables is important – after all, not everyone who consumes pornography engages in sexually violent behaviors. In a review of individual difference variables in the pornography and sexual violence research, Kingston and colleagues (2009) conclude that such variables should not be viewed as having a mediating effect; in other words, the absence of these variables would still not render pornography entirely harmless. Instead, the authors encourage individual difference variables to be viewed as simply affecting the general probability of sexual violence perpetration. Ultimately, Kingston et al. (2009) argue that the inclusion of these variables in theoretical models brings researchers closer to understanding the causal pathways between pornography and sexual violence.

Indeed, experimental research has provided preliminary evidence for the argument that pornography leads to sexual aggression. Due to ethical limitations, experimental research has focused on pornography's effects on relatively small acts of aggression within the context of a laboratory setting. For example, Donnerstein and Berkowitz (1981) exposed male participants to either an erotic or neutral film then provided them with the opportunity to administer an electric shock to a female

confederate. In a meta-analysis of the experimental research on pornography exposure, Allen et al. (1995) collected information from 33 experiments that measured aggressive post-pornography behaviors in over 2,000 participants and discovered an overall increase in aggressive behaviors following exposure to pornography. The authors also found that both violent and non-violent pornographic content increased aggressive behaviors, but that violent pornography tended to produce a greater effect on aggression – this particular finding underscores a trend among meta-analyses with pornography: while violent pornography is typically associated with stronger effects, nonviolent pornography is also reliably associated with studies outcome variables (Allen et al., 1995; Hald et al., 2010; Wright et al., 2012).

Mechanisms of Pornography's Influence

Research testing the associations between pornography use and attitudinal and behavioral outcomes is predicated on the notion that pornography has an impact – either directly or indirectly – on the measured outcomes. The mechanisms of pornography's influence, or how it affects change in attitudes and behaviors, can be explained by a few theories.

Cultivation Theory

Cultivation theory (Gerbner & Gross, 1976) was developed out of concerns over the influence of television (particularly violent television) on people's worldview and behavior. According to this theory, higher levels of exposure to television cultivates the idea that content presented in television programming reflects

the real world. In other words, prolonged exposure to the recurrent messages and ideas in television programming leads individuals to accept such information as accurate, valid, or real. Gerbner and Gross (1976) focused on television for their theory because of its ability to easily reach and impact its audience – it does not require literacy, it is available at no cost to consumers, it offers striking visual imagery that accompany its messages, and is readily available in people's homes. Moreover, the authors argue television's role as a source of entertainment makes it an especially powerful influence, stating that "entertainment is the most broadly effective educational fare in any culture" (Gerbner & Gross, 1976, p. 177). These characteristics apply to the most common forms of pornography; it is free, easily accessible, offers vivid visual information, and brands itself as a form of entertainment. Just as frequent television consumption encourages viewers to adopt the worldviews it presents, frequent pornography use may similarly cultivate notions about gender and sex that are prevalent in pornography.

Social Learning Theory

Bandura's social learning theory (Bandura, 1976, 1978) can also provide insight into the ways pornography influences its viewers. Briefly, social learning theory posits that learning can occur through the observation of others and the consequences the observed people experience. Bandura termed this process modeling, and it reflects people's ability to learn a wide range of behaviors based on observation. Observation of negative consequences following a behavior lessens the likelihood of modeling, while observation of rewarded behaviors increases modeling.

Bandura was especially interested in using social learning theory to describe the social transmission of aggression (Bandura, 1978) and identified the mass media as a source for observational learning. Bandura outlined four ways aggressive media encourages aggressive behavior: "(1) it teaches aggressive styles of conduct, (2) it alters restraints over aggressive behavior, (3) it desensitizes and habituates people to violence, and (4) it shapes people's images of reality upon which they base many of their actions" (Bandura, 1978, p. 15). The parallels to pornography are evident here, too – pornography displays aggressive behaviors as desirable and leading to positive outcomes. Pornography rarely shows ramifications of aggression, and in fact rewards men's aggression against women with shows of women's pleasure (Bridges et al., 2010), thereby increasing the likelihood that one (or more) of the four media-to-aggression pathways will be activated.

Sex Scripting Theory

While sexual scripting theory (Simon & Gagnon, 1986) is less concerned about learning processes, as cultivation theory (Gerbner & Gross, 1976) and social learning theory (Bandura, 1976, 1978) are, it presents a descriptive roadmap of sexuality. Simon and Gagnon (1986) describe three different levels of sexual scripting: cultural scenarios, interpersonal scripts, and intrapsychic scripts. Each level of scripting interacts and influences the other, either directly or indirectly. The first level, cultural scenarios, represents the widespread, general messages shared through various cultural institutions, such as the media, education, and religious organizations. These are the culturally-shared ideas about sex that not only determine the meaning

attached to sexual behaviors, but also define the parameters for what does and does not constitute sex. Interpersonal scripts represent an individuals' own sexual behavior. On this level, cultural scenarios are interpreted and customized so that sexual behaviors become appropriate and realistic for the individuals involved. Oftentimes, an individual's interpersonal script borrows almost entirely from the cultural scenarios and may offer only small variations to the culture-wide sexual norms. The final level, intrapsychic scripts, represent the "private world" (Simon & Gagnon, 1986, p. 100) of people's desires, fantasies, internal rehearsals, and memories. While experienced as innate desire, these scripts represent a negotiation between culturally defined meanings and actual behaviors (Gagnon, 1990). The intrapsychic script is a complex product of both cultural scenarios, personal experience, and personal preference. It guides and determines which culturally-recognized sexual behaviors are worthy of pursuit and rumination.

Simon and Gagnon (1986), the originators of sexual scripting theory, note that sexual scripts are so integral to sexual activity that "without the proper elements of a script that defines the situation, names the actors, and plots the behavior, nothing sexual is likely to happen" (Simon & Gagnon, p. 17, as cited in Gagnon, 1990). The importance of sexual scripts therefore cannot be overstated; such scripted guides not only provide the rules of sexual behavior but are also responsible for the manifestation of most, if not all, sexual behavior. They provide information about sexual cues, the sequence of sexual behaviors, and the roles each participant assumes during sex. By supplying information about the who, what, where, and when of sex,

anxiety and uncertainty surrounding sexual behavior is reduced (Simon & Gagnon, 1986); sexual encounters become formulaic, predictable, and easy to follow.

Sexual script theory usefully outlines how sexual behaviors are socially constructed with respect to cultural norms, personal influences, and interpersonal behaviors. Given its emphasis on sociocultural factors in its explanation of human sexuality, sexual script theory provides a way to conceptualize how certain cultural factors can both determine and influence sexual behaviors. Of all the sexual information about sex available in most cultures, pornography offers the clearest script to follow. From start to finish, pornography provides all the information needed to engage in sexual activity – how sex begins, what behaviors are expected, who participates in said behaviors, and so on.

Pornography is only a cultural-level script, of course. It must contend with the interpersonal and intrapsychic levels to make a measurable impact on people's sexuality. To explain how pornography becomes incorporated into individuals' sexual scripts, Wright (2011) developed a script acquisition, activation, and application (3AM) model. In this model, a script must first be acquired through observation of sexual media and then activated (i.e., remembered, cued, or otherwise active in an individual's memory) before being applied to one's own sexual attitudes or behaviors. A host of individual, social, and contextual factors influence each stage of this process. For instance, for a script to be acquired in the first place, it must be embedded in content that viewers find arousing or plausible; the likelihood of acquisition is also increased if the pornographic script has little competition with

other existing sexual scripts (Wright, 2011). Ultimately, $_3$AM offers an important theoretical framework for understanding how pornography impacts sexual attitudes and behaviors.

Porn Sex Scripting

Of particular interest to the current study is the integration of porn sex scripts (i.e., the sexual script demonstrated by pornography) in interpersonal sex scripts. Do people actually reproduce pornography sex in their own sexual experiences? The learning and script theories described above suggests this is possible; pornography can cultivate worldviews about sexuality, serve as a behavioral model for imitation, and provide sexual scripts to follow. This specific type of scripting may be particularly salient in sexual aggression as it represents the most literal (and therefore most extreme) integration of pornography into an individuals' life. While research has identified links between pornography use and a variety of outcomes relating to attitudes and behaviors, comparably fewer studies have investigated porn sex scripting. Importantly, however, this body of research indicates that porn sex scripting is a relatively common phenomenon.

A large survey of Swedish high school students found that 52% of frequent pornography users (i.e., used pornography on roughly a daily basis) and approximately 30% of less frequent users had tried sexual activities they had seen in pornography. Sun et al. (2016) surveyed nearly 500 heterosexual college men evaluate the extent to which men would integrate behaviors and activities from pornography into their own sexual practices. Participants were asked to report their

frequency of pornography use and how often they reenact with a partner the sexual activities, positions, and scenes that they have observed in pornographic material. Approximately 36% of the sample reported they had asked a partner to try something from pornography. Further, integration of pornography with sex was associated with higher levels of pornography consumption, meaning that men who viewed more pornography were more likely to try and reenact pornographic content with a partner. In a similar study with sexually active Korean men, Sun and colleagues (2015) found a much higher proportion of men (approximately 73%) had ever asked a sexual partner to try something from pornography. In this study, men who viewed more pornography or who were interested in more extreme types of pornography were more likely to report role-playing pornographic scenes with a partner (Sun et al., 2015). These results echo similar research that has identified positive associations between pornography consumption and engagement in behaviors (like choking) Herbenick et al., 2020; Sun et al., 2017).

Qualitative research has also reported evidence for porn sex scripting. In a series of interviews with 23 urban Black and Hispanic teenagers, researchers found that youth were intentionally employing behaviors seen in pornography (Rothman et al., 2015). When asked about how their own lives were affected by pornography, a 17-year-old female student shared that she had engaged in anal sex after seeing it in pornography: "What shocked me is how those females can take anal sex. I tried it once. I seen how the woman and stuff is so—they look like they get an orgasm from it. But when I tried it, I was so stunned, like, I ended up getting ibuprofens [sic] and

stuff because I was in so much pain" (p. 740). The experience of wanting to emulate pornography behavior is echoed by an 18-year-old female student who stated, "So like during the movie ...she was moaning and making all these sounds. So I was like, I need to try that. Like I was serious...I seen a lot of movies that do that, and this was before [I had sex], so I was just like, I need to try that." (p. 741). A 17-year-old male student in this study explained the appeal of mimicking sex shown in pornography: "If I watch porn and, like, I see a male porn star, and sometimes like, if I'm with a female, I try to do the exact same thing as they're doing, 'cause I figure that they're stars." (p. 741).

Other quotes from Rothman et al.'s (2015) study further underscore how young people use pornography as a way of informing their sexual behavior and practice. One female participant is quoted as saying, "Without porn, I wouldn't know the positions, I wouldn't know half the things I know now" (p. 740). Another young woman described how she watched pornography in order to learn how to "suck dick," while a teen male reported that he watched pornography to learn "how to eat a girl out" and "how to start [sex]" (p. 740). Through these narratives, it is clear that pornography is serving as an educational tool that directly influences the ways in which some young people have sex. Indeed, a survey of over 1200 youths living in the U.S. reported that 24.5% of young adults (18-24 years old) and 17.3% of adolescents 14-17 years old) found pornography to be their most helpful source of sexual information in the past year (Rothman et al., 2021).

The question of whether sex scripting is associated with sexual aggression has only just recently been addressed by research. Using a sample of over 400 undergraduate men, Marshall and colleagues (2021) tested sex scripting as a mediator of the relationship between pornography use and self-reported likelihood of sexual coercion. The pathways in this model were significant, indicating positive associations between sex scripting and coercion proclivity. Importantly, sex scripts were operationalized in this study as perceiving a sexual assault vignette as realistic (cultural level of sex scripting) and the extent to which they could imagine themselves as the male in the story (intrapsychic level), and perceptions of the victims' consent and pleasure (interpersonal level). While these findings provide important information, they do not specifically interrogate porn sex scripting – the extent to which participants actually reenacted porn sex scripts was not included in this study. Consequently, very little is known about the relationship between porn sex scripting in particular and sexual aggression.

The Current Study

Past research has established a relationship between pornography and sexual aggression (Wright et al., 2016), and a limited number of studies have found evidence for a link between objectification of women and sexual aggression (Gervais et al., 2014; Polaschek & Gannon, 2004; Ramsey & Hoyt, 2015; Rudman and Mescher, 2012). A few studies have tested models that incorporate these variables into models for analysis. Wright and Tokunaga (2016) found objectification of women mediated the relationship between men's pornography use and acceptance of violence against

women, as did Zhou et al. (2021), whose study also revealed that a specific type of objectification – animalistic dehumanization – partially mediated the relationship between pornography and sexually coercive behaviors. Seabrook and colleagues' (2019) research similarly identified objectification of women as a mediator between pornography and rape myth acceptance and between pornography and use of sexual deception.

This important line of research can be expanded in a few ways, including the way sexual aggression is measured. In the mediation models discussed above, sexual aggression has been operationalized attitudinally as support of violence against women (Wright & Tokunaga, 2016; Zhou et al., 2021) or as rape myth acceptance (Seabrook et al., 2019); behaviorally, Seabrook et al. (2019) evaluated participation in sexual deception (which manipulative strategies of obtaining sex such as telling someone "I love you" only to obtain sex) and Zhou et al. (2021) evaluated perpetration of sexual coercion. The current study aims to build upon this research by employing two different measures of sexual aggression: rape proclivity (an individual's self-reported likelihood of committing sexual assault in hypothetical scenarios) and perpetration of sexual coercion. Rape proclivity is associated with behavioral sexual aggression (Tharp et al., 2013) and is typically used as a proxy measure of perpetration. Sexual coercion represents a range of behaviors that seek to obtain sex through threats or verbal pressure, emotional manipulation, incapacitation through intoxication, and physical force (Struckman-Johnson et al., 2003). Rape proclivity is a novel addition to this line of research. Moreover, the current study's

design conceptualizes sexual aggression as a latent variable indicated by two different measures of sexual aggression (i.e. rape proclivity and sexual coercion). Previous models with sexual aggression as a latent variable have used a single measure to indicate their latent variables (Seabrook et al., 2019; Wright & Tokunaga, 2016). By using a slightly different latent variable structure, the current study offers a distinct conceptualization of sexual aggression.

The current study also includes a pathway for porn sex scripting, which has not been previously examined in mediation models featuring pornography, objectification, and sexual aggression. Sexual scripts (Simon & Gagnon, 1986) can help explain how elements of pornography – more specifically, how the objectification and aggression inherent in pornography – become incorporated into people's own sexual behaviors and attitudes. Sex scripts represent the ideas and norms surrounding sexual encounters (Simon & Gagnon, 1986), and therefore have powerful normalizing effects. Through sex scripts, objectification and aggression observed in pornography are integrated into personal schemas that determine what is normal, expected, and desirable during sexual encounters. Despite their potential usefulness in explaining how the copious sexual violence in pornography is incorporated into interpersonal sexual encounters, sex scripts are not often examined in research investigating the connections between pornography and sexual aggression. The current study aimed to address these limitations by testing a model that measures the perpetration of sexual aggression along with pornography use and the sexual objectification of women, and by including a measure of porn sex scripting.

To summarize, the current study therefore aims to test a model that features pornography use, objectification of women, porn sex scripting, and the perpetration of sexual aggression (see Figure 1 for a conceptual representation of this model). As in previous research, the model features the objectification of women as a mediator between pornography use and sexual aggression (Seabrook et al., 2019; Wright & Tokunaga, 2016; Zhou et al., 2021). But unlike in previous research, the proposed study will include porn sex scripting as a second mediator variable in the relationship between pornography use and sexual aggression.

In addition to expanding upon the current literature in the ways discussed above, the present study aimed to make other novel contributions to the literature. Previously, the objectification of women has been largely measured by examining individuals' attitudinal acceptance of objectification (Seabrook et al., 2019; Wright & Tokunaga, 2016) (notably, Gervais and colleagues, 2014, did use a behavioral measure of the objectification of women). The current study seeks to measure both attitudinal objectification of women (agreement that objectifying women is acceptable and harmless) and cognitive objectification of women (the extent to which individuals monitor and ruminate on women's bodies). In the model, these two variables will each serve as indicators for the objectification of women. The extent to which participants actively engage in the objectification of women would meaningfully contribute to knowledge about objectification.

Another goal of this study was to collect detailed information about men's pornography use. New data on pornography use are important to collect since ever-

advancing technology essentially guarantees rapid changes in the way people consume media, including pornography. Moreover, comparably few studies quantitatively evaluate individuals' experiences with pornography beyond pornography use frequency. For these reasons, the current study includes measures relating to age of first unintentional and intentional exposure to pornography, age of first regular pornography use, masturbation and pornography, perceived pornography realism, perceptions of pornography as sex positive, and preference for specific pornography genres. These variables will be explored descriptively and through correlations. The current study also contains open-ended items that ask participants to describe both exciting and disturbing content they have witnessed in pornography, as well as one item that allows participants to name specific acts observed in pornography that they have seen and would like to try or have actually tried. These open-ended items will be coded and analyzed for a future project.

Furthermore, the present study aims to evaluate men's beliefs about false rape accusations and investigate their associations with other variables in the study. The notion that women lie about rape is a cornerstone of rape culture and may play a role in men's perpetration of sexual aggression. Men's experiences with accusations of sexual misconduct were also a variable of interest. Other variables, such as social media use, relationship satisfaction, and social loneliness, were also included in the current study to add to the descriptive analyses or to contribute to the study's cover story.

Hypotheses. Overall, it is expected that the model will accurately represent the data. The following hypotheses were made to reflect the specific pathways in the model and the mediation effects:

H1: Pornography use will positively predict increased levels of the acceptance and practice of the objectification of women.

H2: Pornography use will positively predict porn sex scripting.

H3: The objectification of women will positively predict individuals' sexual aggression perpetration.

H4: Porn sex scripting will positively predict individuals' sexual aggression perpetration.

H5: The objectification of women and porn sex scripting will mediate the association between pornography use frequency and sexual aggression.

Method

Participants

Recruitment

Adult, cis-gender men who identify as heterosexual or as sexually attracted to women were eligible for this study. Although there was no maximum age specified in the eligibility criteria, recruitment occurred in online spaces populated mainly by undergraduate students. Recruitment had originally been planned to take place via posting physical flyers on the UC Santa Cruz campus and on other nearby college campuses in the California Bay Area. However, the COVID-19 pandemic forced

most students to move off campus and out of classrooms for the 2020-2021 school year; because of this, posting physical flyers on university campuses was an impractical recruitment strategy. Instead, participants were recruited through electronic study flyers posted on social media websites and shared by instructors of undergraduate courses. The flyer stated the name of the study (Men's Relationships and Dating in the Digital Age), the eligibility criteria, the nature of the research (an hour-long, anonymous online survey), the $10 amazon.com gift card participation incentive, the study's IRB number, and the study's email address. Eligible individuals were invited to contact the email address on the flyer to express their interest in participating. Upon receipt of an email from a potential participant to the research account, additional information about the study, reminders about eligibility criteria, and a link to the survey were provided. Participant eligibility was determined by self-screening (Appendix A contains the self-screening questions used in the study). The first page of the survey contained questions about gender identity, sexual orientation, and age. Any response that indicated an individual did not meet the study's eligibility criteria resulted in an end-of-survey message that thanked individuals for their interest in the study but informed them that they were not eligible to participate.

Recruitment began in January 2021 after receiving approval from the UCSC institutional review board. The flyer was first posted to a private Facebook group intended for students and alumni at the University of California, Santa Cruz (https://www.facebook.com/groups/UCSCofficial). Individuals with UCSC affiliations listed on their personal Facebook accounts are permitted the join this

group, as are people who are invited by group members. This Facebook group is moderated by current and former UCSC students and is not affiliated with the university's official Facebook account. The recruitment flyer was posted to this group once at the beginning of data collection and then a second time three weeks later.

The flyer was also posted to reddit.com, a forum for sharing links and for hosting text-based discussions. Reddit.com is comprised of individual "subreddits," a term used to denote forums dedicated to particular topics or issues. Subreddits for specific universities are common. Content posted to university subreddits is mainly done by and for the universities' current and former students, although access is to most university subreddits is not restricted to individuals who are affiliated with the universities. Recruitment flyers for the current study were posted on subreddits for 14 public universities located in the Western part of the United States, the majority of which were in California. Subreddits for six University of California universities (UC Berkeley, UC Davis, UC Irving, UC Riverside, UC San Diego, and UC Santa Cruz), six California State Universities (CSU Sacramento, CSU Fresno, CSU Chico, and CSU San Bernardino, San Francisco State University, and San Jose State University), as well as the subreddits for the University of Reno Nevada, Northern Arizona University, and the University of Colorado Boulder were used for participant recruitment. The recruitment flyer was posted on the three non-California school subreddits because the number of possible subreddits for California public universities where research recruitment was allowed was limited (for instance, the subreddit for UCLA prohibits any survey-related content). Despite recruiting from

three university subreddits outside of California, all subreddits used for recruiting in this study represented public institutions of higher education in the Western United States. This was done intentionally to obtain participants that resembled the sample that would have been collected if the original recruitment plan had been possible. There was a very small number of participants from other universities who had either come across the recruitment flyer online while browsing a subreddit used for recruitment or had heard about the study from a friend. The number of participants attending or affiliated with other universities was fewer than 10 and were easily identifiable since they contacted the study's email address with .edu addresses. For instance, there was one participant affiliated with Purdue University in Indiana and another with Brooklyn College in New York.

While the vast majority of recruitment took place on Facebook and Reddit, instructors for three introductory undergraduate psychology courses shared the recruitment flyer with their students. The courses were Introduction to Psychology at UCSC and Introduction to Statistics and Qualitative Methods at San Jose State University. Although participants were not asked to indicate where they saw the recruitment flyer, it was often possible to identify individuals who had heard about the study from their instructor. Participants recruited from these courses would often reference the course they were taking in their initial email to the research account; moreover, instructors shared the flyers with their courses during lulls in online recruitment, suggesting that individuals contacting the research account immediately after instructors shared the flyers had been recruited through the courses. It is

estimated that fewer than 15 individuals from the courses participated in the study, indicating that online recruitment more successfully attracted participants.

After three days of recruitment and after approximately 36 participants had taken the survey, the eligibility criteria were further restricted to individuals with a valid .edu email address. This change in eligibility, approved by the UCSC IRB, was motivated by an influx of ostensibly bot-produced responses in the survey. These bots used randomly generated names and Gmail addresses in an attempt to receive multiple $10 amazon.com gift cards. Bot responses, totaling to 58 in number, were identified in the data and removed. Since .edu email addresses are far more difficult to generate by ill-intentional actors, requiring participants to use a .edu email was a sufficient and necessary measure to ensure the integrity of the study.

Once it was estimated that approximately 250 participants had completed the survey, all social media posts inviting individuals to participate were deleted. The survey was then programmed so that individuals who received a survey link but who had not yet begun the survey would no longer be able to access the survey; instead, the survey presented a message explaining that the survey had reached its maximum number of participants and was no longer accepting new participants. Individuals who had started but not yet finished the survey prior to this change in survey settings were allowed several days to submit their responses. In all, recruitment took place over the course of four weeks and concluded in February 2021.

Two-hundred and seventy-nine complete and incomplete responses were recorded after the time period for submitting in-progress responses had ended. A total

of 357 survey links had been sent to individuals interested in participating, meaning that 78.15% of survey links distributed led to participant responses. Individuals who were sent the link but did not access it may have done so for a few reasons. First, the additional information about the survey was included in emails containing the survey link. It is possible that, after learning more about the survey, individuals elected to not participate. Importantly, however, the information presented to people interested in the study did not reveal the true purpose of the research. More specifically, the email sent to people inquiring about the study stated that "the survey includes questions about your personal relationships, media use (including sexually explicit media), attitudes about topics related to sex and relationships, and your own sexual preferences and behaviors. Some questions might reference difficult relationships, people, or experiences." It is therefore not likely that individuals inferred that the research was about pornography, objectification of women, and sexual aggression prior to deciding whether to participate. Another reason why more people who were sent the link did not take the survey was that no reminder emails encouraging individuals to complete the survey link were sent. It is possible that a number of people who received the link forgot about the survey.

Of the 279 individuals who started the survey, 15 started the survey but stopped partway through. This means that 264 participants progressed to the end of the survey and submitted it. Two individuals clicked through the entire survey and submitted it without responding to any questions beyond the screening items, resulting in potentially usable data from 262 participants. Finally, after checking the

demographic variables to ensure that all respondents met the main eligibility criteria (i.e., men ages 18 years and older who are sexually attracted to women), it was found that only one participant, who listed their sexual orientation as gay, failed to meet the three identity-related criteria. This individual's data are excluded for all analyses, including those describing participant characteristics. In total, recruitment produced 261 responses from individuals who met the study's demographic criteria and who completed the survey.

Participant Characteristics

The 261 participants in this study were an average of 22.08 years old (*SD* = 4.01), with a minimum of 18 years and a maximum of 46 years. Overall, only 10 participants were over the age of 30. Two individuals did not report their age, but affirmed they were at least 18 years old in the initial screening questions. All participants identified as cisgender men, and 257 reported being heterosexual or straight; the remaining four participants (or 1.5% of the sample) indicated they were bisexual. Most individuals in the study were university students at the undergraduate (80%, n = 209) or graduate (10%, n = 26) level; only 10% (n = 26) of the sample were not currently students. Of the non-students in the sample, 23 of the 26 were under the age of 30.

Participants were predominantly white or Caucasian (30.7%, n = 80), East Asian (28%, n = 73), and Latino, Hispanic, or Chicano (18%, n = 47). Fewer respondents identified as South Asian (9.2%, n = 24), biracial or multiracial (3.1%, n = 8), African American or Black (1.9%, n = 5), Middle Eastern or North African

(1.1%, *n* = 3), Pacific Islander (1.1%, *n* = 3), and Native American or Native Alaskan (0.4%, *n* = 1). Seventeen participants opted to describe their racial identities in a text box. Fourteen of these responses described Asian identities (e.g., "Southeast Asian," "Vietnamese," "Filipino"), and two individuals reported their racial or ethnic identity as being Jewish. One participant simply entered "2 or more" as their response to this question, which may have been an attempt to indicate that they identified as two or more of the options listed in the racial or ethnic identity question.

Most participants in the current study were non-religious, with 55.56% (*n* = 145) reporting their religious orientation as "None." Smaller proportions of individuals indicated they were Christian (26.8%, *n* = 70), Buddhist (4.6%, *n* = 12), Jewish (2.3%, *n* = 6), Muslim (2.3%, *n* = 6), Hindu (0.4%, *n* = 1), and Sikh (0.4%, *n* = 1). Nearly eight percent of the sample (*n* = 20) opted to describe their religious orientation in their own words. Of these write-in responses, nine individuals identified as Catholics, five as agnostic, and the remaining six individually reported their religious identity as "Between Jewish and Buddhist," "Deist," "Deist/Syncretic Buddhism Judaism," "Jehovah Witness," "Shamanist," and "spiritual." A minority of the participants, only 3.4% (*n* = 9) of the sample endorsed the "very religious" response in a question asking participants to indicate the degree of their religiosity. Most individuals were not at all religious (55.6%, *n* = 145), a little bit religious (28.7%, *n* = 75), or moderately religious (12.3%, *n* = 32).

On a political spectrum ranging from very conservative to very liberal, the bulk of participants selected "Moderate" (36.4%, *n* = 95), "Liberal" (33.7%, *n* = 88),

or "Very liberal" (14.9%, n = 39). Twenty-two participants (8.4%) identified as conservative and four (1.5%) identified as very conservative. Eleven respondents chose to write in their political beliefs, which mainly included left-leaning orientations (e.g., "Leftist," "Progressive," and "Socialist") but also at least two conservative ideologies ("moderate to conservative" and "Libertarian"). Two participants did not report their political orientation.

Materials

Informed Consent Form

Participants were provided with an informed consent form that shared important details about the study. The form stated that the purpose of the study was to "learn more about men's experiences with dating, relationships, and sex, and about their beliefs and opinions related to these topics." Reiterating the information shared in the initial email to participants, the form emphasized that the survey "includes questions about your personal relationships, media use (including sexually explicit media), attitudes about topics related to sex and relationships, and your own sexual preferences and behaviors. Some questions might reference difficult relationships, people, or experiences." Also included on the form was standard language about the length of time required to complete the study, risks and discomforts, benefits, confidentiality, compensation and costs, and participants' rights. Contact information for the project's supervising faculty member and the UC Santa Cruz's Office of Research Compliance Administration was shown toward the bottom of the form. Finally, participants were asked to indicate their decision to participate in the study by

selecting either "I agree to participate" or "I do NOT agree to participate." Appendix B contains the complete informed consent form.

Demographic Questions

A series of questions asked participants to report their age, gender identity, sexual orientation, racial identity, religious orientation, religiosity, political beliefs, political affiliation, and student status. Age was presented as a text-entry box in which participants could type in their age. The remaining demographic survey questions presented multiple-choice responses. With the exception of religiosity and student status, the multiple-choice demographic questions had a *Not listed* response option accompanied by a text entry box. Participants were prompted (i.e., "please use box to enter…") to use the text entry box for each of the *Not listed* response options. Appendix C contains the demographics questions used in the current study.

Measures for Main Study Variables

Pornography. Prior to responding to any questions about pornography, participants were presented with a brief definition of pornography to reference. The following definition from Rasmussen et al. (2016), which was adapted from Morgan (2011), was used: "(a) pictures and/or video with naked people portrayed sexually, (b) pictures and/or videos of people engaging in sex or masturbation, and (c) written or audio material describing people engaging in sex or masturbation. Having sex includes vaginal, anal, and oral penetration" (p. 441). This particular definition was chosen due to its specificity and its inclusion of a potentially wide array of pornographic materials. This is important because many definitions of pornography

tend to focus on genital-display as a key element, despite many pornographic images of women showing just their breasts and/or buttocks (see Ashton et al., 2019 for a discussion of the ways pornography has been defined in research). In addition to the brief definition of pornography, participants were provided with a statement explaining the inclusion of questions about pornography on the survey: "The questions in this section will ask you about pornography. Many people use pornography, and it often plays an important part in their sexuality. Because technology has made pornography more diverse and accessible, we are interested in people's experiences with it." A secondary purpose of this statement was to potentially reduce feelings of shame or embarrassment surrounding pornography use and preference. To further encourage honest responding in this section, the survey included this final reassurance: "Despite its popularity, we know pornography can still be a sensitive topic for some people. We assure you your responses are anonymous."

Pornography was evaluated on several dimensions, including frequency of use, genre preference, and perceived realism. See Appendix D for the complete list of pornography-related items used in the survey. One aim of the current study was to obtain a general overview of individuals' experience with pornography. Using text entry boxes, participants were asked to report their age at which they first unintentionally viewed pornography, their age at which they first intentionally viewed pornography, and their age at which they started regularly watching pornography. Pornography viewing frequency was assessed with a single item that asked, "In

general, how often do you watch or look at pornography?" There were eight response options for this item: 1 = *Never,* 2 = *About once a year,* 3 = *A few times a year,* 4 = *Once a month,* 5 = *A few times a month,* 6 = *1-2 days a week,* 7 = *3-5 days a week,* 8 = *Daily or almost daily*. Three items assessed the extent to which pornography use was related to masturbation. The first item in this series asked, "When you look at pornography, how often do you masturbate?" This was followed by two additional questions: "How often do you look at pornography without masturbating?," and "How often do you masturbate without looking at pornography?" Response options on these items ranged from 1 = *Never* to 5 = *Every time or nearly every time.*

Pornography preference was measured through a list of 11 pornography descriptors. Specifically, participants were presented with statements such as, "I prefer pornography that is more romantic or gentle," and "I prefer pornography that features taboo themes like rape" and then asked to indicate their agreement with each statement on a 7-point Likert scale (1 = *Strongly disagree,* 7 = *Strongly agree*). The 11 descriptors included in the statements were: romantic/gentle, rough/aggressive, incest, rape, kinky, vanilla (i.e. not kinky), BDSM, light-hearted/flirty, younger women (e.g., teens), older women (e.g., MILF), and illustrated/animated. Although this list represents an incomplete inventory of the various content present in pornography (notably missing are themes relating to race and gender identity), it allows for the identification of participants' preference for aggressive pornography, which is of particular interest in the current study. While most of the items on this scale were intended to be used individually for descriptive and inferential analyses,

the three items measuring preference for rough and aggressive content, rape, and BDSM themes in pornography were averaged together to create an aggregate variable representing a preference for aggressive pornography. Cronbach's alpha for these three items was .68. Higher scores on this aggregate variable indicate greater preference for aggressive pornography.

Open-ended items were also included to collect more details about pornography preference. Participants were asked to briefly type in their responses to the following questions: "What is your preferred genre or type of pornography?," and "What keywords or search terms do you use when you look for porn online?" Two additional open-ended questions asked participants to report on particularly memorable pornographic content. The first of these questions prompted respondents to write about "something in pornography (a position, act, scene, etc.) that you thought was exceptionally exciting, arousing, or you just liked a lot." The following question asked participants to write about pornographic content "that you thought was disturbing, made you upset, or you just didn't find enjoyable at all."

Perceived realism of pornography was evaluated using four items used by Peter and Valkenburg (2006). Adapted from Busselle's (2001) scale of perceived television realism, Peter and Valkenburg reworded the items to reflect watching sex online (pornography). In their study, they found the four adapted items had good internal reliability and mapped onto a single dimension of measurement (Peter & Valkenburg, 2006). One small modification was made to these items in the present study. Instances in which Peter and Valkenburg (2006) used the term "sex online"

were replaced with “pornography.” This change was made so that the items would describe pornography more broadly and not just pornographic material appearing online. The four items as used in the present study are, “I find pornography to be realistic,” “Sex in pornography is similar to sex in real life,” “You can learn a lot about sex by watching pornography,” and “By watching pornography I learn how to behave when having sex.” Participants reported their agreement with each of these statements on a Likert scale ranging from 1 = *Strongly disagree* to 7 = *Strongly agree.* Higher scores on this subscale indicate greater perception of pornography as realistic. Cronbach’s alpha for these four items was .77.

Finally, participants were asked to indicate the extent to which they believed pornography to be sex positive. Sex positivity is a social movement that emerged in opposition to radical, porn-critical feminists (Glick, 2000). Prioritizing “sexual freedom,” sex-positive advocates tend to conceptualize pornography as an important element of sexual experience and expression. Participants were first provided with a brief definition of sex positivity that described it as, “The belief that all consensual expressions of sexuality are valid” (Kimmes et al., 2015, p. 289). Unrelated to pornography, respondents were first asked to respond to three questions about sex positivity more generally: (1) “Are you familiar with the term ‘sex positive’ or ‘sex positivity?’” (*Yes, No, Not sure*), (2) “I consider myself to be sex positive” (1 = *Strongly disagree* to 7 = *Strongly agree*), (3) “Someone who is sex positive is probably more open to different kinds of sexual experiences” (1 = *Strongly disagree* to 7 = *Strongly agree*). Participants were then asked to rate their agreement on the

same 7-point Likert scale with two statements relating to sex positivity and pornography: "Pornography is generally sex positive," and "Pornography can help people become more sex positive." These two items produced a Cronbach's alpha of .76.

Porn Sex Scripting. Porn sex scripting was evaluated in the current study using three separate measures: (1) A modified scale by Sun et al. (2016), (2) an inventory measuring the frequency of engagement in aggressive sex acts common in pornography, made for the current study, and (3) an open-ended qualitative question that asks participants to describe acts or behaviors they have seen in pornography that they have tried or want to try with a sexual partner. Items in Sun et al.'s (2016) modified scale served as the primary indicators of porn sex scripting in the main structural equation model. Engagement in aggressive sex acts was used to conduct descriptive analyses and correlations, while responses to the open-ended question will be used in future analyses.

Primary Porn Sex Scripting Measure. Sun et al.'s (2016) 3-item scale measures the integration of pornography with sex. Some modifications were made to these items. First, on the original scale, the question, "Have you ever asked a sex partner to try something that you saw in pornography, such as a new sexual activity or position?" is answered with a dichotomous yes/no response. However, to collect more variance, this item was reworded to ask how many times the respondents had ever tried something that they had seen in pornography (i.e., "How many times have you ever asked a sex partner to try something that you saw in pornography, such as a new

sexual activity or position?”). For wording consistency, Sun and colleagues’ (2016) second item on this scale (“I role-played with a sexual partner a scene that I saw in pornography”) was similarly changed (“How many times have you ever role-played a scene you saw in pornography with a sexual partner?”). The final question in this scale asks participants how often they typically view pornography while having sex with a partner. However, since Sun et al. (2016) originally reported a relatively low Cronbach’s alpha value of .41, two additional items (“How many times have you seen something in pornography that you later tried while having sex?” and “How frequently do you get new ideas about positions, specific sex acts, role-playing scenarios, etc., after watching pornography?”) were created and added for the current study to boost reliability. Response options to the three items asking about the number of times a sex-scripting behavior occurred were 1 = *Never,* 2 = *1 or 2 times,* 3 = *3 to 10 times,* and 4 = *More than 10 times.* For the two questions asking about general frequency of sex scripting, responses were made on a scale ranging from 1 = *Never* to 5 = *Every time or nearly every time.* The internal reliability was .79 for the five items. An aggregate sex scripting variable was created by average the items. Higher scores on the aggregate variable represent more engagement in sex scripting. The items on this scale – Sun et al.’s (2016) three questions and the two additional questions – are shown in Appendix E.

Exploratory Porn Sex Scripting Measures. The inventory of aggressive sex acts common in pornography was created for the current study for exploratory purposes. It contains 18 behavioral items describing acts that can occur during sexual

encounters, including seven items that reflect aggressive acts commonly seen in pornography. The content analysis by Bridges et al. (2010), who measured physical and verbal aggression in best-selling pornographic videos, was used as a reference when creating these items. Specifically, the six most frequently observed acts of physical aggression from Bridges and colleague's study (spanking, gagging, slapping, hair pulling, choking, and pinching) were transformed into behavioral items, e.g., "I have choked someone or put my hands around their throat during sex." Since the content analysis also found that insults and degrading name-calling were similarly prevalent acts in popular pornography, the following item was included in the scale to assess frequency of verbal aggression: "I have called someone degrading or dirty names during sex." Eleven other items were included with the seven porn-sex act items. Most of these additional items described more neutral or gentle sexual acts (e.g., making eye contact during sex, stroking someone's hair during sex), but three of these items coded for consent violations. These three items were, "I have removed a condom during sex without the other person knowing," "I have stopped sex when a sexual partner has asked me to stop" (reverse-coded), and "I have ignored requests from a sexual partner to stop or slow down during sex." All sex-act items were measured on a 5-point frequency scale ranging from 1 = *Never* to 5 = *Very frequently*. The Cronbach's alpha for the seven aggressive porn-sex items was .90. Reliability coefficients were not calculated for the remaining items as they were included primarily for descriptive purposes. Appendix F contains the open-ended sex scripting item and the porn sex act items.

In addition to the quantitative sex-scripting items, an open-ended question asked respondents to describe a sexual act or behavior that they had initially observed in pornography then subsequently tried or wanted to imitate. Specifically, participants were provided with the prompt, "Briefly describe something (like a scenario or specific act) you saw in pornography that you would like to try or have actually tried while having sex."

Objectification of Women. ***Acceptance of Objectification of Women.*** The attitudinal objectification of women – the extent to which the objectification of women is perceived as normal or acceptable – was measured using a composite of existing subscales, totaling to 13 individual items. This composite was used because, to date, no research has produced a scale intended solely to evaluate acceptance of the objectification of women. Since the relevant subscales have a limited number of items, grouping the subscales together to create a longer measure of attitudinal objectification of women offered greater variance in participant responses. Altogether, the composite measure used in the present study consisted of Ward's (2002) eight-item Women-As-Sex-Objects subscale (which examines people's belief that women's worth is derived from their physical appearance) and Wright and Tokunaga's (2015) five-item voyeurism subscale. The voyeurism subscale is itself compose of one item from Ward's (2002) Men-as-Sex-Driven subscale, three items from Kistler and Lee's (2010) sexual objectification scale, and a novel item created by Wright and Tokunaga (2015). Together, these individual items composed the scale used in this study to investigate the degree to which individuals accept the

objectification of women. Items include, "Using her body and looks is the best way for a woman to attract a man," "There is nothing wrong with men being primarily interested in a women's body," and "Men are hardwired to look at women's bodies." Participants indicated their agreement with these statements on a 7-point Likert scale ranging from 1 = *Strongly disagree* to 7 = *Strongly agree*. In the current sample, Cronbach's alpha for all 13 items was .83. Appendix G contains the 13 acceptance of the objectification of women items.

Cognitive Objectification of Women. Cognitive objectification of women was assessed using a modified version of McKinley and Hyde's (1996) 8-item surveillance subscale of the Objectified Body Consciousness Scale. Originally, the items on this scale were created to measure objectification of the self (e.g., "During the day I think about how my body looks many times"); for the purposes of the present study, items were reworded so that they measured objectification of women instead. As such, "women" or "women's bodies" were used in place of "my body," "I," or "how I look." Examples from the modified subscale include, "I rarely think about how women look" (reverse-coded) and "I often think about whether the clothes women wear makes them look good." Participants indicated their agreement or disagreement with these statements on the same 7-point Likert scale used for the attitudinal objectification items. Similar rewording modifications of McKinley and Hyde's (1996) surveillance subscale have been used in previous research, resulting in Cronbach's alpha of .67 (Zurbriggen et al., 2011). The current study produced an

identical internal reliability statistic (Cronbach's alpha = .67) for these eight items. See Appendix H for the items used for the cognitive objectification scale.

Objectification of Women on Social Media. Additional items evaluating individuals' attitudes about the objectification of women in specifically in the context of social media were created for this study. Five statements regarding the perceived acceptability or normality of objectifying women via selfies or photos posted online aimed to briefly capture beliefs about objectification in social media. Items on this scale include, "Commenting on women's bodies when they post revealing pictures of themselves on social media is harmless," and "It's only natural for men to masturbate to sexy or revealing women's selfies." Participants rated their agreement with each of these statements on the 7-point Likert scale described above. The internal reliability for these five novel items was .78. Appendix I contains these items.

Sexual Aggression. ***Aggressive Sexual Behavior Inventory.*** Sexual aggression was evaluated on two dimensions: perpetration of sexual coercion and rape proclivity. Zurbriggen's (2000) modified version of Mosher's (1988) Aggressive Sexual Behavior Inventory – Short Form (ASBI) was used in the current study to measure perpetration of sexual aggression. The 10-item short-form version of the ASBI is derived from the 20-item ASBI developed by Mosher and Anderson (1986). The ASBI is a self-report measure of sexually aggressive behaviors ranging from verbally manipulative tactics to the use of physical force in order to obtain sex. Zurbriggen (2000) made a few important changes to the 10-item ASBI. First, item wording was changed from describing female targets (e.g., "I have gotten a little

drunk and forced a woman that I’m with to have sex with me”) to reflecting gender-neutral targets (“I have gotten a little drunk and forced the person that I’m with to have sex with me”). The language used in the items was also updated or simplified to omit slang that might not be easily understood. For instance, terms such as “petting” and “blue balls” were replaced with “making out” and “frustrated,” respectively. The second type of changes made by Zurbriggen (2000) involved broadening the scope of the scale. Specifically, two items from the 20-item ASBI and 10 new items were added. Of the 10 new items written by Zurbriggen (2000), seven of them formed a separate subscale (“Seduce”) describing seduction strategies that are not inherently aggressive or manipulative but could potentially be used in such a way. This subscale was originally intended to capture sexual behaviors that women would be more likely to report. In the current study, the Seduce items were retained in order to serve as distractor items from the aggressive items. In total, the current study used 15 items to measure sexual aggression: ten items from the short-form ASBI, two items from the long-form ASBI, and three items written by Zurbriggen (2000). For the present study, it is more appropriate to use these 15 items than it is to use the 20-item version of the ASBI. Many items of the 20-item version described potentially unclear or unusual situations that may have been confusing for participants (e.g., “I have waited my turn in line with some other guys who were sharing a ‘party girl,’” “I have roughed a woman up a little so that she would understand that I meant business”). In contrast, the 15 items presented in Zurbriggen (2000) were more likely to be easily understood by participants.

For the present study, additional minor wording changes were made to the 15 aggression items and seven Seduce items from Zurbriggen (2000). While Zurbriggen's modifications are preferable to the original ASBI (Mosher, 1988; Mosher & Anderson, 1986), further wording adjustments aimed to simplify the items while preserving their original meaning. For instance, an item on the Seduce subscale was changed from "When I want to get someone in the mood I whisper 'sweet nothings' to them" (Zurbriggen, 2000) to "When I want to get someone in the mood I try to flirt or sweet talk them" (current study). An example of wording modifications for the aggressive items includes changing "I have belittled someone's manhood or womanhood in order to get them to sleep with me" to "I have belittled or insulted someone in order to get them to sleep with me."

Prior to responding to the ASBI items, participants were provided with the following instructions: "Listed below are a series of sexual experiences. Please read the statements carefully and indicate how frequently you have ever been involved with each one." Responses to all items were made on a 7-point frequency scale ranging from 1 = *Never* to 7 = *Extremely frequently.* In the current sample, Cronbach's alpha was .92 for the Coerce subscale and .80 for the Seduce subscale. Appendix J contains all items in the modified version of the ASBI used in the current study.

Rape Proclivity. Rape proclivity describes individuals' likelihood of perpetrating sexual aggression. Bohner and colleagues' (1998, 2006) measure of rape proclivity presents five fictional acquaintance-rape vignettes featuring a male

perpetrator and a female victim. The vignettes describe instances of completed rape that vary in perpetrators' use of force, ranging from verbal coercion to physical restraint. Each vignette contains an average of 112 words. Readers are placed into the role of perpetrator through second person narration (e.g., "You have gone out a few times with a woman you met recently…"). Each vignette is followed by three questions: "How sexually aroused would you be in this situation?," "If you were in this situation, how likely is it that you would have acted in a similar way?," and "How much would you have enjoyed getting your way in this situation?" Participants responded to these questions using a 5-point Likert scale wherein lower scores represented lower arousal, likelihood of acting in a similar way, or enjoyment (e.g., responses for the first question ranged from 1 = *Not aroused at all* to 5 = *Highly aroused*). As described in Bohner et al. (2006), the first question about arousal is a filler question, while responses to the latter two questions are averaged across scenarios and used to represent rape proclivity.

Some small changes were made to the terms used in the vignettes to make it more comprehensible for the sample of young, largely American men. For instance, the word "petting" was replaced with "making out," "fondling" was replaced with "touching" in one vignette and "caress" in another, and "disco" (as in, "you met an attractive woman in a disco") was replaced with "club." None of the wording substitutions changed the meaning of the vignettes in a substantial way, particularly regarding the descriptions of sexual coercion and violence.

Although Bohner and colleague's (1998, 2006) original rape proclivity measure contained five vignettes, only four were included in the current study. The omitted vignette detailed the most extreme description of sexual assault, the end of which stated: "you grab her arms and drag her into the bedroom. You throw the woman onto the bed and force her to have sex with you." This vignette was not included in the survey for two reasons. First, given its more extreme violent content, it had the most potential to upset participants. Since the rape proclivity measure was a part of a battery of many sensitive questionnaires, it was preferable to not include this description of forcible rape in the study. Second, it seemed likely that this vignette would produce the least amount of variance given its more extreme nature. The rape proclivity scores in the current study are therefore based on a total of eight items (two questions from each of the four vignettes included in the survey). See Appendix K for the vignettes and questions in this rape proclivity measure as used in the present study.

Internal reliability was computed for the two items representative of rape proclivity (i.e., likelihood of acting in a similar way and enjoyment of perpetration) across the four vignettes. In the current study, Cronbach's alpha was .84, which is in line with previous research finding Cronbach's alpha values for this measure to be $>$ .80 (Bohner et al., 2006).

Variables for Exploratory or Descriptive Analysis

Relationships and Sexual Experience. The survey solicited general information about participants' platonic and romantic relationships, as well as their

sexual experience. Staring with friendships, participants used a text entry box to type in their estimated number of close male friends and number of close female friends. These questions were accompanied by the instructions, “You can define ‘close’ in any way that makes sense to you. You can also include family members in your estimated number.” Since the goal of these questions was to get a general idea of the gender identities of those in participants’ close social circles, it was acceptable for “close friend” to be loosely defined and include family members. Relatedly, participants were asked to indicate which of the following options best described their non-romantic friendships: “I have more male friends than female friends,” “I have more female friends than male friends,” “I have about the same number of male and female friends,” and “None of these options describe my friendships.” A text entry box accompanied the last response option to allow for participants to describe their friendship characteristics in their own words.

A validated scale was also included to further evaluate participants’ platonic social connections. The UCLA Loneliness Scale (Version 3) (Russell, 1996) is a 20-item self-report scale measuring individuals’ perceived loneliness. The scale consists of 11 negatively worded items capturing feelings of social isolation or disconnection (e.g., “How often do you feel that you lack companionship?”) and nine positively-worded items describing feelings of social connection (e.g., “How often do you feel that you are ‘in tune’ with the people around you?”). Responses to the items were made on a four-point frequency scale ranging from 1 = *Never* to 4 = *Often*. An aggregate variable for this scale was created by reverse-coding the positively worded

items and then averaging all items together such that higher scores indicated more loneliness. Cronbach's alpha was .93 in the current sample.

Questions about romantic relationships asked participants to report their current relationship status (*Single and not dating, Single and dating, In a relationship (not married or engaged), Engaged, Married,* or *Not listed*) and whether they had ever been in a romantic relationship before (*Yes, No, Not sure*). If participants responded to the latter question with *No*, then no further questions about romantic experiences appeared. However, using the survey software's display logic function, additional questions about romantic relationships were shown to individuals who indicated that they had been in a romantic relationship or that they were unsure if they had been in a romantic relationship. Two text-entry questions evaluated how many romantic relationships participants had been in prior to the age of 18 and at age 18 or older. Romantic relationship satisfaction was measured using three items. The first two questions asked, "How satisfied are you with your overall quality of dating and romantic experiences?" and "How satisfied are you with your overall number of dating and romantic experiences?" Responses to these questions were made on a 7-point Likert scale ranging from 1 = *Extremely dissatisfied* to 7 = *Extremely satisfied*. The final question prompted participants to indicate whether they would prefer to have more dating and romantic experiences, fewer dating and romantic experiences, or if they were satisfied with their number of dating and romantic experiences.

Sexual experiences were assessed using a series of eight items, starting with a question asking participants if they had ever had any kind of sexual experience with

another person (*Yes*, *No*, *Not sure*). To create a shared understanding of the scope of "sexual experience," the following description accompanied this section in the survey: "'Sexual experience' is a broad term. It can include things like touching sexual body parts, oral sex, dry humping, fingering, and also penetrative sex." Individuals who responded to the initial question with either *Yes* or *Unsure* were provided with several more questions about their sexual experiences, including whether they consented to their first sexual experience (*Yes*, *No*, *Not sure*), whether they had ever had penetrative sex (*Yes*, *No*, *Not sure*), age of first penetrative sex (if *Yes* or *Not sure* was selected in the previous question), and whether they consented to their first instance of penetrative sex (*Yes*, *No*, *Not sure*). Questions about participants' satisfaction with their sexual experiences were in the same format as the questions about romantic relationship satisfaction. Respondents were asked to indicate how satisfied they were with their overall quality of sexual experiences and overall number of sexual experiences (1 = *Extremely dissatisfied* to 7 = *Extremely satisfied*). The final question in this section asked participants to report whether they would prefer to have more sexual experiences, fewer sexual experiences, or whether they were satisfied with their number of sexual experiences.

Appendix L contains items for all these questions about relationships and sexual experiences, including the UCLA Loneliness Scale (Version 3) (Russell, 1996).

False Rape Accusations. A series of items assessed participants' beliefs about false rape accusations and their experiences of being accused of sexual

misconduct. All items in this section were created for the purposes of the current study. Participants first indicated their agreement with six statements that implied false rape accusations are common, easily made by women, and result in the mistreatment of men. Generally, these items represent the belief that false rape accusations are a threat to men. Example statements include, “It is easy for a woman to falsely accuse a man of sexual assault,” and “There should be more protections for men who have been accused of sexual assault.” The scale also contains two reverse-coded items: “Most men who are accused of sexual assault are guilty” and “Men who have been accused of sexual assault are usually treated fairly.” Participants rated their agreement with each of the six items (1 = *Strongly disagree* to 7 = *Strongly agree*). After reverse-coding, responses on the items were averaged such that higher scores represent the belief that false rape accusations pose a threat to men. Internal reliability for this scale was .85.

Additional questions about false rape accusations ask participants to indicate how much they worry about being falsely accused of rape and how much they worry about someone they know being falsely accused of rape (1 = *Not at all* to 5 = *A great deal*). Participants were then instructed to write in a number between 0 and 100 in response to the following prompts: “In your opinion, what percentage of all rape accusations are probably false?” and “In your opinion, what percentage of women who have accused a man of rape are exaggerating or lying about being raped?”

The section on false rape accusations ended with questions about participants’ own experiences of being accused of sexual misconduct. First, participants were

asked whether they had "ever been accused of any kind of sexual assault or behaving inappropriately in a sexual way? This can be a formal accusation (like a report made to authorities) or an informal accusation (like an accusation you heard through gossip, social media, conversations with others, or confrontations)." Response options for this question were *Yes*, *No*, and *Not sure*. Using display logic in the survey, individuals who selected either *Yes* or *No* were then asked to briefly describe the accusation in their own words using a text entry box. Three multiple-choice questions followed that asked participants whether the accusation was false or inaccurate in some way (*Yes*, *No*, *Not sure*), the degree to which the accusation was accurate or true (1 = *Not at all true or accurate* to 4 = *Very true or accurate*), and whether they faced any consequences or negative effects stemming from the accusation (*Yes*, *No*, *Not sure*). See Appendix M for all questions relating to false rape accusations used in the current study.

Social Media and Dating Apps Use. Since participants were recruited for the study under the title "Men's Relationships and Dating in the Digital Age," a series of seven items regarding technology and dating experiences were included to add to the cover story. These items evaluated the extent to which respondents believed technology plays a positive or negative role in dating. Each item presented a statement such as "Technology has made dating more superficial" or "Technology has made dating easier." Participants responded to each statement on a 7-point Likert scale (1 = *Strongly disagree,* 7 = *Strongly agree*). Items reflecting negative beliefs about the role of technology and dating were reverse-coded. To create an aggregate

variable, items were then averaged together. Higher scores on this variable represents more positive beliefs about the role of technology in dating. Cronbach's alpha for the seven items was .71 in the current sample.

Three questions assessed individuals' use of social media apps, including those intended for dating and casual sexual encounters. Participants will be asked how often they use "dating or hookup apps like Tinder, Bumble, Hinge, happn, or Coffee Meets Bagel" and "social media apps like Instagram, Snapchat, Facebook, Twitter, or Whatsapp to flirt with people, try to get dates, or to hook up." Responses for these two questions are made on a frequency scale spanning from 1 = *Never* to 9 = *Several times a day*. The third item was created to measure overall time spent in hours on social media for any reason. Scores for this question range from 1 = *Never* to 8 = *4 or more hours a day*.

Frequencies of technology use for specific, dating-related or sex-related actions were measured by several questions starting with, "How often have you used texting or any form of social media to . . ." Actions evaluated with these questions were participants' frequency of using technology for flirting, setting up dates, sending a romantic interest a selfie (i.e., a face photo), sending a romantic interest a semi-nude photo (i.e., shirtless with no genitals showing), and sending a romantic interest a photo of their own genitals. The items included the descriptions shown in the parentheses. Three additional questions asked participants to report how often recipients of their genital pictures responded positively, negatively, or not at all. Response options for these questions were *0 times, 1 or 2 times, 3 or more times,* or *I*

have never sent someone a picture of my genitals. The purpose of these questions was to distinguish between wanted or consented sexting (positive responses) or potentially unwanted instances of sexting (negative or no responses). A more direct measure of potentially non-consensual sexting was included. Participants were asked if they had ever sent "an unsolicited dick pic (E.g., a picture of your genitals that you sent without the recipient requesting one first.)" (*Yes*, *No*, *Not sure*). Individuals who responded with *Yes* or *Not sure* were prompted to indicate how often they had sent an unsolicited dick pic (*One time, 2 or 3 times, 4 or more times*). All items relating to social media use, including dating app use and sexting, are shown in Appendix N.

Quality Check Items

Three questions were included at the end of the survey to evaluate participants' perceptions about the quality of their responses. These questions functioned to ensure that participants were, on average, able to respond honestly and pay attention to a survey containing sensitive and potentially upsetting questions. The quality check items also were included so that suspicious responses could be scrutinized more closely. For instance, the quality check items could be examined on a case-by-case basis for participants whose responses had very little variance throughout the entire survey or who spent relatively little time taking the survey. In these instances, the combination of suspicious responding patterns and undesirable responses on the quality check items (e.g., a participant who reports that they were not at all honest in their responses) could be used to determine whether participants' data should be used in analyses. Undesirable responses on the quality check items in

and of themselves were not intended to be used to determine whether participants' data should be included in analyses.

Participants were first asked to indicate how honest they were able to be while completing the survey. Responses to this question were made on a 5-point Likert scale ranging from 1 = *Not honest at all* to 5 = *Completely honest.* Participants then reported how much attention they paid during the survey. Response options for this question ranged from 1 = *Almost no attention* to 5 = *My full attention*. Finally, participants were asked, "in your honest opinion, should we use your data in our analyses?" Participants could respond to this question with *Yes*, *No*, or *Not sure.* See Appendix O for the quality check items.

Procedure

After contacting the research project's email account to express interest in taking the survey, individuals were sent a standardized email containing more information about participating in the study and a link to the survey. The survey was hosted on Qualtrics, a web-based program for creating and distributing Internet surveys. Each survey link sent to participants was unique and could only be used once, therefore preventing individuals from taking the survey multiple times. To maintain anonymity, these individual survey links could not be matched with participant responses.

After responding to the screening questions appearing before survey, eligible participants were then presented with the informed consent form (see Appendix B). Only those who indicated that they consented to participate in the study were allowed

to proceed to the next page and begin responding to questions on the survey. Participants were instructed that they could complete the survey at a time and place of their choosing, but that they should plan on doing so in a private location on their personal Internet-enabled device. They were also informed that they should take the survey in one sitting as an interruption or pause in Internet connectivity might erase any responses already made.

Participants first responded to demographic questions, which included items about participant age, gender identity, sexual orientation, racial or ethnic identity, religious identity, religiosity, political identity, and their student status. Questions about platonic and romantic relationships then appeared, which were followed by the UCLA Loneliness scale. These questions were chosen to appear early in the survey because they were among the least provocative questions in the survey. Then, questions about social media use, sending sexual pictures (including "unsolicited dick pics"), pornography, porn sex scripting, and objectification of women appeared in the order listed here. The last half of the survey contained items about general sexual experiences, the ASBI and sex acts scale, and questions about false rape accusations. ASBI and sex acts items were intermixed in a single section and appeared on the same survey page. The final measure in the survey was the rape proclivity scale. The quality check questions were included after the rape proclivity scale. All survey items appeared in the same order for all participants. The debriefing form (see Appendix P) was presented on the final page of the survey. The debriefing form contained additional information about the study, including its aim of exploring associations

between pornography, objectification, and sexual aggression. In the event participants experienced discomfort or distress after taking part in the study, contact information for mental health resources were listed toward the end of the debriefing form. Contact information for the graduate student investigator, the faculty advisor, and the UCSC Institutional Review Board was also included for participants who had concerns of questions. After participants read through the debriefing form and clicked “submit,” the survey automatically redirected to a separate Qualtrics survey where participants could enter their email address in order to be sent the $10 amazon,com gift card. See Appendix Q for the questions on this separate Qualtrics survey.

The median amount of time participants took to complete the survey was 30.73 minutes. Since some participants’ survey completion times indicated that they had finished the survey a few days after they had begun responding to questions, the average number of minutes for survey completion is a misleading statistic. However, the 5% trimmed mean for the sample omitted some of the extreme outliers and resulted in an average of 42.17 minutes. The shortest duration in the study was a little over seven minutes. The responses for this participant were scrutinized closely; although this individual completed the survey quickly, his data is complete and there is no indication of straight-lining in his responses. This participant also responded affirmatively to the final quality check question, meaning that he believed his data should be used in analyses.

Data Analysis Plan

First, data were checked for missing and suspicious data. Missing data analyses were computed for the main study variables (i.e., the variables appearing in the structural equation model). Participant quality check items were then used to compute average honesty and attention scores and to individually investigate suspicious responses. After screening the data, descriptive statistics (averages, standard deviations, and endorsement rates of individual items for some scales) were computed for all variables in the study. Bivariate correlations were then computed between the main study variables and between a select set of remaining study variables. Since a correlation table containing all continuous study variables would be unwieldy, correlations were separated into several individual tables. The descriptive and correlational analyses provided information related to the study's secondary aims (e.g., exploring men's beliefs about false rape accusations and experiences of being targets of sexual misconduct accusations). The structural equation model was then completed to test the current study's main hypotheses. Three alternative models were then evaluated. All descriptive statistics and correlations were completed in IBM SPSS Statistics for Windows, Version 27. The structural equation models were estimated using the lavaan software package for the open-source statistical analysis program *R*.

Results

Missing Data

Among the 261 participants who completed the survey and met the eligibility criteria, missing data were overall minimal. Missing data analyses were computed for

all items used to create the aggregate variables appearing in the structural equation model (acceptance of the objectification of women, cognitive objectification of women, sexual coercion, and rape proclivity). The same analyses were done for the items used individually in the SEM (frequency of pornography use and porn sex scripting items). The item with the most missing data was a porn sex scripting item ("How many times have you seen something in pornography that you later tried while having sex?"), which had a total of 6 missing responses. Items from other variables generally had only 2-4 missing responses. Since the SEM will use data only from participants reporting sexual experience, missing data was examined in this subsample. Missing data were limited to two missing responses (one porn sex scripting item) or one response (one porn sex scripting item, two items of the ASBI coerce subscale, four items of the rape proclivity scale, and one item on the acceptance of objectification scale). Items from the other scales were associated with no missing data (cognitive objectification of women and pornography use frequency).

Missing data were similarly minimal among all participants for the quantitative variables not included in the SEM. The majority of items had no missing data, and only 10 individual items from various scale were missing one response. Three items (one from the sex acts scale and two from the estimated false rape rate items) each contained two missing responses. Missing data tended to be higher for the open-ended questions. The lowest response rate among these questions was for the item asking participants to write about sexual acts or behaviors they had seen in pornography that they had either tried or would like to try with a partner, which

resulted in 20 missing responses. This corresponds to a response rate of 89.4% for that particular item. Response rates were slightly higher for the remaining open-ended items about disturbing pornographic content (90.4%), exciting pornographic content (90.4%), keywords used in pornography searches (92.6%), and preferred pornography genre (95.7%).

Quality Check Items

Despite the challenging nature of the survey, participants on average reported they felt they were able to answer honestly ($M = 4.62$, $SD = .58$; response scale where 5 = *Completely honest*) and that they paid a high degree of attention while taking the survey ($M = 4.38$, $SD = .78$; response scale where 5 = *My full attention*). Only five participants believed that their data should not be used in analyses due to their quality. Despite the small number of participants in this group, independent-samples *t*-tests were used to compare these five individuals' average scores on the main study variables to the other participants' scores. No mean differences were detected, which suggests that the data from people who perceived their responses to be lacking in quality were statistically no different from the data who believed their data to be of higher quality. Moreover, the overall responses from the five participants were inspected and none appeared to be associated with suspicious patterns. Since the intention of the quality check items was to be used to check overall trends in the data and to investigate individually suspicious cases (such as the participant who took fewer than 10 minutes to complete the survey), no data were omitted exclusively based on participants' responses to these items.

Descriptive Statistics

Relationships and Sexual Experience

Platonic Relationships and Loneliness. On average, participants reported having approximately six close male friends (*M* = 5.96*, SD*= 4.17) and three close female friends (*M* = 3.51, *SD* = 4.77). A minority (15.7%, *n* = 41) of men in the sample reported having generally more female friends than male friends, whereas the remaining respondents typically reported having more male friends (63.2%, *n* = 165) or about the same number of male and female friends (19.9%, *n* = 52). Results from the UCLA Loneliness Scale indicated that most participants reported somewhat low frequency of feeling socially lonely and isolated (*M* = 2.36, *SD* = .55). On this 4-point scale ranging from *Never* to *Often*, a mean of 2.36 most closely corresponds with the *Rarely* response frequency.

Romantic Relationships. Approximately 71% (*n* = 185) of the sample had ever been in a romantic relationship and 37.1% (*n* = 97) were in a relationship at the time of the survey. Half of the participants (49.8%, *n* = 130) reported they were currently single and not dating and 13% (*n* = 34) were single and dating. Men who had ever been in a romantic relationship reported an average of 1.35 (*SD* = 1.25) relationships prior to the age of 18 and 2.14 (*SD* = 2.68) relationships as an adult. Men with relationship experience indicated (on a scale ranging from 1 = *Extremely dissatisfied* to 7 = *Extremely* satisfied) they were generally satisfied with their overall quality of dating and romantic experiences (*M* = 5.13, *SD* = 1.61). The average satisfaction score for overall number of dating and romantic experiences, reported by

all men in the sample, was slightly lower (*M* = 4.05, *SD* = 1.79). Consequently, most respondents indicated they would prefer to have more dating and romantic experiences (65.5%, *n* = 171). Fewer of the men surveyed reported being satisfied with their number of dating and romantic experiences (30.3%, *n* = 79) or preferring to have fewer dating and romantic experiences (4.2%, *n* = 11,).

Sexual Experience. Nearly three-quarters of the sample (72%, *n* = 188) had any kind of sexual experience with another person. The remaining participants responded they had never had any kind of sexual experience (25.7%, *n* = 67) or were not sure (1.5%, *n* = 4). Men with sexual experience reported an average age of first sexual experience of 17.04 (*SD* = 3.02). The majority of these men (93.2%, *n* = 179) reported they had consented to their first sexual experience, while six participants (3.1%) did not consent and another seven (3.6%) were not sure if they had consented.

Most men surveyed (66.3%, *n* = 173) had experience with penetrative sex and, on average, had their first penetrative sex at 18.05 years (*SD* = 2.62). Most respondents (94.8%, *n* = 165) consented to their first penetrative sex but six (3.4%) did not consent and an additional three (1.7%) were not sure if they had consented. Of the men reporting penetrative sexual experience, the average satisfaction for quality of sexual experiences score (on a scale ranging from 1 = *Extremely dissatisfied* to 7 = *Extremely satisfied*) was 5.52 (*SD* = 1.59). As with dating and romantic experiences, participants expressed less satisfaction with their number of sexual experiences (*M* = 4.01, *SD*= 2.01). Although nearly a quarter of men surveyed reported they were satisfied with their number of sexual experiences (22.2%, *n* = 58), the majority

expressed they would prefer to have more sexual experiences (73.6%, $n = 192$). Only nine respondents (3.4%) reported a preference for fewer sexual experiences.

Pornography

Age of First Unintentional, Intentional, and Regular Pornography Exposure. Men in the current sample reported first unintentionally viewing pornography at an average age of 11.07 ($SD = 2.43$) years, with responses ranging from 3 years old to 17 years old. Average age of first intentional pornography viewing was slightly older at 12.69 ($SD = 2.48$) years and ranged from 4 years to 19 years. In addition to unintentional and intentional pornography viewing, participants also reported they first started viewing pornography regularly at an average of 14.10 ($SD = 2.44$) years. The age range for regular pornography viewing ranged from 6 years to 24 years. By the age of 10, approximately 38% ($n = 98$) of participants had been unintentionally exposed to pornography and 15% ($n = 38$) had intentionally viewed pornography. About half (47.2%, $n = 120$) of participants reported regularly using pornography by the age of 13.

Current Pornography Use Frequency. In response to the question, "In general, how often do you watch or look at pornography?" only five (1.9%) of the 261 men in the sample indicated that they never watch or look at pornography. A few participants reported very infrequent pornography consumption. The response options "About once a year" (0.4%, $n = 1$), "A few times a year" (1.9%, $n = 5$), and once a month (3.4%, $n = 9$) were endorsed by a total of 5.7% of the sample. The most highly endorsed frequency for pornography viewing was daily or almost daily use, which

was reported by 33.3% (*n* = 87) of participants. Once- or twice-weekly pornography use was the second-most endorsed frequency (24.1%, *n* = 63), followed by 3-5 days a week (21.5%, *n* = 56) and a few times a month (12.6%, *n* = 33). Pornography use frequency was also evaluated in the context of masturbation: how often participants masturbate when they look at pornography, how often they look at pornography without masturbating, and how often they masturbate without looking at pornography. Over half of the sample (63.2%, *n* = 165) reported masturbating every time or nearly every time while viewing pornography and 21.2% (*n* = 55) reported masturbating often whenever they viewed pornography. Less than 15% of participants indicated that they masturbated only sometimes (11.5%, *n* = 30), rarely (1.5%, *n* = 4), or never (1.5%, *n* = 4) while viewing pornography. Similarly, the majority of the sample never (35.6%, *n* = 93), or rarely (39.5%, *n* = 103) view pornography without masturbating, with fewer people reporting that they sometimes (19.9%, *n* = 52) or often (3.8%, *n* = 10) do. Masturbation without the use of pornography was relatively uncommon among participants, with over half (57%) disclosing that they never (23.4%, *n* = 61) or rarely (33%, *n* = 86) masturbate without pornography. Less than a third of men in the sample indicated that they sometimes (28.7%, *n* = 75) masturbated without pornography and even fewer did so often (13%, *n* = 34) or every time (0.8%, *n* = 2).

Pornography Genre Preference. Through expressing agreement (*Strongly agree* to *Slightly agree*) with “I prefer…” statements describing different genres of pornography, it was found that most participants preferred pornography described as

romantic (56.7%, n = 148), vanilla (55.9%, n = 146), kinky (51.3%, n = 134), flirty (74.3%, n = 194), or pornography featuring younger women like teens (52.1%, n = 136). Nearly half of participants (44.4%, n = 116) reported a preference for rough pornography. A similar proportion (45.2%, n = 118) of respondents preferred pornography featuring older women (e.g. "MILF"). Although less commonly favored, a sizeable number of men in the sample indicated they preferred animated pornography (39.8%, n = 104), pornography featuring BDSM (24.1%, n = 63), rape (15.7%, n = 41), and incest (23.4%, n = 61). Because aggression is central to the current study, preference for aggressive pornography generally (i.e., the aggregation of rough, rape, and BDSM genres) was evaluated. Overall, more than half (52.1%, n = 136) of men in the study expressed preference for aggressive pornography. Pornography preference was also measured through open-ended questions that asked participants to report their preferred pornography genre, keywords used when searching for pornography online, and both exciting and disturbing content. These responses will be coded and analyzed in future projects.

Perceptions of Pornography. Participants reported the extent to which they perceived pornography to be realistic, sex positive, and as having a positive effect on their sexuality. The clear majority of men in the study disagreed with the notion that pornography is realistic (90.7%, n = 234) and that sex in pornography is similar to sex in real life (86.8%, n = 223). There was less disagreement, however, with the statements "By watching pornography, I learn how to act and what to do when having sex" (60.5%, n = 156) and "You can learn a lot about sex by watching pornography

(47.3%, $n = 122$). For the latter statement, approximately 2 out of 5 participants indicated agreement (41%, $n = 100$).

The sample of men were divided in opinion over the positive impact of pornography on sexuality. Over 30% of the sample (31.8%, $n = 82$) agreed that pornography had a positive effect on their sexuality, while more than a third of the sample disagreed (37.6%, $n = 97$) that pornography had a positive effect on their sexuality and an additional 30.6% ($n = 79$) endorsed the neutral anchor for this item. Approximately 40% ($n = 102$) of the sample agreed that pornography is generally sex positive and 50.9% ($n = 133$) agreed that pornography can help people become more sex positive. In contrast, 30.6% ($n = 80$) of men surveyed disagreed that pornography is sex positive and 28.7% ($n = 74$) neither agreed nor disagreed with this idea. Additionally, 19.5% ($n = 51$) disagreed that pornography can help people become more sex positive and 28.4% ($n = 74$) were neutral about this issue.

Porn Sex Scripting

Porn sex scripting items ($M = 1.84$, $SD = .60$) were analyzed for participants reporting any sexual experience ($n = 188$). In total, 89.4% ($n = 168$) of this subsample had ever engaged in porn sex scripting behavior. Over 80% of sex-experienced participants reported they had gotten new ideas about positions, specific sex acts, or role-playing scenarios from watching pornography (82.4%, $n = 155$). Most men in this subsample had seen a sexual activity in pornography that they later tried while having sex (71.3%, $n = 134$); a similar proportion had asked a partner to try something they had seen in pornography (64.9%, $n = 122$). Nearly 30% of

participants with sexual experience indicated they had role-played a scene from pornography (27.1%, *n* = 51) and 20.2% (*n* = 38) reported having watched pornography while having sex with a partner.

The items measuring the prevalence of aggressive sex acts commonly seen shown pornography in people's own sexual behaviors were also analyzed for the subsample of participants reporting any sexual experience. The three most-frequently endorsed aggressive pornography sex acts were spanking (81.9% of participants with sexual experience reported engaging in this behavior at some frequency other than *Never*), hair pulling (78.7%), and choking or putting their hands around someone's throat during sex (70.7%). The endorsement rates for the seven items describing the aggressive sex acts are shown in Table 1. Also included in this table are two items describing potentially non-consensual activity (i.e., not stopping sexual activity when a partner asks to stop and removing a condom without the other person knowing) that is not necessarily common in pornography. Endorsement rates for the items describing non-aggressive or gentle sexual behaviors, which were included in the study as distractor items, are not included here.

Objectification of Women

Objectification of Women in Social Media. Responses to the five items created for this study were evaluated for all participants (*M* = 3.84, *SD* = 1.20). The majority men in the survey agreed that women post on social media hoping to get compliments on how they look (65.1%, *n* = 170) and that women post sexy or revealing pictures of their bodies to get attention from men online (57.1%, *n* = 149).

Slightly less than half of participants agreed that it is natural for men to masturbate to sexy or revealing pictures that women post to social media (43.3%, *n* = 113). The two remaining items ("Women shouldn't complain when men compliment their appearance on social media," and "Commenting on women's bodies when they post revealing pictures of themselves on social media is harmless") had lower agreement rates of 24.1% (*n* = 63) and 11.9% (*n* = 31), respectively.

Acceptance of the Objectification of Women. Men in the sample reported an average of 3.51 (*SD* = .93) across the 13 items in this scale. The item with the most agreement was, "It is ok to check out an attractive woman at a bar or dance club," with 70.1% (*n* = 183) of participants expressing agreement with the statement. In contrast, only 4.6% (*n* = 12) of men surveyed agreed with the statement, "There's nothing wrong with men whistling at shapely women." This item had the lowest levels of agreement in the scale. See Table 2 for agreement rates for all items in this scale. In order to best summarize responses on this scale, this table collapses the three levels of agreement (*Strongly Agree, Agree,* and *Slightly Agree*) into one level of agreement. The same was done for the three levels of disagreement. The neutral anchor, *Neither Agree nor Disagree*, was used to represent the neutral endorsement category.

Cognitive Objectification of Women. Responses on the 8-item modified body surveillance subscale, which was used to measure men's cognitive objectification of women, resulted in an average of 3.60 (*SD* = .85). Both objectifying and non-objectifying cognitions (i.e., reverse-coded items) were reported with

relatively high rates for some items. For instance, 77.4% (n = 202) of participants agreed that they think more about the things women say than how they look, but 73.2% (n = 191) disagreed with the notion that they rarely thought about how women look. Table 3 contains the agreement rates for the items in this scale. As with Table 2, Table 3 combines the levels of agreement and disagreement into Agree and Disagree categories, respectively.

Sexual Aggression

In total, 43.1% (n = 81) of participants with sexual experience reported engaging in at least one of the behaviors described in the ASBI's coercion scale at a frequency other than *Never*. Nearly 15% (n = 28) of participants with sexual experience indicated that they had told someone they were making out with that they could not stop and leave them (the respondent) frustrated. This represents the ASBI Coerce item with the highest rate of endorsement. Gripping someone tightly and giving them an angry look after not receiving the desired sexual response and belittling or insulting someone to obtain sexual encounters were the least frequent coercion behaviors in this subsample, with only 2% (n = 4) of participants with sexual experience reporting them. Table 4 contains the endorsement rates for each item in the ASBI Coerce subscale. Results are presented dichotomously, with responses separated by Never or One Time or More. Overall, the average score on the coercion subscale for these participants was 1.14 (SD = .30) and ranged from 1.00 to 3.14. The items comprising the Seduce subscale of the ASBI produced a higher average (M =

2.12, *SD* = .59, range = 1.00 – 4.25). Since this subscale was included mainly to distract from the coercive items, no further descriptive statistics were conducted.

Rape proclivity was evaluated for all participants in the sample since the scale's items are not contingent on sexual experience. A substantial minority – approximately 45% (*n* = 115) – reported at least some likelihood of engaging in the rape behaviors described in the rape proclivity scale's vignettes. The remaining participants (55.2% or *n* = 144) endorsed the *Not At All* response options for all items used to compute rape proclivity. The average rape proclivity score among all participants was 1.28 (*SD* = .50) and ranged from 1.00 to 3.75. The mean rape proclivity score was very similar for the subsample of participants with sexual experience (*M* = 1.25, *SD* = .48) and resulted in the same range (1.00 to 3.75).

False Rape Accusations

When asked to estimate the percentage of all rape accusations that are probably false, men in the sample provided a mean estimation of 20.81% (*SD* = 20.01), with responses ranging from 0% to 95%. Participants produced a similar estimation in response to the second write-in question about the prevalence of false rape accusations: on average, men in the sample believed that 21.54% (*SD* = 22.26) of women accusing a man of rape lie or exaggerate about being raped. Responses for this item ranged from 0% to 100%. Approximately half of men surveyed (50.6%, *n* = 131) expressed some worry about being falsely accused of rape. Specifically, in response to the question "How much do you worry about being falsely accused of rape?," 24.5% (*n* = 64) reported they were a little worried, 11.1% (*n* = 29) were

worried a moderate amount, 5.4% (*n* = 14) worried a lot, and 9.2% (*n* = 24) reported they were worried a great deal. Results were similar for the question asking how worried respondents are about someone they know being falsely accused of rape. Half of participants (50.2%, *n* = 130) indicated some level of worry. Nearly a quarter (23%, *n* = 60) reported being a little worried, with smaller proportions indicating they were worried a moderate amount (14.6%, *n* = 38), a lot (5.7%, *n* = 15), or a great deal (6.5%, *n* = 17).

The six items comprising the false rape belief scale resulted in an average of 4.82 (*SD* = 1.17, range = 1.0 - 7.0), suggesting that men in the sample generally believe that women's false rape accusations are a concerning issue. For instance, 78.2% (*n* = 204) of men surveyed agreed that false rape allegations have ruined a lot of men's lives, with 30.7% (*n* = 80) of the total sample strongly agreeing with this statement. Table 5 contains the agreement rates for the six items in this scale, organized into agree, disagree, and neutral categories.

Fourteen participants (5.4% of the total sample) reported that they had been accused of any kind of sexual assault or sexual misconduct and another three were unsure if they had been accused. Of these 17 participants, nine indicated they believed the accusation was false or inaccurate, five reported the accusation was true and accurate, and three were unsure of the accuracy of the accusation. When asked to rate the accuracy of the accusation, six participants reported the accusation was not at all true or accurate and three reported the accusation as being not entirely true or accurate. Five participants indicated the accusation was somewhat true or accurate

and another three classified the accusation as very true or accurate. When asked about consequences, seven participants reported they experienced negative consequences or effects following the accusation while eight participants reported they did not. An additional two participants were not sure if they experienced negative consequences.

Social Media and Dating App Use

The majority of participants (68.3%, *n* = 178) reported spending at least one hour a day on social media. The most highly endorsed social media use frequency in the sample was 2 to 3 hours a day, with 33% (*n* = 86) selecting this response option. Twenty percent of the sample (*n* = 54) indicated they spend 4 or more hours per day on social media and another 14.6% (*n* = 38) reported spending 1 hour a day on social media. Fewer participants spend 5 to 6 hours a week (8.8%, *n* = 23), 2 to 4 hours a week (10.3%, *n* = 27), 1 hour a week (5.4%, *n* = 14), or 1 to 2 hours a month or fewer (2.7%, *n* = 7). Only 12 participants claimed they never used social media.

More than half (66.5%, *n* = 125) of the men surveyed had ever used a dating or hookup app, but only 28% (*n* = 53) indicated they were current users. Although mainly used as distractor questions, results from the 7-item attitudes about technology and dating suggest that, on average, men felt negatively about the role of technology in dating (*M* = 3.57, *SD* = .86). For instance, 65.1% (*n* = 170) agreed that technology has made dating more complicated and 56.7% (*n* = 148) agreed that technology has made dating riskier. Despite the negative feelings about technology's role in dating, most participants reported using texting or social media to engage in dating or sexual behaviors. Nearly 90% (88.5%, *n* = 231) of the sample had ever used texting or social

media to flirt with someone they were interested in, 81.3% (n = 212) had ever used this technology to set up a date, and 73.2% (n = 191) had used it to send someone they were interested in a selfie (i.e. a picture of their face). More explicit photo-sharing via texting or social media was less common but still fairly prevalent in the current sample. Half of men surveyed (50.6%, n = 132) had ever sent someone they were interested in a semi-nude photo of themselves (e.g., shirtless but no genitals showing) and 42.5% (n = 111) had ever sent someone they were interested in a photo of their genitals. Of the men who sent someone a photo of their genitals, 14% (n = 16) reported receiving a negative response to their genital photo on at least one occasion and 7.2% (n = 8) reported not receiving a response to their genital photo at all on at least one occasion. Although over 40% of the men surveyed had sent someone a photo of their genitals, very few admitted to sending them without solicitation. When asked if they had ever sent an unsolicited "dick pic," only nine participants (3.4% of total sample and 8.1% of men who have sent photos of their genitals) responded affirmatively. An additional two participants indicated they were not sure if they had ever sent an unsolicited "dick pic."

Correlations of Study Variables

Main Study Variables

Bivariate correlations were computed for the variables included in the SEM. Specifically, these variables are pornography use frequency, porn sex scripting, acceptance of the objectification of women and the cognitive objectification of women, ASBI Coerce subscale, and rape proclivity. Since most of these variables are

relevant for all participants regardless of sexual experience, correlations were first completed using data from all participants. Significant and positive associations were found between pornography use frequency and porn sex scripting ($r = .188$, $p = .002$), and between acceptance of objectification of women and cognitive objectification ($r = .400$, $p < .001$), sexual coercion ($r = .280$, $p < .001$), and rape proclivity ($r = .388$, $p < .001$). Cognitive objectification was similarly associated with sexual coercion ($r = .215$, $p < .001$) and rape proclivity ($r = .249$, $p < .001$). In addition to being correlated with pornography use frequency, porn sex scripting was also positively associated with sexual coercion ($r = .190$, $p = .002$). Sexual coercion and rape proclivity were correlated as well ($r = .621$, $p < .001$). No other associations were significant for this set of correlations. Table 6 contains the full results from these analyses.

These correlations were then conducted among the subsample of participants with sexual experience. This was done because the sexual coercion and porn sex scripting measures measure sexual behaviors, which are more relevant to individuals with sexual experience. Results with this subsample are similar to the correlations computed using the whole sample, but with a few important differences. First, the correlations that were significant among all participants were typically larger when using data from participants with sexual experience. The correlation between porn sex scripting and sexual coercion, for instance, was .190 ($p = .002$) for all participants but .251 ($p = .001$) among participants with sexual experience. The second difference between these two sets of analyses is that some correlations that were insignificant when using data from all participants were significant when using the subsample of

sexually experienced participants. Specifically, correlations between pornography use frequency and sexual coercion ($r = .176$, $p = .015$) and porn sex scripting and rape proclivity ($r = .152$, $p = .037$) were significant in the subsample of sexually experienced participants but did not reach significance in the overall sample. Moreover, the correlation between cognitive objectification and pornography use frequency approached significance in the subsample of sexually experienced participants ($r = .135$, $p = .064$). Table 6 contains the correlation table conducted for the main study variables among this subsample.

Pornography Variables

Bivariate correlations were computed for most of the quantitative pornography variables. Correlations among pornography genre preference items were conducted for all participants in the sample (see Table 7). Preference for pornography genres characterized by aggression or violence (i.e., rough, rape, and BDSM pornography) were positively correlated with each other and negatively correlated with preference for genres described as gentle or light-hearted. Preference for kinky pornography was positively correlated with preferences for rough ($r = .431$, $p < .001$), rape ($r = .374$, $p < .001$), and BDSM ($r = .594$, $p < .001$). Conversely, preference for vanilla (i.e., not kinky) pornography was negatively correlated with preference for the genres featuring aggression.

Additional correlations were conducted for most of the remaining quantitative pornography variables. For these analyses, preference for rough, rape, and BDSM pornography were averaged together to create a single variable representing

preference for aggressive pornography. Two items measuring agreement that pornography is sex positive were similarly averaged to generate a single variable. While one item about masturbation and pornography use was included in the analyses ("When you look at pornography, how often do you masturbate?"), the remaining two items on the same topic were omitted since they were conceptually similar (e.g., "How often do you look at pornography without masturbating?"). The analyses ultimately included correlations between pornography use frequency, porn sex scripting, perceived pornography realism, variables measuring participants' first age of first unintentional, intentional, and regular pornography viewing, masturbation frequency while viewing pornography, preference for aggressive pornography, and perceptions of pornography as sex positive. Table 8 contains the results of these analyses based on data for all participants. Since porn sex scripting is primarily based on sexual experiences, correlations with this variable were run again using the subsample of men with sexual experience. Results for this subsample were similar to the results based on the entire sample: porn sex scripting was positively correlated with pornography viewing frequency ($r = .240$, $p < .01$), perceived pornography realism ($r = .252$, $p < .001$), preference for aggressive pornography ($r = .373$, $p < .001$), and perceptions of pornography as sex positive ($r = .162$, $p < .05$), and negative correlated with age of regular pornography viewing ($r = -.187$, $p < .05$). Unlike the results based on the entire sample, the correlation between porn sex scripting and age of first intentional pornography exposure was non-significant in the subsample of men with sexual experience ($r = -.106$, $p = .146$). Porn sex scripting was not

significantly correlated with the remaining variables (i.e., age of first unintentional pornography exposure and masturbation frequency while viewing pornography).

Objectification and Social Media Variables

The three measures of objectification – acceptance of objectification of women, cognitive objectification, and objectification of women on social media – were correlated with variables relating to social media use. Since previous correlation analyses have already measured the associations between objectification and other main study variables, the aim of these analyses is to evaluate objectification in the context of non-pornographic media among all participants. The social media use variables included in these analyses were general social media use frequency, dating app use frequency, use of texting or social media to send semi-nude photos, and use of texting or social media to send genital photos. Results from the bivariate correlations indicated that the three measures of objectification were positively associated with each other, but only cognitive objectification of women was correlated with any of the social media variables. Specifically, cognitive objectification was positively correlated with dating app use frequency, $r = .173$, $p = .005$. Correlations among the social media variables revealed that both general social media and dating app use frequency were positively associated with semi-nude photo sharing ($r = .240$, $p < .001$; $r = .188$, $p = .002$, respectively) and genital photo sharing ($r = .162$, $p = .009$; $r = .154$, $p = .013$, respectively). Table 9 contains the full set of correlational analyses for these variables.

Sexual Aggression Variables

Rape proclivity and the ASBI coercion subscale were correlated with a select number of variables in the study: frequency of aggressive sexual acts commonly seen in pornography (the exploratory measure of porn sex scripting made for the current study), frequency of genital photo sharing, frequency of dating app use, preference for aggressive pornography, perceived realism of pornography, and porn sex scripting. These correlations were computed for both the whole sample and for the subsample of participants with sexual experience (see Table 10). Generally, both rape proclivity and the coercion subscale were positively correlated with preference for aggressive pornography and greater perceptions of pornography as realistic. In the subsample of men with sexual experience, frequency of dating app use was associated with both the coercion subscale ($r = .182$, $p = .012$) and rape proclivity ($r = .155$, $p = .034$).

False Rape Accusation Variables

Men's beliefs about false rape accusations were correlated with other main study variables via the aggregate False Rape Beliefs Scale (FRBS) and men's estimation of false rape accusation prevalence (specifically, men entered a percentage which they believed to represent the proportion of all rape accusations that were false). A third variable asking participants to estimate the percentage of women lying about sexual assault was omitted from these analyses due to its similarity to men's estimation of false rape accusation prevalence. The two variables measuring men's beliefs about false rape accusations were correlated with pornography use frequency, acceptance of the objectification of women, cognitive objectification of women,

ASBI coercion subscale, and rape proclivity. Table 11 contains the bivariate results of these correlations for the whole sample of participants. Generally, scores on the FRBS were found to be positively correlated with acceptance of objectification (r = .386, p < .001), cognitive objectification (r = .186, p < .01), and rape proclivity (r = .130, p < .05). This means that men who believed false rape accusations to be a common, serious issue scored more highly on these variables. The same pattern of results was found for men's estimation of the prevalence of false rape accusations.

Since the ASBI coercion subscale is the only variable that depends on sexual experience in this set of measures, the correlations were run again using the subsample of participants with sexual experience. Results from these analyses revealed no significant relationship between sexual coercion and the FRBS (r = .034, p = .582) or the false rape percentage estimates (r = .112, p = .074).

Structural Equation Model

The proposed structural equation model (SEM) to be tested is composed of three endogenous (dependent) latent variables and a single exogenous (independent) manifest variable. The exogenous variable is represented by the single pornography use frequency item. Two of the endogenous latent variables, objectification of women and porn sex scripting, are positioned as mediator variables between pornography use frequency and the final latent variable, sexual aggression. In this model, the three latent variables each have two indicator variables: objectification of women is indicated by the acceptance of the objectification of women and the cognitive objectification of women, porn sex scripting is indicated by two parcels (described

below) created from the five porn sex scripting items from the modified Sun et al. measure, and sexual aggression is indication by rape proclivity and scores on the ASBI coercion subscale. See Figure 1 for this proposed structural model.

The sex scripting items from the modified Sun et al. (2016) measure were organized into two parcels due to the statistical advantages this parceling approach offers over an all-item parcel approach (i.e, all scale items are grouped into a single parcel to be used as an indicator) and an item-based approach (scale items are used individually as indicators). Using multiple parcels as a latent factor's indicators in SEM typically provides advantages to a scale's psychometric properties (e.g., by boosting scale communality and normalizing scale distribution) and to the overall fit of the SEM (e.g., tends to improve models' goodness-of-fit indices) (Matsunaga, 2008). Factorial parceling was used to create two parcels from the five porn sex scripting items (Matsunaga, 2008). Using this technique, factor loadings are used to determine the composition of each parcel. Specifically, items are ranked from highest to lowest factor loading and then placed sequentially into each parcel, starting with the first parcel. After all parcels are assigned their first item, the last parcel to receive an item is the first to be assigned a second item. This process repeats until all items have been assigned to a parcel. So, for instance, if there are five scale items and two parcels, the first parcel receives the item with the highest factor loading and the second parcel receives the item with the second and third highest factor loading; the first parcel then receives the fourth- and fifth-ranked items, leaving the first parcel with three items and the second parcel with two. A factor analysis was therefore

computed using the five porn sex scripting items to determine factor loading order. Using principal component analysis as the extraction method, a single component explaining 52% of the variance was extracted based on eigenvalues greater than 1. In order from highest to lowest, porn sex scripting item 2 was followed by items 4, 1, 5, and 3. After employing the factorial parceling technique, parcel 1 was assigned items 2, 5, and 3, while parcel 2 was assigned items 4 and 1.

Before testing the SEM, imputation was used to substitute two missing values on the porn sex scripting item #4. These two missing datapoints were the only missing values at the indicator level. The data were imputed for two reasons. First, the subsample of men with sexual experience is relatively modest (n = 188). Without imputing the two missing datapoints, the usable sample would be reduced to n = 186 since participants with data missing for any element in SEM are excluded from analyses. Imputation was therefore used to make maximal use of the entire subsample of men with sexual experience. The second reason why imputation was used is that SEM results using the imputed dataset (n = 188) were approximately the same as the results omitting the participants with missing data (n = 186). Using the more complete dataset with imputation was the more desirable of the two choices. Regression imputation, computed by the SEM software Amos, was used to generate substitute values for the two missing datapoints. In Amos, regression imputation uses full information maximum likelihood estimation, which is the preferred method of imputation for both large and small sample sizes and for samples for any proportion of missing data (Olinsky et al., 2003).

The lavaan package (Latent Variable Analysis; Rosseel, 2012) for the statistical analysis program R was used to test the structural equation model. This package enables R users to estimate latent variable models, including structural equation models. Maximum likelihood, the default estimation approach used in lavaan, was used for all analyses involving model evaluation. The R syntax used to define the model and produce model fit indices and estimations is included in Appendix R.

The structural model shown in Figure 1 was tested first and evaluated using the fit indices recommended by Kline (2005) and Bowen and Guo (2011). In SEM, models are evaluated with a set of fit indices as opposed to a statistic from a single test (Hooper et al., 2008). Results indicated that the model was overall a good fit for the data, $\chi^2(11) = 18.43$, $p = .072$, comparative fit index (CFI) = .98, Tucker-Lewis index (TLI) = .96, root mean square error of approximation (RMSEA) = .06 with 90% CI [.0, .10], standardized root mean square residual (SRMR) = .05. The chi-squares test statistic in SEM tests the null hypothesis that the data and model are statistically equivalent, meaning that a failure to reject the null hypothesis ($p > .05$) is the desirable outcome for this test. For both the CFI and TLI, values greater than .95 are typically viewed as indicating good fit (see Bowen & Guo, 2011 for a discussion of this benchmark and for the others included here). Values for the RMSEA should generally be smaller than .08 to be considered an indicator of good model fit. Although the model's RMSEA statistic is below the .08 threshold, Bowen and Guo (2011) mention that the upper bound of the RMSEA's 90% confidence interval would

ideally also be smaller than .08. The upper bound of the model's RMSEA 90% confidence interval exceeds this value, which might suggest the current model may benefit from some improvement. For the final fit index, SRMR, values below .08 are typically regarded as demonstrating acceptable fit between the model and data (Hu & Bentler, 1999). The SRMR produced in the current analysis is smaller than this threshold.

After confirming that the model was a good fit for the data, the pathways in the model were then evaluated for statistical significance, as estimated by the lavaan package in R. Pornography use frequency significantly predicted porn sex scripting, $\beta = .26$, $p < .001$, 95% CI [.12, .41], but pornography use frequency did not significantly predict objectification of women, $\beta = .09$, $p = .34$, 95% CI [-.09, .26]. The two remaining pathways from the two mediating latent variables and sexual aggression were significant. Both objectification of women ($\beta = .61$, $p < .001$, 95% CI [.44, .78]) and porn sex scripting ($\beta = .23$, $p < .01$, 95% CI [.07, .38]) were associated with sexual aggression. See Figure 2 to see these results overlaid with the structural model.

Indirect effects were also tested to evaluate the model's mediators. Acceptance of the objectification of women did not mediate the relationship between pornography use frequency and sexual aggression, IE = .05, $p = .34$, 95% CI [-.06, .16]. In contrast, porn sex scripting did mediate the relationship between pornography use frequency and sexual aggression, IE = .06, $p = .03$, 95% CI [.01, .11].

Alternative Models

Alternative Model 1

Three alternative models were computed in attempts to further improve model fit with the data. See Table 12 for a summary of fit indices for the original and alternative models. The first alternative model tested was identical to the main SEM described above but with an added direct pathway between pornography use frequency and sexual aggression. The model fit indices suggested this alternative model was an acceptable fit for the data, χ^2 (10) = 18.12, *p* = .053, comparative fit index (CFI) = .98, Tucker-Lewis index (TLI) = .95, root mean square error of approximation (RMSEA) = .07 with 90% CI [.0, .11], standardized root mean square residual (SRMR) = .05. Importantly, however, the direct pathway from pornography use frequency and sexual aggression did not reach significance, β = .05, *p* = .56, 95% CI [-.11, .21]. Figure 3 shows the pathway regression weights for this model. This suggests that this alternative model does not provide a better fit for the data than the original model that omits a direct pathway between general pornography use frequency and sexual aggression.

Alternative Model 2

The second alternative model tested replaces pornography use frequency with preference for aggressive pornography as the exogenous manifest variable. This was done because research typically finds that pornography featuring violence is a stronger predictor of sexual aggression than general pornography use is (Wright et al., 2016). Moreover, in the current study, additional correlations revealed that preference for aggressive pornography was positively correlated with acceptance of the

objectification of women ($r = .162$, $p = .009$), porn sex scripting ($r = .312$, $p < .001$), rape proclivity ($r = .254$, $p < .001$), and sexual coercion ($r = .248$, $p < .001$). Although preference for aggressive pornography was not associated with cognitive objectification ($r = .100$, $p = .11$), the other correlations suggest that this variable might be a useful predictor of both objectification and porn sex scripting in the model.

The aggressive pornography variable is the aggregate of three pornography preference items: Preference for pornography featuring rape, pornography featuring BDSM, and pornography described as rough or aggressive. Although preference for aggressive pornography does not evaluate how often participants consume this genre of pornography, men with sexual experience who reported greater preference for aggressive pornography were also more likely to be more frequent pornography users ($r = .212$, $p = .004$). Model fit indices for this second alternative model were generally similar to the original model, χ^2 (11) = 18.39, $p = .073$, comparative fit index (CFI) = .98, Tucker-Lewis index (TLI) = .96, root mean square error of approximation (RMSEA) = .06 with 90% CI [.0, .11], standardized root mean square residual (SRMR) = .04. An examination of the model's pathways revealed that all were significant. In contrast, the pathway between general pornography use frequency and objectification of women was non-significant in the original model. The indirect effects in this alternative model were also both significant, meaning that both objectification of women (IE = .17, $p = .005$, 95% CI [.05, .28]) and porn sex scripting (IE = .09, $p = .01$, 95% CI [.02, .16]) mediated the relationship between

preference for aggressive pornography and sexual aggression. Figure 4 shows the regression weights for this alternative model featuring preference for aggressive pornography.

Alternative Model 3

The final alternative model tested builds upon the second alternative model. While the second alternative model resulted in a significant pathway between a pornography variable and objectification of women, the overall model fit did not represent a marked improvement over the original model. Porn sex scripting was targeted for this final alternative model since its association with sexual aggression was weaker in comparison to objectification of women's relationship with sexual aggression in the original and two alternative models. One possible reason for this is that the latent porn sex scripting variable is indicated by a single scale. In comparison, the three other latent variables are each indicated by two separate scales. To remedy this potential issue, the second alternative model was altered so that porn sex scripting was indicated by an aggregate version of the porn sex scripting scale and by the engagement in aggressive sex variable. This variable measures the frequency of participants' engagement in seven aggressive sexual behaviors common in pornography (e.g., choking and hair-pulling). In the subsample of men with sexual experience, aggressive sex was positively associated with porn sex scripting (r = .457, $p < .001$).

The results of this third alternative model suggest that it provides a better fit for the data than both the original model and the other alternative models, χ^2 (11) =

10.77, p = .463, comparative fit index (CFI) = 1.0, Tucker-Lewis index (TLI) = 1.0, root mean square error of approximation (RMSEA) = .00 with 90% CI [.0, .08], standardized root mean square residual (SRMR) = .03. All pathways in the model are significant (see Figure 5 for regression weights). One particular aim of testing this model was to strengthen the association between porn sex scripting and sexual aggression. This pathway appears to be slightly strengthened in comparison to previous models, β = .34, p < .001, 95% CI [.17, .51].

As with the second alternative model, indirect effects in the model were statistically significant. Objectification of women mediated the association between preference for aggressive pornography and sexual aggression (IE = .13, p = .02, 95% CI [.02, .23]), as did porn sex scripting (IE = .20, p < .001, 95% CI [.09, .31].

Discussion

The objectification of women has been proposed as a mechanism of men's subjugation of women (Dworkin, 1979; MacKinnon, 1989). This dehumanizing process has also been proposed to play a causal role in the perpetration of sexual violence (Fredrickson & Roberts, 1997; Gervais & Eagan, 2017). Media play a major role in the cultural transmission of the objectification of women (Fredrickson & Roberts, 1997). Pornography in particular is prone to depicting women as sex objects. Moreover, pornography shows sexual aggression as erotic and desirable (Bridges et al., 2010). Studies suggest that people incorporate behaviors and acts observed in pornography into their sex scripts, which may be associated with engagement in sexual aggression. While decades of research have identified a link between

pornography and sexual aggression (Wright et al., 2016), comparatively fewer studies have tested pathways that might explain the association between the two variables.

This study therefore aimed to evaluate a model predicting young men's sexual aggression from pornography use frequency from two independent pathways: objectification of women and porn sex scripting. Structural equation modeling was used to test the model's fit with data from a subsample of cisgender, female-attracted (i.e., heterosexual and bisexual) men with sexual experience (*n* = 188). Overall, the model was found to be a good fit for the data. Although the model's pathway between pornography use frequency and the objectification of women (H1) was ultimately not supported by the data, all other pathways in the model were statistically significant. This means the data confirmed pornography use frequency as a significant predictor of porn sex scripting (H2) and identified the objectification of women (H3) and porn sex scripting (H4) as significant predictors of men's sexual aggression. Further, porn sex scripting was a significant mediator of the relationship between porn use frequency and sexual aggression. This finding offers partial support for H5, which predicted that both the objectification of women and porn sex scripting would mediate the association between pornography use frequency and sexual aggression. The data did not find that objectification was also a mediator in this relationship. To summarize the findings, the more frequently men consumed pornography, the more likely they were to incorporate pornographic sexual scripts into their own sexual activities; in turn, men's greater participation in porn sex scripting was found to be associated with higher levels of sexual aggression, indicated in this model by sexual

coercion perpetration and rape proclivity. Analyses also indicated that the association between men's pornography use and sexual aggression was explained by their engagement in porn sex scripting. An alternative model was tested that included a direct pathway from pornography to sexual aggression, but this pathway was ultimately non-significant, suggesting that the association between pornography use frequency and sexual aggression is fully mediated by porn sex scripting. Moreover, it was found that men who endorsed greater levels of objectification were also more likely to report sexual aggression, but objectification did not explain the association between men's pornography use and sexual aggression.

The significant association between objectification and sexual aggression in the model adds to the body of research finding a link between the two variables. In similar path models, associations between objectification and rape-supportive attitudes and sexually aggressive behaviors have been consistently reported (Seabrook et al., 2019; Wright & Tokunaga, 2016; Zhou et al., 2021). The findings from the current study also align with studies that have identified a relationship between objectification and perpetration of sexual aggression or rape proclivity via regression analyses or correlations (Gervais et al., 2014, 2018; Ramsey & Hoyt, 2015; Rudman & Mescher, 2012). As research confirms that objectification predicts sexual aggression (particularly among men), the evidence grows in favor of a theory that positions objectification as an underlying mechanism of sexual violence. Scholars have suggested that objectification facilitates perpetration of sexual violence (Fredrickson & Roberts, 1997; Gervais & Eagan, 2017), but there is a lack of

psychological theories that articulate the exact processes involved in this association. The findings from the current study further emphasize the need for such theories, which would offer important insight about the underlying cognitive distortions associated with perpetration and help identify potential avenues for prevention practices. For instance, many sexual assault prevention programs tend to focus on attitudes like rape myth acceptance (Paul & Gray, 2011) or offer educational modules about sexual consent (Jozkowski, 2015). Broadly, these types of sexual assault prevention efforts aim to influence the way people think about sexual assault and sex – but perhaps such programs would be more effective if objectifying beliefs were targeted as well. Theoretically and arguably, objectification precedes other problematic beliefs. It is possible that, before someone can ascribe to rape myths about female victims, they must first accept that women are less deserving of humane treatment. In a similar vein, people with objectifying tendencies may be less inclined to use proper sexual consent practices; after all, objectified individuals are by definition perceived as less than human. Addressing concepts like rape myth acceptance and consent is much like treating an ailment's symptoms – it may bring temporary relief, but the cause of the problem will remain. Targeting objectification may bring such programs closer to the root cause of sexual violence.

Importantly, research establishing a link between objectification and sexual aggression, including the present study, is needed to disrupt the cultural complacency surrounding the objectification of women. While some forms of objectification are less welcomed, such as sexually harassing behaviors, others are more likely to escape

scrutiny. For instance, advertisements featuring sexualized women are judged as increasingly socially acceptable over time (Zimmerman & Dahlberg, 2008), and liberal (but not radical) feminist attitudes are positively associated with judging sexually objectifying advertisements as ethical (Choi et al., 2016, 2020). Women's notions of empowerment have become entangled with self-sexualization and objectification (Erchull & Liss, 2013), which means criticisms of objectification have been similarly conflated with criticisms of women's sexual empowerment. Naturally, this makes it harder to confront and challenge objectification – but with research demonstrating firm associations between objectification and sexual violence, it is perhaps more possible to break through the contemporary acceptance of objectification and sexualization.

While objectification was a strong predictor of sexual aggression in the current sample, pornography was not found to predict objectification. This contrasts with Seabrook et al. (2019), Wright & Tokunaga (2016), and Zhou et al. (2021), who identified pornography use frequency as a significant predictor of their objectification measures. Not even the bivariate correlations between pornography use frequency and the individual measures of objectification (acceptance of the objectification of women and cognitive objectification of women) resulted in significant associations – the largest correlation of these variables was between pornography use frequency and cognitive objectification among the subsample of men with sexual experience, but this was only marginally significant. There could be several reasons why, in contrast with Seabrook et al. (2019) and Zhou et al. (2021), the current study did not detect a

significant relationship between men's pornography use and objectification. First, the other two studies used different measures of objectification. Zhou and colleagues (2021) modified an 8-item dehumanization scale and asked participants to report their agreement with statements likening women to animals or robots (e.g., "I felt like women are generally mechanical and cold, like a robot"). Although Seabrook et al.'s (2019) study also specifically measured the acceptance of the objectification of women, they used a 15-item scale adapted from a dissertation (Morse, 2007), whereas the current study employed two subscales from measures by Ward (2002) and Wright and Tokunaga (2015). The objectification measures used in the current study an in previous studies all quantify some element relating to the objectification of women, but there are operationalization differences, discrepancies in item phrasing, and other dissimilarities that may have contributed to the contrasting findings relating to pornography use frequency. Another reason for the lack of association between pornography use frequency and objectification might be the ceiling effect observed in the current study's pornography frequency variable. The most commonly endorsed anchor for the pornography frequency item was daily or almost daily, which was selected by a third of the sample. It is possible that the addition of a higher frequency anchor (e.g., *Twice a day or more*) would add greater sensitivity to this item.

Altogether, the lack of an association between pornography use frequency and objectification in the current study should not be considered sufficient evidence to argue against a relationship between these two variables. Past research reviewed here has reliably identified a significant link between pornography use and

objectification (Peter & Valkenburg, 2009; Seabrook et al., 2019; Vandenbosch & van Oosten, 2017; Wright & Tokunaga, 2016; Zhou et al., 2021), and the discussion above outlines some reasons for the null association in the current study. The conceptual work by Dworkin (2000) and MacKinnon (1989) arguing how pornography promotes objectification (and subsequently the subjugation) of women is not somehow undone by the lack of association in the present study. Importantly, the current study did not fail to produce any associations between objectification and pornography. In testing alternative models, it was found that replacing pornography use frequency with preference for aggressive pornography – operationalized by the aggregate of preference for pornography featuring rape, BDSM, and rough or aggressive sex – resulted in a significant pathway to objectification (as well as significance for all other pathways, just as in the original model). Bivariate correlations similarly were significant between preference for aggressive pornography and acceptance of objectification of women. This is perhaps unsurprising since previous research has typically identified stronger associations between violent pornography and undesirable outcomes like sexual aggression (Wright et al., 2016). While essentially all genres of pornography contain elements of objectification, it seems plausible that consuming pornography that pairs objectification with aggression is more likely to foster harmful objectifying attitudes and practices. Conversely, it is also probable that men who tend to be more objectifying seek out more aggressive types of pornography. These are not mutually exclusive possibilities; there may be both men who develop a greater proclivity for objectification through

repeated exposure to aggressive pornography and men who seek out aggressive pornography that validates their objectifying view of women.

The porn sex scripting pathways in the original model – pornography use frequency as a predictor of porn sex scripting, and porn sex scripting as a predictor of sexual aggression – were supported by the data. As with previous research on porn sex scripting (Herbenick et al., 2020; Marshall et al., 2021; Sun et al., 2015, 2016, 2017; Svedin et al., 2011; Wright et al., 2015), the current study adds support to the notion that pornography use is related to porn sex scripting. Specifically, more frequent pornography use was found to be related to greater incorporation of pornography into sexual behaviors, such as attempting to reproduce acts or scenarios found in pornography with a sexual partner. Generally, findings indicated that porn sex scripting was very common. Nearly 90% of men with sexual experience in the sample reported they had ever participated in any type of porn sex scripting. Looking at endorsement rates for specific items, over 70% of this subsample reported seeing something in pornography that they later tried while having sex, and approximately 65% had asked a sexual partner to try a behavior or act they had seen in pornography. In comparison, Sun et al. (2016) reported that 36.3% of their sample of college-aged men had asked a sex partner to try something from pornography, while Svedin and colleagues (2011) found that approximately 29% of young men who used pornography on a less-than-daily basis and 52% of young men who used pornography daily had participated in sexual activity they had been inspired to try after viewing pornography. There may be many reasons why the current study found a greater

prevalence of porn sex scripting than Sun et al. (2016) and Svedin et al. (2011), but one possibility is that the popularity of porn sex scripting has simply increased in the years since the two studies were conducted. Importantly, though, findings from the current study and related research suggest that many young men find pornography to be imitable. Far from considering pornography to be purely fantasy, it seems that the majority of sexually active young men draw from this sexually explicit media to inform their own sexual behavior.

Young men's integration of pornography into their own sexual activity is concerning, as the current study determined that greater porn sex scripting was positively associated with sexual aggression. This means that the more frequently men took ideas from pornography and attempted to reproduce pornographic acts or scenarios, the higher they scored on the study's measures of sexual aggression. Moreover, it was found that porn sex scripting fully mediated the relationship between men's pornography use frequency and sexual aggression. In plain terms, this means that porn sex scripting explained the relationship between men's pornography use frequency and sexual aggression. These findings are significant for a few reasons. First, it appears no previous studies have directly examined the relationship between porn sex scripting (operationalized as integrating pornography acts into one's own sexual behaviors) and sexual aggression. The current study therefore offers novel insight into the connection between porn sex scripting and sexual aggression. Second, the findings emphasize the need to critically evaluate men's pornography use. In the absence of data on sexual aggression, the association between men's pornography use

frequency and porn sex scripting could be interpreted as men acting harmlessly for the sake of sexual exploration and gratification. Instead, however, the data show that porn sex scripting predicts men's sexual aggression. Finally, the identification of porn sex scripting as a mediator between pornography use frequency and sexual aggression supplies a mechanism by which pornography consumption translates into sexual aggression. Although outside the scope of the current study, it is possible that men use sexually coercive tactics in order to get their sexual partners to comply with porn sex scripting. In a review of qualitative research on women's experiences of pornography, researchers noted that women report feeling pressured and coerced to recreate sexual acts their male partners had seen in pornography (Ashton et al., 2018), indicating that men use sexual coercion to participate in porn sex scripting. Altogether, much research has identified associations between pornography and sexual aggression (Wright et al., 2016), but few have offered empirically based explanations for this relationship. Adding to research that identifies objectification as a mechanism for this association (Seabrook et al., 2019; Zhou et al., 2021), the current study indicates that porn sex scripting offers a similarly important explanation.

Just as efforts surrounding sexual assault prevention tend to overlook objectification, very few prevention programs address pornography, as noted by de Heer and colleagues (2020). This is curious given the decades' worth of evidence demonstrating an association between pornography consumption and sexual aggression (Wright et al., 2016). The findings from the current study further highlight

the need for programs to include pornography as part of their curriculum, especially since researchers have noted that men are not accustomed to discussing or thinking critically about mainstream pornography (Antevska & Gavey, 2015). Such programs would provide the opportunity for individuals to critically reflect on pornography and the way it permeates sexual desires, expectations, and behaviors. Importantly, conversations about how pornography may encourage sexually aggressive behaviors or create pressure to participate in porn-scripted sex would deepen young people's understanding of the role of sexually explicit media in their lives.

Beyond prevention programs, there is a need for greater critical discourse about pornography (not in academia, though, which is already filled with clinical commentaries about "the debate" on pornography). Pornography has occupied a comfortable position without much risk of criticism or resistance ever since the end of the second wave of feminism in the late 1980s, which very publicly opposed pornography. The end of the second wave essentially removed pornography from an unflattering limelight – pornography had won against the second-wave feminists, and its prize was being allowed to disappear from critical public discourse. This happened right in time for the arrival of the Internet and the subsequent proliferation of Internet pornography. Research like the current study suggests that it is perhaps time for a revival of widely visible critical discussions about pornography.

Secondary Findings

Pornography

While only pornography frequency was featured in the original model, other data related to participants' pornography use were collected. Some of the findings reflect previous research about pornography, such as age of first pornography exposure. In the current study, the average age of first unintentional pornography exposure was 11 years and age of first intentional pornography exposure was slightly older at around 12 and a half years. The minimum reported ages for both measures were very young (3 and 4 years, respectively), younger by a few years than the minimum age of first pornography exposure reported by other research (Bőthe et al., 2021; Harper & Hodgins, 2016; Palazzolo & Bettman, 2020). Notably, exposure to pornography by age of 10 (38% for unintentional and 15% for intentional) was not rare in the current sample. Moreover, nearly half of participants disclosed they were regularly using pornography by the time they were 13 years old. The developmentally sensitive ages at which young men are being exposed to and seeking out pornography has implications for young people's sexual attitudes and behaviors (Alexandraki et al., 2018; Peter & Valkenburg, 2016).

Novel information about young men's pornography genre preference was also collected. In contrast to the generally aggressive nature of mainstream pornography (Bridges et al., 2010), the majority of the men in the sample indicated they preferred more romantic or gentle forms of pornography (romantic or gentle = 56.7%, vanilla = 55.9%, and flirty = 74.3%). Yet over half of respondents still showed a preference for pornography described as aggressive (52.1%) and nearly a quarter (24.1%) expressed some preference for BDSM pornography. Further, approximately 16% of young men

surveyed reported they preferred pornography featuring rape. For comparison, a survey of Italian young men's judgements of sex acts seen in pornography reported that 1.6% deemed rape to be arousing and another 32.8% indicated it was arousing but immoral (Stella, 2020); Herbenick and colleagues (2020), while they did not evaluate preferences or judgements, found that 20% of men in their sample had viewed pornography showing simulated rape.

Perhaps unsurprisingly, preferences for romantic or gentle, vanilla, and flirty pornography were all positively correlated with each other, while preferences for rough, BDSM, and rape pornography produced positive intercorrelates. This reflects research finding that use of rape pornography and pornography featuring BDSM tends to cluster together (Hald & Štulhofer, 2016). Preferences for the non-aggressive pornography genres were negatively correlated with preferences for the aggressive genres, suggesting that men who prefer gentler forms of pornography may show some aversion for aggressive genres (and vice versa). Analyses also revealed that men who expressed a greater preference for aggressive pornography genres also viewed pornography more frequently, engaged in more porn sex scripting, perceived pornography as more realistic, and reported having higher rape proclivity and greater sexual coercion perpetration. Preference for aggressive genres was also negatively associated with age of first unintentional, intentional, and regular pornography use – this means that men who prefer aggressive pornography tended to be exposed to pornography at a younger age. According to the 3AM model (Wright, 2011), pornography is more likely to influence sexual scripts when it serves as an

individual's first source of sexual information (Leonhardt et al., 2019). Although the current study did not ask participants about competing sources of sexual information (e.g., parents or peers), the data do suggest that younger exposure to pornography may be more impactful than exposure at later ages, particularly with respect to preference for aggressive sexual stimuli.

Aggressive Sex

As an indirect way of evaluating porn sex scripting, participants were asked about their participation in aggressive behaviors commonly observed in pornography during sex. On at least one occasion, the majority of participants with sexual experience reported they had spanked someone (81.9%), pulled someone's hair (78.7%), choked or put their hands around someone's throat (70.7%), made someone gag (67%), and called someone dirty or degrading names (59.6%). Slapping (46.8%) or pinching (27.7%) were less commonly reported, but still relatively common. These rates are higher than those reported by Bridges et al.'s (2016) survey of sexual behaviors, which found that 16% of young men had choked a partner during sex and 27% had engaged in derogatory name-calling during sex. A more recent survey by Hernenick et al. (2021) reported that 58.7% of undergraduate men had ever choked someone during sex and 25.1% had ever called someone names (like slut or bitch) during sex. Choking is of particular interest because it is a dangerous practice. Although the current study uses the colloquial understanding of the term choking, restricting blood or oxygen flow via external pressure on the throat or neck is actually strangulation (choking occurs when the trachea is obstructed internally by a foreign

object). Strangulation can lead to a host of undesirable outcomes, including loss of consciousness, brain injury, damage to arterial walls, damage to thyroid gland, dysrhythmia (disturbance to normal heartbeat), stroke, and death (Bichard et al., 2021). Adding to the danger, serious injuries resulting from strangulation can occur without any external signs of injury (De Boos, 2019). There is little information relating to how many women experience injuries as a result of sexual strangulation. Research has, however, revealed that nearly a quarter of women report having experienced scary sexual situations, and that strangulation during sex makes up some of these scary experiences (Herbenick et al., 2019). A large survey of young adults also found that being chocked by a sexual partner was positively associated with anxiety, sadness, depression, and loneliness (Herbenick et al., 2021).

In the current study, men's aggressive sex was related to increased levels of sexual coercion perpetration, rape proclivity, preference for aggressive pornography, and porn sex scripting. Regardless of the consensual nature of such aggressive sex, these findings suggest that participating in aggressive sex like choking (strangulation) is part of a concerning cluster of sexual behaviors and practices. Interestingly, engagement in aggressive sex was not related to perceptions of pornography as realistic. Previous research has highlighted the role of perceived pornography realism as a mediator or moderator of pornography use and sex-related attitudes and behaviors, finding that perceiving pornography as realistic explained or strengthened the association between pornography and measured outcomes (Baams et al., 2015; Peter & Valkenburg, 2010; Wright et al., 2021). Although the current study did not

perform such analyses, the non-significant correlation between individuals' reproduction of aggressive sex acts commonly seen in pornography and perceived pornography realism suggest that the belief that pornography is realistic may not play a prominent role in all pornography-related variables.

False Rape Accusations

Men were found to overestimate the prevalence of false rape accusations. The average estimate for the prevalence of false rape accusations was approximately 20% The actual prevalence of false rape accusations is believed to be around 2-8% (Lonsway et al., 2009), which is far lower than the average estimate provided by the current study's respondents. Reasons for overestimating the threat of false rape accusations include sensationalized media coverage of false accusation cases and having inaccurate and stereotypical ideas about rape (Orchowski et al., 2020). Items relating to fears about false rape accusations revealed that about half of men surveyed were at a minimum a little worried about being falsely accused of rape or about someone they know being falsely accused of rape. Additionally, most of the sample agreed with the notion that false rape accusations have ruined a lot of men's lives (78%), that it is easy for women to falsely accuse men of rape (75.5%), that people are quick to assume women's rape accusations are true (74.3%), and that there should be greater protections for men accused of sexual assault (61.2%). While research on this issue is scarce, a large nationally-representative sample of U.S. adults reported that 31% of respondents believed women falsely claiming sexual harassment or

sexual assault was a major problem, while an additional 45% believed it was a minor problem (Graf, 2018).

Altogether, these findings point to a sustained cultural mistrust of women's experiences with sexual assault and suggest that many men believe women weaponize rape accusations to harm men. These beliefs were positively correlated with the objectification of women measures and rape proclivity in the current study. Specifically, greater endorsement of ideas that false rape accusations are common and hurt men were associated with more acceptance of the objectification of women, greater cognitive objectification of women, and higher levels of rape proclivity. These associations make sense – objectified women are often reduced to sexual objects that are not capable of refusing sex. Rape accusations are thereby necessarily fabricated and ill-intentioned according to this perspective. Moreover, for some men, rape proclivity may be sustained by the myth that women enjoy being raped; accusations of rape belie this notion, which may contribute to ideas that accusations of rape are false and unfairly weaponized against men.

Limitations and Future Directions

A notable limitation of this study is that the data are cross-sectional and correlational, thereby preventing causal implications to be drawn from the findings. Importantly, however, researchers have argued that SEM offers "compelling potential" (Bullock et al., 1994, p. 262) with respect to making causal inferences – SEM emerged, after all, from researchers' need to better approximate causality (Bollen & Pearl, 2013). While the current study cannot resolutely conclude that

pornography *causes* sexual aggression through porn sex scripting, the findings do suggest that, in real life, it is plausible that pornography compels some men to engage in sexual aggression through attempts to recreate pornographic content. In a line of research for which true experimentation would be ethically and practically challenging, SEM is one of the more powerful tools to evaluate potential pathways to sexual aggression perpetration. The lack of causal inferences may therefore remain a limitation of this study, but the results still reveal important underlying processes related to sexual aggression.

While this study indicated significant pathways between pornography use frequency and porn sex scripting and from porn sex scripting to sexual aggression, the standardized path coefficients were relatively modest (.26 and .23, respectively). To some extent, this is to be expected in a study attempting to quantify complex human behaviors. Moreover, the path coefficients are similar in size to other SEM standardized path coefficients produced by pornography variables (e.g., Seabrook et al., 2019; Wright & Tokunaga, 2016). Regardless, the values of these coefficients suggest that either the real-world associations between the variables are similarly modest, or that there is a need for improvements in measurement, sampling, or other methodology for these variables in particular. Through testing an alternative model in the current study, it seems likely that overcoming methodological shortcomings may bolster the findings related to porn sex scripting. In the original model, porn sex scripting was tested as a latent variable indicated by two parcels comprised of items from five porn sex scripting items; in the Alternative Model 3, the latent variable for

porn sex scripting was indicated by one indicator containing all porn sex scripting items and a second indicator containing a behavioral measure of aggressive sexual practices commonly observed in pornography (e.g., spanking and choking). Using preference for aggressive sex as the exogenous variable and the addition of the behavioral measure of aggressive sexual practices as a second indicator of porn sex scripting, the standardized pathway coefficients between pornography and porn sex scripting (.59) and between porn sex scripting and sexual aggression (.34) are considerably larger than the coefficients in the original model. Therefore, it would appear as though some alterations to the way porn sex scripting is measured may offer stronger results. In the current study, engagement in aggressive sexual acts was not included in the original model as an indicator of porn sex scripting because of its indirect ties to pornography. In contrast, the modified porn sex scripting scale by Sun et al. (2016) directly evaluated the incorporation of pornography into sexual activity. While the aggressive sexual behaviors assessed are certainly common in pornography, there is no way to determine in the current study whether these behaviors actually stemmed from pornography. For example, given the aggression in pornography and how pornography exposure typically precedes sexual experience in young men, it seems likely that people who have choked a partner during sex were first exposed to the act through pornography; however, engagement in choking during sex may be entirely unrelated to pornography for some people. Future research would benefit from measuring engagement in such aggressive acts in the context of pornography specifically.

In general, pornography is a conceptually difficult variable, and as such can be challenging to operationalize and empirically test. In the current study and in other research, it may be the case that pornography use frequency is limited in its utility as a predictor variable depending on the way it is measured. This issue may be best illustrated by comparing the social media use frequency variable and the pornography use frequency variable in the current study. The highest response option frequency for the pornography use item was *Every Day or Nearly Every Day*, which garnered the highest endorsement out of all the response options. In contrast, the highest response option frequency for the social media use frequency was *4 Or More Hours A Day*. The social media use item also included response options for 2-3 hours and 1 hour of daily social media use. It is likely that pornography use frequency also should be evaluated on a similar scale. There may be measurable differences between individuals who spend only a few minutes a day viewing pornography and those who spend considerably more time consuming it.

Another limitation of pornography measurement in the current study is the subjectivity involved in asking participants about pornographic content. This issue is particularly relevant to the current study's questions asking participants to report their preference for "rough and aggressive" pornography. Given that aggression is relatively commonplace in pornography (Bridges et al., 2010), it is possible that some individuals perceive some forms of aggression or violence as normal and would subsequently not label it as aggressive or violent. One possible solution to this problem would be to ask participants about specific aggressive acts or behaviors

(such as choking) they have observed in pornography, although this approach would still be subjective to respondents' self-reporting. Ideally, future research should somehow obtain and analyze the pornography participants consume. As the vast majority of pornography is sourced from the Internet, participants could directly share with researchers links to pornographic videos and images they have viewed over a period of time. Although this strategy would also have its own set of drawbacks (including participants changing their pornography viewing habits with the knowledge they would share links with researchers), it would allow for researchers to independently analyze pornographic content for aggression and other elements of interest.

Objectification of women is a similarly difficult concept to test, mainly because there are few standardized scales that evaluate it. In the current study, acceptance of the objectification of women is measured by two subscales from previous studies (Ward, 2002; Wright & Tokunaga, 2015). Wright and Tokunaga's (2015) subscale in and of itself is composed of items from Ward (2002) and Kistler and Lee (2010). Cognitive objectification of women was adapted from a measure of self-objectification (McKinley & Hyde, 1996). While these measures worked sufficiently well to predict sexual aggression in the current study, there is still a need for additional testing and development of a more comprehensive objectification of women measure. Gervais and colleagues (2017) created the Interpersonal Sexual Objectification Scale – Perpetration (ISOS-P) after rigorous testing of its psychometric properties; however, this scale measures objectification primarily as a

function of sexually-harassing behaviors such as cat-calling and unwanted sexual comments or contact. To be sure, these are important aspects of objectification, but there are other components of objectification that the scale does not include such as cognitive distortions associated with objectification. It is possible that some manifestations of objectification, such as the more blatant sexually harassing behaviors, are more tightly linked to sexual aggression. Future research in this area would benefit from the development of a scale that measures cognitive objectification, objectifying behaviors, and objectification-supporting beliefs.

This study was conceptualized and conducted through the framework of men's sexual violence against women. The findings and conclusions described here may therefore not be generalizable to other types of sexual violence, such as same-sex sexual violence, sexual violence perpetrated by women against men, or child sex abuse. The role of objectification would be particularly interesting to investigate in these cases, as dehumanizing processes can be used against any individual, regardless of identity. Moreover, related to generalizability, most of the sample was comprised of young men attending college in the American West. Future research would benefit from testing samples of men with greater educational diversity and more variations in age, ethnicity, and nationality.

Beyond addressing the limitations of the current study, there is much for future research to explore in relation to pornography, objectification, porn sex scripting, and sexual aggression. Qualitative research would likely provide rich narratives in this context, allowing researchers to map out people's experiences with

the variables in the current study. For instance, one particularly interesting finding that merits further investigation is the contrast between men's beliefs that pornography is not realistic and the high number of men who reported engaging in porn sex scripting. Interviews might help researchers understand why young men try to reproduce media they perceive as being unrealistic. Another potentially insightful line of research could investigate the current study's model through a victimization framework. This would mean that porn sex scripting would be measured as something done to respondents (e.g., "how often does your partner ask you to try something they had seen in pornography?"), objectification would be measured as experiences being objectified, and sexual aggression would be evaluated as experiences of sexual victimization. In this hypothetical model, respondents would report their partner's pornography use frequency or preference for aggressive pornography.

Conclusions

The current study makes the case that the way men think about women is central to sexual aggression. Objectification is a cognitive adaptation for violence – it arms the mind with the necessary tools for committing harm without incurring an ethical or moral crisis. In the context of sexual violence, men's objectification of women manifests in measurable harms. Pornography also very much concerns the way men think about women. Does she like pain? Does she enjoy degradation? Pornography assures men that of course she does and shows men how to give her

what she wants. Men who follow this script are at risk of participating in the maltreatment of women.

Objectification and pornography pose sizeable societal challenges. They both service (and are serviced by) deeply-rooted patriarchal privileges. Overall, it will be impossible to sufficiently address these issues without also taking on men's entitlement – entitlement to women's bodies, entitlement to pornography, entitlement to reproducing pornography. This likely cannot be done without backlash over fears that men's sexual freedoms will be diminished. Although success is not guaranteed, such a confrontation will at least bring objectification and pornography back into the public spotlight.

Table 1

Endorsement Rates for Porn Sex Act Items Among Participants with Sexual Experience

Porn Sex Act Items	Never % (*n*)	Rarely % (*n*)	Sometimes % (*n*)	Often % (*n*)	Very Frequently % (*n*)
I have spanked someone during sex	18.1 (34)	12.2 (23)	30.9 (58)	20.2 (38)	18.6 (35)
I have pulled someone's hair during sex	21.3 (40)	15.4 (29)	29.8 (56)	16 (30)	17.6 (33)
I have choked someone or put my hands around their throat during sex	29.3 (55)	16 (30)	22.9 (43)	19.7 (37)	12.2 (23)
I have made someone gag during sex (with a penis, fingers, or sex toy)	33 (62)	18.1 (34)	26.1 (49)	12.2 (23)	10.6 (20)
I have called someone degrading or dirty names during sex	40.4 (76)	15.4 (29)	29.8 (56)	8 (15)	6.4 (12)
I have slapped someone during sex	53.2 (100)	21.3 (40)	16.5 (31)	4.3 (8)	4.8 (9)
I have pinched someone during sex	72.3 (136)	11.2 (21)	8.5 (16)	2.7 (5)	4.8 (9)
Other Sex Act Items*					

I have ignored requests from a sexual partner to stop or slow down during sex	86.2 (162)	9.6 (18)	2.7 (5)	0	1.6 (3)
I have removed a condom during sex without the other person knowing	98.4 (185)	1.1 (2)	0.5 (1)	0	0

Note. Asterisk* denotes items in the sex act scale that are not necessarily common in pornography but potentially represent aggression and non-consensual activity

Table 2

Endorsement Rates for Acceptance of Objectification of Women Items

Scale Item	**Agree % (*n*)**	**Disagree % (*n*)**	**Neutral % (*n*)**
It is ok to check out an attractive woman at a bar or dance club	70.1 (183)	13.4 (35)	16.1 (42)
Men are 'hardwired' to want to look at women's bodies	64.4 (168)	21.9 (57)	13.4 (35)
Being with an attractive woman gives a man prestige	60.5 (158)	28.4 (74)	10.7 (28)
It is natural for a man to admire pretty women and look at their bodies, even if he has a girlfriend	56.7 (148)	31.8 (83)	10.7 (28)
It is okay to admire women's bodies as they pass on the street	46.3 (121)	39.5 (103)	13.8 (36)
It bothers me when a man is interested in a woman only if she is pretty*	44 (115)	37.2 (97)	18.4 (48)
There is nothing wrong with men being primarily interested in a woman's body	41 (107)	44 (115)	14.6 (38)
An attractive woman should expect sexual advances and should learn how to handle them	30.3 (79)	59.1 (154)	10.3 (27)
Using her body and looks is the best way for a woman to attract a man	21.4 (56)	66.7 (174)	11.5 (30)
When women are out at a club, it is okay to think of them as 'eye candy'	19.6 (51)	60.2 (157)	19.9 (52)

Women should spend a lot of time trying to be pretty; no one wants to date a woman who has 'let herself go'	16.9 (44)	71.7 (187)	11.1 (29)
Women should be more concerned about their appearance than men	7.3 (19)	79.3 (207)	13 (34)
There's nothing wrong with men whistling at shapely women	4.6 (12)	92.4 (241)	2.7 (7)

Note: Asterisk* denotes reverse-coded item. Percentages associated with the reverse-coded item reflect endorsement of the item as it was presented to participants.

Table 3

Endorsement Rates for Cognitive Objectification of Women Items

Scale Item	Agree % (*n*)	Disagree % (*n*)	Neutral % (*n*)
I think it is more important that women's clothes are comfortable than whether they look good on them*	79.3 (207)	4.6 (12)	15.7 (41)
I think more about the things women say than how they look*	77.4 (202)	9.2 (24)	13.0 (34)
I rarely think about how women look to other people*	53.6 (140)	26.4 (69)	19.5 (51)
I often think about whether the clothes women wear make them look good	42.1 (110)	47.9 (125)	9.6 (25)
I rarely compare women on their looks*	38.3 (100)	49.9 (129)	11.9 (31)
During the day I think about the way women's bodies look many times	37.9 (99)	50.2 (131)	11.5 (30)
I am more concerned with what women's bodies can do and achieve than how they look*	37.9 (99)	27.2 (71)	34.5 (90)
I rarely think about how women look*	16.1 (42)	73.2 (19.1)	10.3 (27)

Note. Asterisk* denotes reverse-coded item.

Table 4

Endorsement Rates for Items on the ASBI Coerce Subscale Among Participants with Sexual Experience

Scale Item	**Never % (*n*)**	**One Time or More % (*n*)**
I have told someone I was making out with that they could not stop and leave me frustrated	85.1 (160)	14.9 (28)
I have given someone the silent treatment when they would not have sex with me	87.8 (165)	12.2 (23)
I have told someone that their refusal to have sex with me was changing the way I felt about them	88.3 (166)	11.7 (22)
I have told someone to calm down after they got upset at me for trying to have sex with them	88.3 (166)	11.7 (22)
I have dated someone younger than me because I thought they would be more willing to give me what I wanted sexually	88.3 (166)	11.6 (22)
I have said that I would leave or end a relationship if my partner would not have sex with me	88.8 (166)	11.2 (21)
I have gotten a little drunk and made someone I was with have sex with me	90.4 (170)	9.6 (18)
I have gotten someone drunk or high so they would be less able to resist my advances	94.1 (177)	5.9 (11)
I have called someone an angry or rude name and pushed them away when they would not have sex with me	94.1 (177)	5.8 (11)
I have given someone drugs or alcohol so that they would feel obligated to do me a sexual favor	95.2 (179)	4.8 (9)
I have promised someone that I would not harm them if they did everything that I told them to	95.7 (179)	4.3 (8)

I have warned someone that they could get hurt if they resisted me so they should relax and enjoy it	97.3 (183)	2.6 (5)
I have belittled or insulted someone in order to get them to sleep with me	97.9 (184)	2.1 (4)
I have gripped someone tightly and given them an angry look when they were not giving me the sexual response I wanted	97.9 (184)	2.1 (4)

Table 5

Endorsement Rates for Items on the False Rape Beliefs Scale

Scale Item	**Agree % (*n*)**	**Disagree % (*n*)**	**Neutral % (*n*)**
False rape allegations have ruined a lot of men's lives	78.2 (204)	16.5 (43)	5 (13)
It is easy for a woman to falsely accuse a man of sexual assault	75.5 (197)	12.3 (32)	11.9 (31)
People are quick to assume that women's accusations of sexual assault are true	74.3 (194)	15.7 (41)	9.6 (25)
There should be more protection for men who have been accused of sexual assault	61.2 (160)	18.4 (48)	19.9 (52)
Most men who are accused of sexual assault are guilty*	50.6 (132)	17.6 (46)	31.4 (82)
Men who have been accused of sexual assault are usually treated fairly*	23 (60)	55.6 (145)	21.1 (55)

Note. Asterisk* denotes reverse-coded item.

Table 6

Bivariate Correlations for Main Study Variables Among All Participants and Among the Subsample of Participants with Sexual Experience

	1	2	3	4	5	6
1. Porn use frequency	--	-.008	.135†	.240**	.176*	.035
2. Acceptance of objectification	.035	--	.417**	.088	.333**	.386**
3. Cognitive objectification	.102	.400**	--	.129	.304**	.276**
4. Porn sex scripting	.188**	.052	.075	--	.251**	.152*
5. ASBI coerce subscale	.105	.280**	.215**	.190**	--	.630**
6. Rape proclivity	.041	.388**	.249**	.074	.621**	--

Note. $^{\dagger}p$ = .064, *p < .05, **p < .01. ASBI = Aggressive Sexual Behavior Inventory. Results for all participants are shown below the diagonal; results for participants with sexual experience are shown above the diagonal.

Table 7

Bivariate Correlations for Pornography Genre Preference Items Among All Participants

	1	2	3	4	5	6	7	8	9	10
1. Romantic	--									
2. Rough	-.483***	--								
3. Incest	-.119†	.299***	--							
4. Rape	-.250***	.431***	.427***	--						
5. Kinky	-.220***	.513***	.274**	.374***	--					
6. Vanilla	.441**	-.360***	-.092	-.199**	-.480***	--				
7. BDSM	-.283**	.455***	.159*	.365***	.594***	-.396***	--			
8. Flirty	.453***	-.178**	.063	-.199**	-.151*	.352***	-.151*	--		
9. Teens	-.026	.097	.315***	.289***	.091	.022	.097	.128*	--	
10. MILF	-.045	.209**	.277***	.130*	.214**	-.106	.080	.155*	.139*	--
11. Illustrated	.119†	.067	.190**	.269**	.140*	.077	.139*	.089	.1278	.114

Note. $^{\dagger}p < .06$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

Table 8

Bivariate Correlations for Select Pornography Variables Among All Participants

	1	2	3	4	5	6	7	8
1. Porn use frequency	--							
2. Porn sex scripting	.188**	--						
3. Porn realism	.073	.230***	--					
4. Age of first unintentional porn exposure	-.191**	-.073	.074	--				
5. Age of first intentional porn exposure	-.309***	-.154*	.010	.707***	--			
6. Age of first regular porn use	-.186**	-.197**	.027	.432***	.726***	--		
7. Masturbation frequency while porn viewing	.410***	.088	-.004	-.165**	-.261***	-.242**	--	
8. Preference for aggressive porn	.235***	.312***	.096	-.135*	-.125*	-.151*	.103	--
9. Perception of porn as sex positive	.155*	.166**	.338***	.018	-.058	-.030	.078	.173**

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 9

Bivariate Correlations for Objectification and Social Media Variables Among All Participants

	1	2	3	4	5	6
1. Acceptance of objectification	--					
2. Cognitive objectification	.400***	--				
3. Objectification on social media	.697**	.285***	--			
4. Social media use frequency	.001	.111	-.070	--		
5. Dating app use frequency	.072	.173**	.050	.095	--	
6. Frequency of semi-nude photo sharing	.042	.111	.019	.240***	.162**	--
7. Frequency of genital photo sharing	-.065	.063	-.043	.188**	.154*	.563***

Note. *p < .05, **p < .01, ***p < .001

Table 10

Bivariate Correlations Between Sexual Aggression Measures and Select Study Variables Among All Participants and Among the Subsample of Participants with Sexual Experience

	1	2	3	4	5	6	7	8
1. ASBI Coerce Subscale	--	.630***	.262***	.093	.182*	.323***	.281***	.251**
2. Rape proclivity	.621***	--	.163*	-.022	.155*	.273***	.278***	.152*
3. Aggressive sex	.360**	.153*	--	.299***	.200**	.397***	-.033	.457**
4. Genital photo sharing	.064	-.075	.391***	--	.070	.322***	.075	.237**
5. Dating app frequency	.164**	.086	.210**	.154*	--	.149*	.044	.191**
6. Preference aggressive porn	.248***	.254***	.304***	.284***	.140*	--	.053	.373**
7. Porn realism	.336***	.293***	.048	.051	.029	.096	--	.252***
8. Porn sex scripting	.190**	.074	.571***	.340***	.180**	.312***	.230***	--

Note. *p < .05, **p < .01, ***p < .001. ASBI = Aggressive Sexual Behavior Inventory. Results for all participants are shown below the diagonal; results for participants with sexual experience are shown above the diagonal.

Table 11

Bivariate Correlations Between False Rape Belief Measures and Main Study Variables Among All Participants

	1	2	3	4	5	6
1. FRBS	--					
2. Percentage false rape accusations	.479***	--				
3. Porn use frequency	-.052	-.091	--			
4. Acceptance of objectification	.386***	.254***	.035	--		
5. Cognitive objectification	.186**	.286***	.102	.400***	--	
6. ASBI coercion	.034	.112	.105	.280***	.215***	--
7. Rape proclivity	.130*	.159*	.041	.388***	.249***	.621***

Note. *$p < .05$, **$p < .01$, ***$p < .001$. FRBS = False Rape Beliefs Scale

Table 12

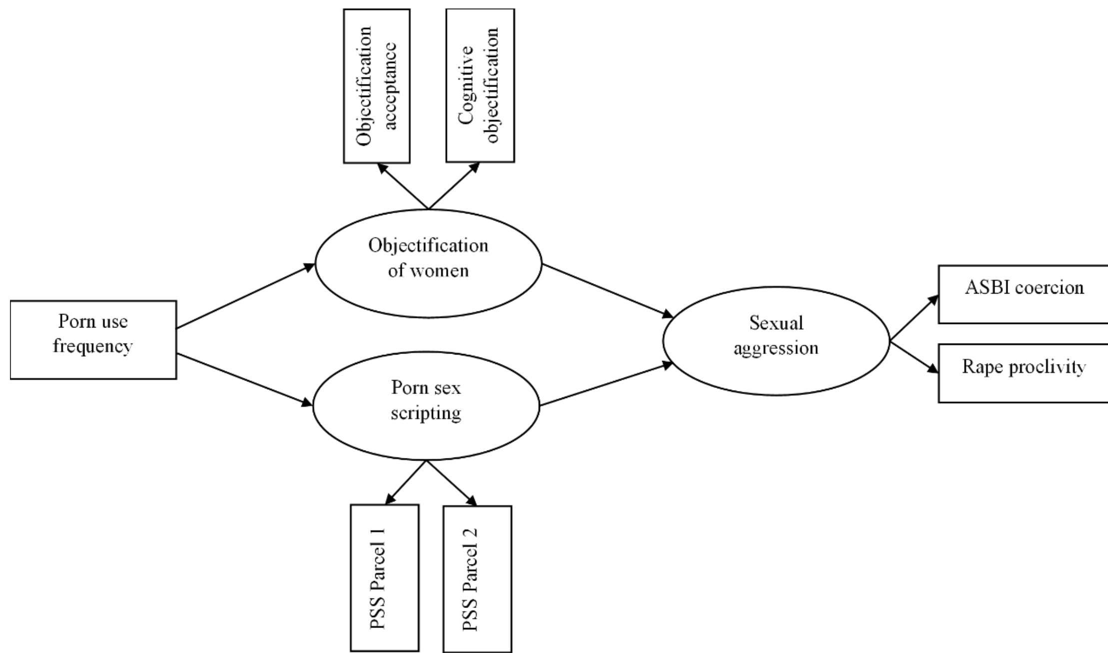
Summary of Fit Indices for Structural Equation Models Tested

	χ^2	p of χ^2	CFI	TLI	RMSEA	SRMR
Original model	18.43	.072	.98	.96	.06	.05
Alternative model 1	18.12	.053	.98	.95	.07	.05
Alternative model 2	18.39	.073	.98	.96	.06	.04
Alternative model 3	10.77	.463	1.0	1.0	.00	.03

Note. χ^2 = the value of the chi-square statistic; p of χ^2 = p-value of the chi-square statistic (values greater than .05 indicate good model fit); CFI = comparative fit index (values greater than .95 indicate good model fit); TLI = Tucker-Lewis index (values greater than .95 indicate good model fit); RMSEA = root mean square error of approximation (values smaller than .08 indicate good model fit); SRMR = standardized root mean square residual (values smaller than .08 indicate good model fit).

Figure 1

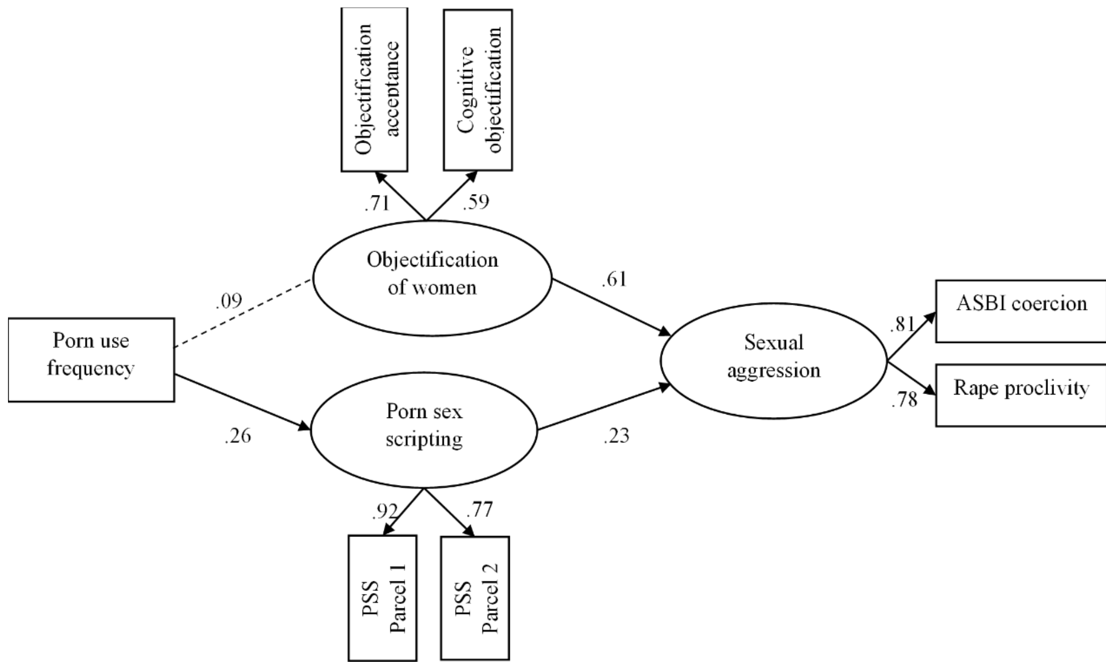
Proposed Structural Model



Note. PSS = Porn Sex Scripting. ASBI = Aggressive Sexual Behavior Inventory.

Figure 2

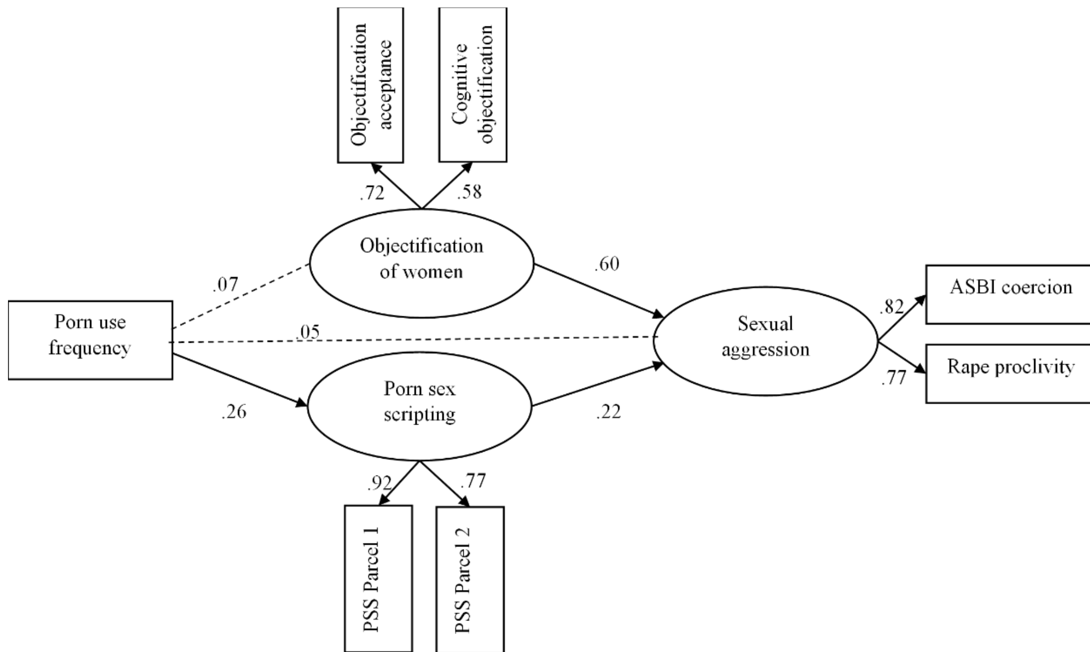
Structural Model with Standardized Regression Weights



Note. Solid lines represent statistically significant pathways. Dashed lines represent statistically non-significant pathways. PSS = Porn Sex Scripting. ASBI = Aggressive Sexual Behavior Inventory. The fit indices for this model are $\chi^2(11)= 18.43$, $p = .072$, CFI = .98, TLI = .96, RMSEA = .06, SRMR = .05.

Figure 3

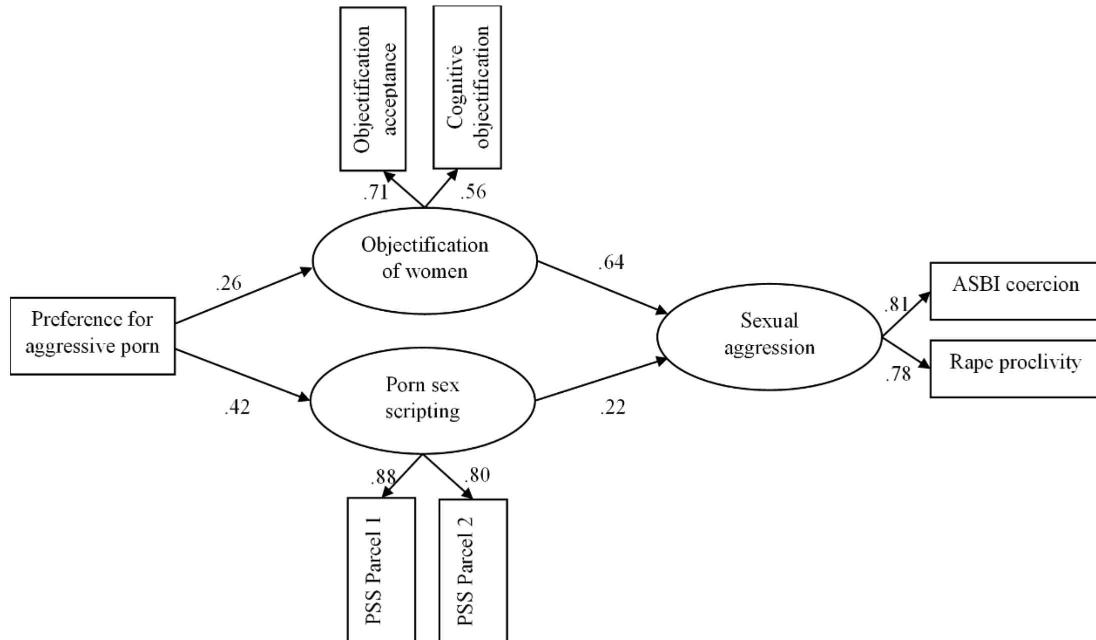
Structural Model with Standardized Regression Weights for Alternative Model 1



Note. Solid lines represent statistically significant pathways. Dashed lines represent statistically non-significant pathways. PSS = Porn Sex Scripting. ASBI = Aggressive Sexual Behavior Inventory. The fit indices for this model are $\chi^2(10) = 18.12$, $p = .053$, CFI = .98, TLI = .95, RMSEA = .07, SRMR = .05.

Figure 4

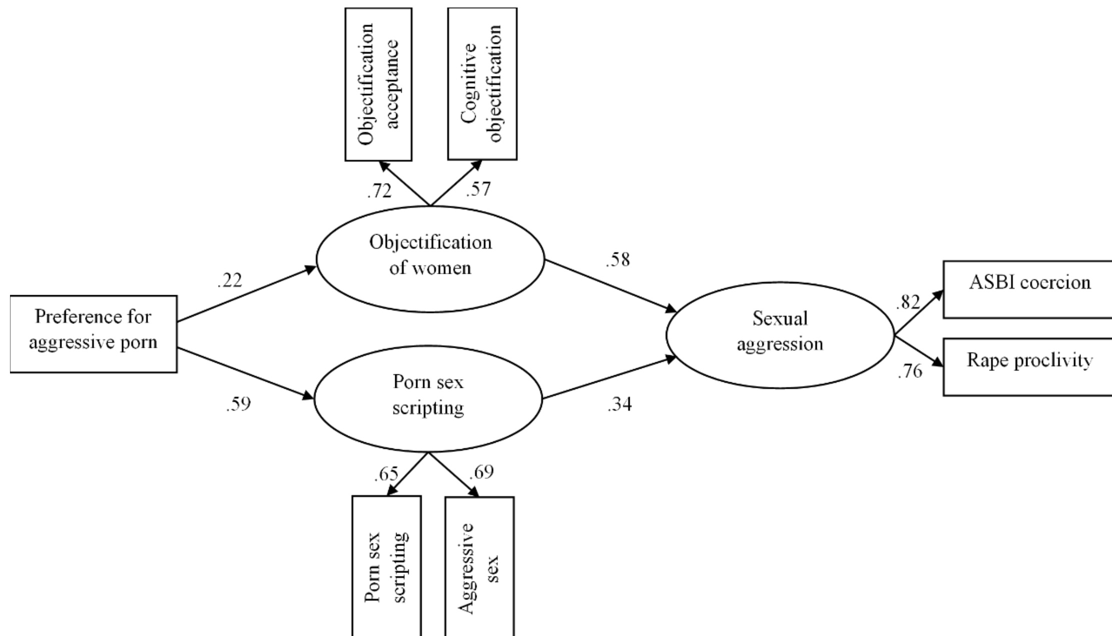
Structural Model with Standardized Regression Weights for Alternative Model 2



Note. Solid lines represent statistically significant pathways. PSS = Porn Sex Scripting. ASBI = Aggressive Sexual Behavior Inventory. The fit indices for this model are $\chi^2(11)$= 18.39, p = .073, CFI = .98, TLI = .96, RMSEA = .06, SRMR = .04.

Figure 5

Structural Model with Standardized Regression Weights for Alternative Model 3



Note. Solid lines represent statistically significant pathways. ASBI = Aggressive Sexual Behavior Inventory. The fit indices for this model are $\chi^2(11) = 10.77$, $p = .463$, CFI = 1.0, TLI = 1.0, RMSEA = .00, SRMR = .03.

Appendix A

Self-Screening Questions

Thank you for your interest in participating in this study on men's relationships and dating in the digital age. Before you can begin, please answer the three questions below. They are used to determine your eligibility for the survey.

Are you 18 years old or older?

- ○ Yes
- ○ No

Are you a cis-gender man? “Cis-gender man” means someone who was labeled male at birth and identifies as a man.

- ○ Yes
- ○ No

Are you heterosexual or sexually attracted to women?

- ○ Yes
- ○ No

Do you have a valid .edu email address? Amazon.com gift cards will only be sent to emails with an .edu domain.

- ○ Yes
- ○ No

Appendix B

Informed Consent Form

Eileen Zurbriggen – Department of Psychology – 1156 High Street Santa Cruz, CA 95064

CONSENT TO PARTICIPATE IN RESEARCH

Dear Participant,

You are invited to take part in a research study being conducted by Sarah Harsey and Dr. Eileen Zurbriggen from the department of Psychology at the University of California, Santa Cruz. Before deciding whether you would like to participate in the study, please read over this form.

Purpose of Study: *The purpose of this study is to learn more about men's experiences with dating, relationships, and sex, and about their beliefs and opinions related to these topics.*

Study Procedure: *If you agree to participate in this study, you will take an electronic survey. The survey includes questions about your personal relationships, media use (including sexually explicit media), attitudes about topics related to sex and relationships, and your own sexual preferences and behaviors. Some questions might reference difficult relationships, people, or experiences*

Time Required: *Completion of the study should take 1 hour. Please note that the survey must be completed in one sitting. The survey is anonymous, and as such you may not be able to save your responses to complete at a later time.*

Risks and/or Discomfort: *There is minimal anticipated risk associated with your participation in this study. However, some questions on the survey, such as ones that*

ask about your own sexual experiences, may cause you to feel discomfort, guilt, or embarrassment. ***You may discontinue your participation at any time and for any reason. You also have the right to skip any questions that you do not want to answer.*** *There are no right or wrong answers. Moreover, while researchers follow procedures to maintain your confidentiality, we cannot guarantee confidentiality of interception of data sent via the Internet by any third parties.*

Benefits: *Should you choose to participate, you will be providing the researchers with valuable information on men's dating and relationship experiences. You may also find it beneficial to reflect on your own attitudes and beliefs.*

Confidentiality: *The information that you provide in the study will be handled anonymously. Your answers are anonymous, which means that your identity cannot be linked to your responses on the survey. Even the researchers will have no way to link your name or email address to your actual responses. Your name will not be used in any report, published or otherwise. In addition, your anonymous responses will be stored on a secure server. Your anonymous responses will not be viewed by or made accessible to anyone other than the researchers conducting the study. We will retain your data after the immediate project is completed for possible use in future projects. This allows us to make maximal use of your data.*

Compensation and Costs: *You will be compensated with a $10 amazon.com electronic gift card for your participation in this study. This survey will ask you to enter the 5-digit code sent to you by researchers via email. It also requires you to enter a valid .edu email address in order to receive the $10 amazon.com gift card.* ***Failure to enter the code or enter a valid .edu email address may result in your survey being rejected.***

Right to Decline or Withdraw: *Your participation in this study is voluntary. You are free to participate in the study entirely, or you may decide to skip any questions that you do not want to answer. Even if you decide to take part in the study, you may change your mind at any time and quit the study. Your withdrawal or lack of participation will not penalize you in any way or result in a loss of benefits to which you are otherwise entitled.*

Further Questions: *If you have any questions or concerns regarding this research study, please contact Sarah Harsey at sharsey@ucsc.edu. You may also contact the supervising faculty member, Eileen Zurbriggen, at zurbrigg@ucsc.edu. Additionally, if you have any questions about your rights as a research participant, or in the event of a research-related injury, please contact the Office of Research Compliance Administration at the University of California at Santa Cruz at 831-459-1473 or at orca@ucsc.edu.*

Participant Agreement: *I have read over this consent form and understand what is being asked of me and what this study will require. By clicking "I agree to participate" below, I indicate my consent to participate in this study.*

- ○ I agree to participate
- ○ I do NOT agree to participate

Appendix C

Demographic Questions – Made for this study

How old are you? ______________________________

What is your gender identity?

- ○ Man
- ○ Woman
- ○ Trans Man
- ○ Trans Woman
- ○ Genderqueer
- ○ Non-binary
- ○ Agender
- ○ Not listed (please use box to enter your gender identity):

____

What is your sexual orientation?

- ○ Heterosexual or straight
- ○ Gay
- ○ Bisexual
- ○ Pansexual
- ○ Asexual
- ○ Queer
- ○ Not listed (please use the box to enter your sexual orientation):

____

What is your racial or ethnic identity?

- ○ African American or Black
- ○ Biracial or multiracial
- ○ Latino, Hispanic, or Chicano
- ○ East Asian
- ○ Middle Eastern or North African
- ○ Native American or Native Alaskan
- ○ Pacific Islander
- ○ South Asian
- ○ White or Caucasian
- ○ Not listed (please use box to enter your racial or ethnic identity):

____

What is your religious orientation?

- ○ Buddhist
- ○ Christian
- ○ Hindu
- ○ Jewish
- ○ Muslim
- ○ Sikh
- ○ None
- ○ Not listed (please use box to enter your religious orientation):

____

How religious are you?

- ○ Not at all religious
- ○ A little bit religious
- ○ Moderately religious
- ○ Very religious

What is your political affiliation?

- ○ Democrat Party
- ○ Green Party
- ○ Independent Party
- ○ Libertarian Party
- ○ Republican Party
- ○ Not listed (please use box to enter your political affiliation): ____

In general, how would you describe your political beliefs?

- ○ Very conservative
- ○ Conservative
- ○ Moderate
- ○ Liberal
- ○ Very liberal
- ○ Not listed (please use box to enter your political beliefs): ____

If you are a student, what is your current year in school?

- ○ Frosh
- ○ Sophomore
- ○ Junior
- ○ Senior
- ○ Graduate Student
- ○ I am not a student

Appendix D

Pornography Items – All items in this appendix are made for this study, with the exception of Peter and Valkenberg's (2006) perceived pornography realism items, denoted in this appendix with asterisks

The questions in this section will ask you about pornography. Many people use pornography, and it often plays an important part in their sexuality. Because technology has made pornography more diverse and accessible, we are interested in people's experiences with it.

For the purposes of this study, we are defining pornography as (1) pictures and/or videos with naked people portrayed sexually, (2) pictures and/or videos of people engaging in sex or masturbation, or (3) written or audio material describing people engaging in sex or masturbation. Having sex includes vaginal, anal, and oral penetration.

Despite its popularity, we know pornography can still be a sensitive topic for some people. We assure you your responses are anonymous.

At what age did you first **accidentally** or **unintentionally** see any type of pornographic material?

At what age did you first **intentionally** look at any type of pornographic material?

At what age did you start to regularly view pornography?

In general, how often do you watch or look at pornography?

- Never
- About once a year
- A few times a year
- Once a month
- A few times a month
- 1-2 days a week
- 3-5 days a week
- Daily or almost daily

When you look at pornography, how often do you masturbate?

- Never
- Rarely
- Sometimes
- Often
- Every time or nearly every time

How often do you look at pornography **without** masturbating?

- Never
- Rarely
- Sometimes
- Often
- Every time or nearly every time

How often do you masturbate **without** looking at pornography?

- Never
- Rarely
- Sometimes
- Often
- Every time or nearly every time

The next several questions will ask you about your opinions of pornography. Please read each statement carefully and indicate how much you agree with each one.

Pornography has had a positive effect on my sexuality

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

---

*I find pornography to be realistic

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

---

*Sex in pornography is similar to sex in real life

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

---

*You can learn a lot about sex by watching pornography

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

---

*By watching pornography, I learn how to act and what to do when having sex

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

What is your preferred genre or type of pornography? Please describe it here. You can use explicit language in your description.

What keywords or search terms do you use when you look for porn online? You can use explicit language.

Sex positivity is the belief that all consensual expressions of sexuality are valid. Pornography can be an important issue in sex positivity. Please answer the questions below about this topic; for each statement, please indicate your agreement.

Are you familiar with the term “sex positive” or “sex positivity”?

- Yes
- No
- Not sure

I consider myself to be sex positive

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Someone who is sex positive is probably more open to different kinds of sexual experiences

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Pornography is generally sex positive

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Pornography can help people become more sex positive

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

The following questions will ask you about your pornography preferences. Read each statement and indicate how much you agree with each one.

I prefer pornography that is more romantic or gentle

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

I prefer pornography that is more rough or aggressive

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

I prefer pornography that features taboo themes like incest

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I prefer pornography that features taboo themes like rape

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I prefer pornography that is more kinky

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I prefer pornography that is more vanilla (i.e., not kinky)

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

I prefer pornography that features BDSM

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

I prefer pornography that is light-hearted or flirty

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

I prefer pornography that features women who are younger (for example: teens)

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

I prefer pornography that features women who are older (for example: MILF)

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

I prefer pornography that is illustrated or animated, like hentai or erotic comics

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

Have you ever seen something in pornography (a position, act, scene, etc.) that you thought was **exceptionally exciting**, **arousing, or you just liked a lot**? Please describe it here. You can use explicit language in your description.

Have you ever seen something in pornography (a position, act, scene, etc.) that you thought was **disturbing**, **made you upset, or you just didn't find enjoyable at all**? Please describe it here. You can use explicit language in your description.

Appendix E

Porn Sex Scripting – Quantitative Items from Sun et al. (2016)

How many times have you ever role-played a scene you saw in pornography with a sexual partner?

- ○ Never
- ○ 1 or 2 times
- ○ 3-10 times
- ○ More than 10 times

How many times have you ever asked a sex partner to try something that you saw in pornography, such as a new sexual activity or position?

- ○ Never
- ○ 1 or 2 times
- ○ 3-10 times
- ○ More than 10 times

How many times have you seen something in pornography that you later tried while having sex?

- ○ Never
- ○ 1 or 2 times
- ○ 3-10 times
- ○ More than 10 times

On average, how often do you watch pornography when you are having sex with a partner?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every time or nearly every time

How frequently do you get new ideas about positions, specific sex acts, or role-playing scenarios from watching pornography?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every time or nearly every time

Appendix F

Porn Sex Scripting – Descriptive items made for this study

Briefly describe something (like a scenario or specific act) you saw in pornography that you would **like to try** or **have actually tried** while having sex. You can use explicit language.

Listed below are a series of sexual experiences. Please read the statements carefully and indicate how frequently you have ever been involved with each one.

I have made someone orgasm during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have made eye contact during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

*I have pulled someone's hair during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have stopped sex when a sexual partner has asked me to stop

- Never
- Rarely
- Sometimes
- Often
- Very frequently

---

*I have called someone degrading or dirty names during sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

---

*I have spanked someone during sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

---

*I have slapped someone during sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

---

*I have choked someone or put my hands around their throat during sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have kissed someone during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have ignored requests from a sexual partner to stop or slow down during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have given someone compliments during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have held someone's hand gently during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have held or pinned someone down during sex

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

---

*I have pinched someone during sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have removed a condom during sex without the other person knowing

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have rubbed my hands on someone's body during sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

---

*I have made someone gag during sex (with a penis, fingers, or sex toy)

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have stroked someone's hair during sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

Appendix G

Acceptance of Objectification of Women

In this section of the survey, we are interested in your opinions about women's appearances and bodies, which can be important factors in dating for some heterosexual men. The statements here reflect some common beliefs people may have. Please read each statement carefully and rate your agreement with each one.

Items (8) from Ward (2002)

An attractive woman should expect sexual advances and should learn how to handle them

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Women should be more concerned about their appearance than men

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Using her body and looks is the best way for a woman to attract a man

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Women should spend a lot of time trying to be pretty; no one wants to date a woman who has "let herself go"

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

There's nothing wrong with men whistling at shapely women

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

It bothers me when a man is interested in a woman only if she is pretty [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

There is nothing wrong with men being primarily interested in a woman's body

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Being with an attractive woman gives a man prestige

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Items (5) from Wright and Tokunaga (2015)

Men are “hardwired” to want to look at women’s bodies

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

It is okay to check out an attractive woman at a bar or dance club

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

It is natural for a man to admire pretty women and look at their bodies, even if he has a girlfriend

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

When women are out at a club, it is okay to think of them as “eye candy”

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

It is okay to admire women’s bodies as they pass on the street

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Appendix H

Cognitive Objectification Items (8) – Modified Scale by McKinley and Hyde (1996)

I rarely think about how women look [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I think it is more important that women's clothes are comfortable than whether they look good on them [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I think more about the things women say than how they look [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I rarely compare women on their looks [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

During the day I think about the way women's bodies look many times

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I often think about whether the clothes women wear make them look good

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I rarely think about how women look to other people [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

I am more concerned with what women’s bodies can do and achieve than how they look [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Appendix I

Objectification of Women on Social Media – Made for this Study

Commenting on women's bodies when they post revealing pictures of themselves on social media is harmless

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Women who post selfies on social media are hoping to get compliments on how they look

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Many women post sexy or revealing pictures of their bodies in order to get attention from men

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

It's natural for men to masturbate to sexy or revealing pictures that women post to social media

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Women shouldn't complain when men compliment their appearance on social media

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Appendix J

Modified items of the ASBI

Items on the Seduce Subscale (7)

I have played hard to get in order to get someone interested in me sexually

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

When I want to get someone in the mood I try to flirt or sweet talk them

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have taken someone to a romantic spot in hopes that they would sleep with me

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have put extra effort into my appearance in order to entice someone to have sex with me

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have bought someone expensive gifts hoping that would make them more sexually receptive to me

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

When I want to have sex with someone, I tell them what a wonderful lover they are

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have flirted with other people in order to get my partner to have sex with me

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

Items on the Coerce Subscale

I have told someone I was making out with that they could not stop and leave me frustrated

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very frequently

I have dated someone younger than me because I thought they would be more willing to give me what I wanted sexually

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have warned someone that they could get hurt if they resisted me so they should relax and enjoy it

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have called someone an angry or rude name and pushed them away when they would not have sex with me

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have belittled or insulted someone in order to get them to sleep with me

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have told someone that their refusal to have sex with me was changing the way I felt about them

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have said that I would leave or end a relationship if my partner would not have sex with me

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have told someone to calm down after they got upset at me for trying to have sex with them

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have given someone drugs or alcohol so that they would feel obligated to do me a sexual favor

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have promised someone that I would not harm them if they did everything that I told them to

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have gotten a little drunk and made someone I was with have sex with me

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have told someone that I wanted to come into their home to increase the chances of us having sex

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have gripped someone tightly and given them an angry look when they were not giving me the sexual response I wanted

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have given someone the silent treatment when they would not have sex with me

- Never
- Rarely
- Sometimes
- Often
- Very frequently

I have gotten someone drunk or high so they would be less able to resist my advances

- Never
- Rarely
- Sometimes
- Often
- Very frequently

Appendix K

Rape Proclivity

Bohner et al. (1998; 2006), modified

This section of the survey presents several sexual scenarios. After reading each scenario, you will be asked a few questions about how you might respond if you were to experience the scenarios in real life.

Scenario 1: You have gone out a few times with a woman you met recently. One weekend you go to a film together and then back to your place. You have a few beers, listen to music, and make out. At a certain point your friend realizes she has had too much to drink to be able to drive home. You say she can stay over with you, no problem. You are keen to grab this opportunity and sleep with her. She objects, saying you are rushing her and anyway she is too drunk. You don't let that put you off, you lie down on her and just do it.

How sexually aroused would you be in this situation?

- ○ Not aroused at all
- ○ A tiny bit aroused
- ○ Somewhat aroused
- ○ Moderately aroused
- ○ Highly aroused

If you were in this situation, how likely is it that you would have acted in a similar way?

- ○ Not likely at all
- ○ Very unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Definitely likely

How much would you have enjoyed getting your way in this situation?

- ○ Not enjoyed at all
- ○ Slightly enjoyed
- ○ Somewhat enjoyed
- ○ Moderately enjoyed
- ○ Very much enjoyed

Scenario 2: Imagine you are a firm's personnel manager. You get on especially well with a new female member of staff. At the end of a busy week, you invite her out to dinner and take her home afterward. As you want to spend some more time in her company, you suggest she might ask you in for a coffee. Next to her on the sofa, you start touching her and kissing her. She tries to move out of reach, but you tell her that her career prospects stand to be enhanced by her being on good terms with her boss. In due course, she seems to have accepted this, and she doesn't resist when you have sex with her.

How sexually aroused would you be in this situation?

- ○ Not aroused at all
- ○ A tiny bit aroused
- ○ Somewhat aroused
- ○ Moderately aroused
- ○ Highly aroused

If you were in this situation, how likely is it that you would have acted in a similar way?

- ○ Not likely at all
- ○ Very unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Definitely likely

How much would you have enjoyed getting your way in this situation?

- ○ Not enjoyed at all
- ○ Slightly enjoyed
- ○ Somewhat enjoyed
- ○ Moderately enjoyed
- ○ Very much enjoyed

Scenario 3: A while back, you met an attractive woman in a club and you would like to take things a bit further with her. Friends of yours have a vacation home so you invite her to share a weekend there. You have a great time together. On the last evening you are ready to sleep with her, but she says no. You try to persuade her, insisting it's all part of a nice weekend. You invited her, after all, and she did accept.

She repeats that she doesn't want to have sex but then puts up hardly any resistance when you simply undress her and have sex with her.

How sexually aroused would you be in this situation?

- ○ Not aroused at all
- ○ A tiny bit aroused
- ○ Somewhat aroused
- ○ Moderately aroused
- ○ Highly aroused

If you were in this situation, how likely is it that you would have acted in a similar way?

- ○ Not likely at all
- ○ Very unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Definitely likely

How much would you have enjoyed getting your way in this situation?

- ○ Not enjoyed at all
- ○ Slightly enjoyed
- ○ Somewhat enjoyed
- ○ Moderately enjoyed
- ○ Very much enjoyed

Scenario 4: At a party, you get acquainted with a good-looking, interesting woman. The two of you talk, dance, and flirt with each other. Later, you take her home in your car, and she invites you into her apartment. You both sit down on the floor, and your new acquaintance starts kissing and caressing you. You willingly comply, and now you want more. When you start trying to take off her clothes in order to sleep with her, she suddenly pushes you away and says that she'd rather stop now. Her resistance incites you even more, and using some force you press the woman down to the floor, restrain her and then penetrate her.

How sexually aroused would you be in this situation?

- ○ Not aroused at all
- ○ A tiny bit aroused
- ○ Somewhat aroused
- ○ Moderately aroused
- ○ Highly aroused

If you were in this situation, how likely is it that you would have acted in a similar way?

- ○ Not likely at all
- ○ Very unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Definitely likely

How much would you have enjoyed getting your way in this situation?

- ○ Not enjoyed at all
- ○ Slightly enjoyed
- ○ Somewhat enjoyed
- ○ Moderately enjoyed
- ○ Very much enjoyed

Appendix L

Relationships and Sexual Experience

The questions on this page will ask you about your relationships with others. Please respond to each question to the best of your ability.

How many close **male** friends do you have? Here, you can define "close" in any way that makes sense to you. You can also include family members in your estimated number.

____

How many close **fe**male friends do you have? Here, you can define "close" in any way that makes sense to you. You can also include family members in your estimated number.

____

Which statement best describes your platonic (non-romantic) friendships?

○ I have more male friends than female friends

○ I have more female friends than male friends

○ I have about the same number of male and female friends

○ None of these options describe my friendships (please use box to describe a more accurate representation of your friendships)

____

What is your current relationship status?

○ Single and not dating
○ Single and dating
○ In a relationship (not married or engaged)
○ Engaged
○ Married
○ Not listed (please use box to enter your relationship status)

____

Have you ever been in a romantic relationship?

- ○ Yes
- ○ No
- ○ Not sure

How many romantic relationships have you had **before** the age of 18? (If you have not had any relationships before the age of 18, please enter "0")

____

How many romantic relationships have you had **after** the age of 18? (If you have not had any relationships after the age of 18, please enter "0")

____

How satisfied are you with your overall **quality** of dating and romantic experiences?

- ○ Extremely dissatisfied
- ○ Moderately dissatisfied
- ○ Slightly dissatisfied
- ○ Neither satisfied nor dissatisfied
- ○ Slightly satisfied
- ○ Moderately satisfied
- ○ Extremely satisfied

How satisfied are you with your overall **number** of dating and romantic experiences?

- ○ Extremely dissatisfied
- ○ Moderately dissatisfied
- ○ Slightly dissatisfied
- ○ Neither satisfied nor dissatisfied
- ○ Slightly satisfied
- ○ Moderately satisfied
- ○ Extremely satisfied

Would you prefer to have:

- ○ More dating and romantic experiences
- ○ Fewer dating and romantic experiences
- ○ Neither - I am satisfied with my number of dating and romantic experiences

UCLA Loneliness Scale (Version 3) (20 items) (Russell, 1996)

A big part of relationships is being able to feel connected with other people. The questions on this page will ask you about your connections with others.

Please read each statement below carefully and indicate how often you feel the statements reflect your experiences.

How often do you feel that you are "in tune" with the people around you? [reverse-coded]

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel that you lack companionship?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel that there is no one you can turn to?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel alone?

- Never
- Rarely
- Sometimes
- Often

How often do you feel part of a group of friends? [reverse-coded]

- Never
- Rarely
- Sometimes
- Often

How often do you feel that you have a lot in common with the people around you? [reverse-coded]

- Never
- Rarely
- Sometimes
- Often

How often do you feel that you are no longer close to anyone?

- Never
- Rarely
- Sometimes
- Often

How often do you feel that your interests and ideas are not shared by those around you?

- Never
- Rarely
- Sometimes
- Often

How often do you feel outgoing and friendly? [reverse-coded]

- Never
- Rarely
- Sometimes
- Often

How often do you feel close to people? [reverse-coded]

- Never
- Rarely
- Sometimes
- Often

How often do you feel left out?

- Never
- Rarely
- Sometimes
- Often

How often do you feel that your relationships with others are not meaningful?

- Never
- Rarely
- Sometimes
- Often

How often do you feel that no one really knows you well?

- Never
- Rarely
- Sometimes
- Often

How often do you feel isolated from others?

- Never
- Rarely
- Sometimes
- Often

How often do you feel you can find companionship when you want it? [reverse-coded]

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel that there are people who really understand you? [reverse-coded]

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel shy?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel that people are around you but not with you?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel that there are people you can talk to? [reverse-coded]

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

How often do you feel that there are people you can turn to? [reverse-coded]

- Never
- Rarely
- Sometimes
- Often

Appendix M

Beliefs about False Rape Accusations – Made for this Study

In this section, we want to ask about a fear that some heterosexual men may have. False rape accusations may contribute to men's anxiety around dating and hooking up. The questions on this page ask you to share your beliefs about false rape accusations and your experiences with them.

Please read each of the following statements and questions carefully. Indicate your agreement with each statement and your responses to each question.

It is easy for a woman to falsely accuse a man of sexual assault

- ○ Strongly disagree
- ○ Disagree
- ○ Slightly disagree
- ○ Neither agree nor disagree
- ○ Slightly agree
- ○ Agree
- ○ Strongly agree

Most men who are accused of sexual assault are guilty [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Slightly disagree
- ○ Neither agree nor disagree
- ○ Slightly agree
- ○ Agree
- ○ Strongly agree

False rape allegations have ruined a lot of men's lives

- ○ Strongly disagree
- ○ Disagree
- ○ Slightly disagree
- ○ Neither agree nor disagree
- ○ Slightly agree
- ○ Agree
- ○ Strongly agree

People are quick to assume that women's accusations of sexual assault are true

- ○ Strongly disagree
- ○ Disagree
- ○ Slightly disagree
- ○ Neither agree nor disagree
- ○ Slightly agree
- ○ Agree
- ○ Strongly agree

There should be more protections for men who have been accused of sexual assault

- ○ Strongly disagree
- ○ Disagree
- ○ Slightly disagree
- ○ Neither agree nor disagree
- ○ Slightly agree
- ○ Agree
- ○ Strongly agree

Men who have been accused of sexual assault are usually treated fairly [reverse-coded]

- ○ Strongly disagree
- ○ Disagree
- ○ Slightly disagree
- ○ Neither agree nor disagree
- ○ Slightly agree
- ○ Agree
- ○ Strongly agree

How much do you worry about being falsely accused of rape?

- ○ Not at all
- ○ A little
- ○ A moderate amount
- ○ A lot
- ○ A great deal

How much do you worry that someone you know will be falsely accused of rape?

- ○ Not at all
- ○ A little
- ○ A moderate amount
- ○ A lot
- ○ A great deal

In your opinion, what percentage of all rape accusations are probably false? Please enter a number between 0% and 100%.

____

In your opinion, what percentage of women who have accused a man of rape are exaggerating or lying about being raped? Please enter a number between 0% and 100%.

____

Have you ever been accused of any kind of sexual assault or behaving inappropriately in a sexual way? This can be a formal accusation (like a report made to authorities) or an informal accusation (like an accusation you heard through gossip, social media, conversations with others, or confrontations).

- ○ Yes
- ○ No
- ○ Not sure

What were you accused of? Describe it briefly here. Please do not include any names or other identifying information in your response.

____

Was this accusation false or inaccurate in some way?

- ○ Yes
- ○ No
- ○ Not sure

How accurate or true was this accusation?

- ○ Not at all true or accurate
- ○ Not entirely true or accurate
- ○ Somewhat true or accurate
- ○ Very true or accurate

Did you face any consequences or experience any negative effects due to this accusation?

- ○ Yes
- ○ No
- ○ Not sure

Appendix N

Social Media Use, Dating Apps, and Sexting – Items made for this study

Technology has influenced the way people interact in important ways, including how people date and hook up. This series of questions will ask you about your experience using apps and social media for dating or hooking up. Some questions will also ask for your opinion on technology's role in dating and hooking up.

In general, how much time do you spend on social media apps like TikTok, Instagram, Snapchat, Facebook, Twitter, or Whatsapp?

- ○ Never
- ○ 1 or 2 hours a month or fewer
- ○ 1 hour a week
- ○ 2 to 4 hours a week
- ○ 5 to 6 hours a week
- ○ 1 hour a day
- ○ 2 to 3 hours a day
- ○ 4 or more hours per day

Have you ever used a dating or hookup app or website? Examples include Tinder, Bumble, Hinge, happn, Coffee Meets Bagel, OkCupid, Match, AdultFriendFinder?

- ○ Yes
- ○ No
- ○ Not sure

Currently, how often do you use dating or hookup apps or websites like Tinder, Bumble, Hinge, happn, Coffee Meets Bagel, OkCupid, Match, or AdultFriendFinder?

- ○ Not currently using these apps or websites
- ○ 1 or 2 hours a month or fewer
- ○ 1 hour a week
- ○ 2 to 4 hours a week
- ○ 5 to 6 hours a week
- ○ 1 hour a day
- ○ 2 to 3 hours a day
- ○ 4 or more hours a day

The next several questions will ask you about your opinions about the effects of technology (such as texting, social media, and dating apps) on dating. Please read each statement carefully and indicate how much you agree with each one.

Technology has made dating easier

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Technology has made dating more exciting

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Technology has made dating more superficial

- ○ Strongly disagree
- ○ Disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Technology has made dating riskier

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

Technology has changed dating for the worse

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

Technology has changed dating for the better

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

Technology has made dating more complicated

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

The following questions will now ask you about how often you use social media (including dating apps) to do certain things. Please read each question carefully.

How often have you used texting or any form of social media to flirt with someone you were interested in?

- Never
- Rarely
- Sometimes
- Often

How often have you used texting or any form of social media to set up a date?

- Never
- Rarely
- Sometimes
- Often

How often have you used texting or any form of social media to send someone you were interested in a selfie (a picture of your face)?

- Never
- Rarely
- Sometimes
- Often

How often have you used texting or any form of social media to send someone you were interested in a semi-nude photo of yourself (for example, shirtless but no genitals showing)?

- Never
- Rarely
- Sometimes
- Often

How often have you used texting or any form of social media to send someone you were interested in a photo of your genitals?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often

If you have sent someone a picture of your genitals, how often has the recipient responded **positively?**

- ○ 0 times
- ○ 1 or 2 times
- ○ 3 or more times
- ○ I have never sent someone a picture of my genitals

If you have sent someone a picture of your genitals, how often has the recipient responded **negatively?**

- ○ 0 times
- ○ 1 or 2 times
- ○ 3 or more times
- ○ I have never sent someone a picture of my genitals

If you have sent someone a picture of your genitals, how often has the recipient **not responded at all?**

- ○ 0 times
- ○ 1 or 2 times
- ○ 3 or more times
- ○ I have never sent someone a picture of my genitals

Have you ever sent an unsolicited dick pic? (E.g., a picture of your genitals that you sent without the recipient requesting one first.)

- ○ Yes
- ○ No
- ○ Not sure

About how many times have you sent an unsolicited dick pic?

- ○ One time
- ○ 2 or 3 times
- ○ 4 or more times

Appendix O

Quality Check Items

It is very important that we include responses only from people who were able to answer the questions in the survey honestly. ***Please tell us how honest you were able to be while completing this survey.*** *(You will still be able to receive the amazon.com gift card regardless of your response to this question and the others on this page; remember, your responses here are anonymous.)*

- ○ Not honest at all
- ○ Not very honest
- ○ Somewhat honest
- ○ Very honest
- ○ Completely honest

There are often some distractions during online studies (other people, the Internet, cell phones, music, etc.). Please indicate how much attention you paid while responding to the questions on this survey.

- ○ Almost no attention
- ○ Very little attention
- ○ Some attention
- ○ Quite a lot of attention
- ○ My full attention

In your honest opinion, should we use your data in our analyses?

- ○ Yes
- ○ No
- ○ Not sure

Appendix P

Debriefing Form

Thank you for your participation! Please read this debriefing form carefully.

Now that the study is over, we'd like to tell you a bit more about the research you contributed to. We are interested in looking at how men's use of sexually explicit media, beliefs about women, and certain sexual practices are associated with sexual aggression. More specifically, we want to explore how some types of sexually explicit media are related to men's objectifying beliefs about women, and how objectification is related to using sexual aggression. If you are interested in viewing the results of this study, the project summary will be made available on the graduate student investigator's UCSC profile once data collection and analysis is complete: http://psychology.ucsc.edu/about/people/singleton.php?&singleton=true&cruz_id=sharsey.

We ask that you assist in our research efforts by NOT sharing any information regarding the nature of this study to others. As data collection for this research is still in progress, we would like to prevent any future participants from having prior knowledge of the study to avoid compromising the data. If for some reason you were to share your experience participating, you can say that you took part in a study about dating in the digital era. As previously discussed prior to the start of the study, the responses you provided are completely anonymous and will not be linked to you in any way. We would like to thank you again for your contributions to this project. We know that sharing sensitive information can sometimes feel uncomfortable; however, information like this greatly helps advance scientific knowledge and can shape our understanding of important topics. We are very grateful for your participation in this process – we could not do it without you.

Finally, we do not expect that you will experience any adverse effects from your participation and believe that we have taken several measures to prevent this from occurring. However, if you experience any discomfort because of this study, please contact the graduate student investigator, Sarah Harsey, at sharsey@ucsc.edu. You may also contact the faculty member supervising this work, Dr. Eileen Zurbriggen, at zurbrigg@ucsc.edu, or the Office of Research Compliance Administration at the University of California at Santa Cruz (831-459-1473, orca@ucsc.edu) if you have any concerns about the study. If you are a UCSC student, you may also contact the following campus resources if you feel as though you may benefit from additional support: UCSC Counseling & Psychological Services (CAPS) - counseling sessions, crisis support, substance use: (831) 459-2628, https://caps.ucsc.edu/index.html.

UCSC Campus Advocacy, Resources, & Education (CARE) - free advocacy and support for people who have experienced sexual assault, dating/domestic violence, and stalking: (831) 502-2273, care@ucsc.edu, https://care.ucsc.edu/index.html. If you are a student at another institution, your university or college may offer psychological support services. If you are not a student at all, there are national resources available to you that you might find helpful: National Alliance on Mental Illness (NAMI) helpline - free peer-support service for people struggling with mental health: 1-800-950-NAMI (6264), https://www.nami.org/help; crisis text line: text NAMI to 741-741

National Sexual Assault Online Hotline (RAINN) - free support, information, referals, and resources for people who have experienced sexual violence: https://rainn.org/about-national-sexual-assault-online-hotline

Please click the arrow button at the bottom of this page to access the link to the contact information survey. You MUST complete this contact information survey in order to receive an electronic gift card from amazon.com.

Appendix Q

Contact Information Questionnaire

This is the contact information survey for Men's Relationships and Dating in the Digital Age. In order to receive a $10 amazon.com electronic gift card for your participation, you must fill out this survey and click the arrow below when finished. ***Please allow 3-5 business days for the research team to process and email your amazon.com gift card.***

Please note that your responses on the survey you just took are completely separate from your responses here.

First, please complete this Captcha verification. This helps protect against spam.

[Captcha task provided by Qualtrics]

In the email you were sent containing a link to this survey, you were also given a random 5-digit code. Please enter this code here.

____

Please enter your first name:

____

Please enter your .edu email address (Amazon.com gift cards will only be sent to emails with an .edu domain). You will receive the electronic gift card at the .edu email address you list here:

____

Appendix R

R Code Syntax with Lavaan Package for SEM Evaluation

Original Model

```
model <- '
# measurement model
Objectification =~ ObjAccept + ObjCognitive
SexScripting =~ Parcel2_Algorithm + Parcel1_Algorithm
SexAggression =~ ASBI_Coerce + RP
# regressions
Objectification ~ a*Porn_GeneralFreq
SexScripting ~ b*Porn_GeneralFreq
SexAggression ~ c*Objectification + d*SexScripting
#indirect effects
IE1 := a*c
IE2 := b*d
TIE := IE1 + IE2
'
fit <- sem(model, data=dataset)
summary(fit, fit.measures=T)
standardizedSolution(fit)
```

Alternative Model #1

```
model <- '
# measurement model
Objectification =~ ObjAccept + ObjCognitive
SexScripting =~ Parcel2_Algorithm + Parcel1_Algorithm
SexAggression =~ ASBI_Coerce + RP
# regressions
Objectification ~ a*Porn_GeneralFreq
SexScripting ~ b*Porn_GeneralFreq
SexAggression ~ c*Objectification + d*SexScripting
SexAggression ~ Porn_GeneralFreq
#indirect effects
IE1 := a*c
IE2 := b*d
TIE := IE1 + IE2
'
fit <- sem(model, data=dataset)
summary(fit, fit.measures=T)
standardizedSolution(fit)
```

Alternative Model #2

```
model <- '
# measurement model
Objectification =~ ObjAccept + ObjCognitive
SexScripting =~ Parcel2_Algorithm + Parcel1_Algorithm
SexAggression =~ ASBI_Coerce + RP
# regressions
Objectification ~ a*PornAggressive
SexScripting ~ b*PornAggressive
SexAggression ~ c*Objectification + d*SexScripting
#indirect effects
IE1 := a*c
IE2 := b*d
TIE := IE1 + IE2
'
fit <- sem(model, data=dataset)
summary(fit, fit.measures=T)
standardizedSolution(fit)
```

Alternative Model 3

```
model <- '
# measurement model
Objectification =~ ObjAccept + ObjCognitive
SexScripting =~ PornScripting + AggressiveSex
SexAggression =~ ASBI_Coerce + RP
# regressions
Objectification ~ a*PornAggressive
SexScripting ~ b*PornAggressive
SexAggression ~ c*Objectification + d*SexScripting
#indirect effects
IE1 := a*c
IE2 := b*d
TIE := IE1 + IE2
'
fit <- sem(model, data=dataset)
summary(fit, fit.measures=T)
standardizedSolution(fit)
```

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