

THE ROLE OF ANONYMITY IN THE EFFECTS OF INADVERTENT EXPOSURE TO ONLINE PORNOGRAPHY AMONG YOUNG ADULT MALES

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We investigated how the sexist attitudes of young adult males were affected when they were inadvertently exposed to online pornography, and the role of the sense of anonymity in subsequent selection by these individuals of sexually explicit material. Participants were 84 male university students. Results showed that participants were more likely to pursue extreme pornography when they felt anonymous, as compared with situations in which they did not feel anonymous. This tendency was especially apparent for those exposed for 10 seconds to sexual online pop-up commercials that include pornographic content. The results also showed that inadvertent exposure to such sexual online pop-up commercials, coupled with feelings of anonymity, could increase participants' sexist attitudes toward women. The implications of these findings for future research are discussed.

Keywords: inadvertent exposure to pornography, sexual online pop-up commercial, online pornography, hostile sexism, anonymity.

A number of researchers have recently conducted studies in which they have focused on the issue of inadvertent exposure to online pornography (Mitchell, Finkelhor, & Wolak, 2003; Shim, Lee, & Paul, 2007; Wolak, Mitchell, & Finkelhor, 2007). According to Mitchell et al., *inadvertent exposure to online pornography* is a phenomenon whereby people, "without seeking or expecting

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sexual materials, are exposed to pictures of naked people or people having sex, when doing online searches, surfing websites, and opening email or email links” (p. 337). Wolak et al. suggested that most of the exposure to online pornography is essentially unwanted; among the participants in their study, 42% were Internet users aged between 10 and 17 years of age, of whom 66% experienced inadvertent exposure. In another study, Fallows (2003) found that people aged between 18 and 29 years tended to be more tolerant of email spam, including sexually explicit material, compared with those who were older.

Most researchers of inadvertent exposure of adolescents to online pornography have focused on identifying vulnerable adolescents who are likely to be affected by the exposure (Shim et al., 2007; Wolak et al., 2007). Adolescents with depression, who have experienced interpersonal victimization, and/or have delinquent tendencies, are more likely to respond to inadvertent online pornography by downloading pornographic images than are adolescents without these conditions (Wolak et al., 2007). College students who possess more antisocial and/or erotophilic personality traits than their peers are known to be more likely to expose themselves to inadvertently discovered online pornography (Shim et al., 2007). In a recent study, Mitchell, Wolak, and Finkelhor (2007) found that males aged from 10 to 12 years and from 16 to 17 years, and who are of White and non-Hispanic descent are the groups most vulnerable to such content. However, although researchers have posited that inadvertent exposure of adolescents to online pornography could result in negative effects, no researchers have systematically tested this assumption using a controlled experimental design.

Some scholars have emphasized that a feeling of anonymity is one of the motivations leading to an increased pursuit of sexual material by individuals (Joinson, 1998). A feeling of anonymity has also been regarded as a contextual variable influencing antisocial attitudes, such as ignoring morality and the law (Joinson, 1998). With almost universal, and often unrestricted, access to the Internet, adolescents may experience inadvertent online pornography exposure in both private (e.g., bedroom) and public places (e.g., a park or a street). Predictably, male adolescents who view inadvertent online pornography anonymously are later more likely to pursue online pornography intentionally, as well as to acquire more sexist attitudes towards women, than are those who have not inadvertently viewed online pornography. Although few researchers have considered this subject in empirical studies, testing the effects of anonymity in relation to online pornography exposure and consumption is clearly warranted.

In this study we utilized an experimental research design to explore whether or not inadvertent exposure to online pornography and perceived sense of anonymity affect the subsequent pursuit of sexual materials among young adult males, and/or the possible development of sexist attitudes in this group.

Feelings of Anonymity as a Function of Computer Deindividuation

A *feeling of anonymity* or perceived anonymity refers to a state wherein individuals shed their identity and normative standards, which leads to reduced self-awareness (Plowman & Goode, 2009). Decreased self-awareness further results in *deindividuation* – a loss of one's sense of individuality and personal responsibility – which has been found to result in a lowering of self-observation, self-evaluation, and concern for social evaluation (Zimbardo, 1969). Altogether, being in this state weakens an individual's self-control over normative beliefs “based on guilt, shame, fear, and commitment, which in turn leads to lowered thresholds for the expression of inhibited behavior” (Postmes & Spears, 1998, p. 239). Once a person is deindividuated, he or she acts in a manner similar to the stimulus-response organism of early behaviorism (Diener, 1980). Inasmuch as deindividuated individuals become easily affected by external stimuli, their attitudes and behavior eventually become more dependent on external stimuli.

In several studies, researchers have found support for the relationship between feelings of anonymity and counternormative behaviors. For example, White (1977) demonstrated that people who feel anonymous are more likely to tolerate obscene language than are those who do not feel anonymous. Utilizing secondary data from criminal reports in Northern Ireland, Silke (2003) revealed that more offenders committed violent crimes wearing disguises to mask their identities than committed violent crimes without wearing disguises.

Nevertheless, findings reported in deindividuation literature have not been consistent. Moreover, deindividuation has undergone several reformulations (Diener, 1980; Reicher, Spears, & Postmes, 1995). Some researchers have concluded that awareness of anonymity does not impact aggression levels or the sense of deindividuation of individuals (Schlenker & Forsyth, 1980). Others have argued that the occurrence of antisocial behavior is independent of a sense of anonymity (Diener, Dineen, Endresen, Beaman, & Fraser, 1975). However, some researchers have reported a reverse effect, one such effect being that the feeling of nonanonymity ultimately generates increased occurrence of antisocial behavior (Gergen, Gergen, & Barton, 1973).

Some researchers in recent studies have shown that the phenomenon of deindividuation is likely to occur in the context of new communication technologies, such as the Internet. For example, Plowman and Goode (2009) identified the feeling of anonymity as a factor determining the intent to download music illicitly. Some have argued that the practice of *flaming* on the Internet, that is, the intentional expression of hostile and aggressive messages online (Luzón, 2013), might have developed from deindividuation driven by anonymity (Lea & Spears, 1991). Accordingly, racist people have used the Internet to advocate racial violence, believing that their anonymity allows them to avoid potential harmful physical, economic, and cultural retaliation in response to such

activities (Glaser, Dixit, & Green, 2002). Such feelings of anonymity have been investigated as a contextual factor promoting negative and impulsive behaviors. Put simply, evidence suggests that computer deindividuation weakens the effects of subjective norms. In the context of the current study, feelings of anonymity on the Internet could result in computer deindividuation, such that adolescents could “feel mentally separated from the online act, reducing the perceived negative effects of delinquency and possibly giving them a sense of superiority or invincibility” (Plowman & Goode, 2009, p. 86).

To date, no researchers have investigated the assumption that the alleged harms from inadvertent exposure to online pornography (Mitchell et al., 2007; Wolak et al., 2007) may have resulted from feelings of anonymity. In psychological theories of anonymity it is suggested that adolescents could easily acquire sexist attitudes and express thoughts about committing sexual aggressiveness as a result of exposure to sexual material while feeling anonymous.

Feelings of Anonymity and Intentional Pursuit of Sexual Materials

In this study we defined *feelings of anonymity* as the sense of not being tracked, viewed, or recorded while users consume pornographic content. Based on deindividuation theory, we expected that inadvertent exposure of young adult males to online pornography while feeling anonymous could affect their subsequent pursuit of sexual materials. Specifically, inadvertent exposure may lead to intentional pursuit of sexual materials. In an experiment conducted by Zillmann and Bryant (1986), college students were exposed to either a no-pornography or a nonviolent-pornography condition for one hour a week for six weeks. The findings showed that, when participants were subsequently given an opportunity to watch pornography containing pornographic content classified by these authors as *uncommon* (e.g., sadomasochism and bestiality), those exposed to nonviolent pornography before the experimental session were more likely to select uncommon pornography and viewed such content for longer periods compared with the group who had not had any exposure to pornography. Given that the study was conducted in a private room, it was explained to the participants that their choices were “anonymous.” Such results seem to suggest that when users feel anonymous they are more likely to be motivated to pursue extreme types of pornography regardless of their gender. Even without the application of a long-term panel design, in the current study we hypothesized that individuals provided with opportunities to choose a variety of pornographic materials while feeling anonymous would be more likely to pursue hardcore pornography containing increasingly intense sexual content compared with individuals who did not feel anonymous (Hypothesis 1).

Inadvertent Exposure to Online Pornography, Feelings of Anonymity, and Sexist Attitudes

Researchers have suggested that exposure to at least some kinds of pornography can have significant harmful effects on adolescents' attitudes and behaviors. For example, Zillmann and Bryant (1984) demonstrated that repeated, extensive exposure (480 minutes over a 6-week period) to pornography depicting women as hyperpromiscuous and socially nondiscriminating sexual objects resulted in the trivialization of sexual aggressiveness among a group of college students. Both males and females who experienced this extensive exposure condition subsequently indicated a willingness to assign a shorter prison sentence to a convicted rapist than did those who were assigned to shorter and milder exposure conditions. Milburn, Mather, and Conrad (2000) found that viewing R-rated movie scenes containing sexually objectifying images resulted in an increased likelihood of accepting rape myths and of attributing responsibility of rape incidents to the female victim. Taken together, these empirical findings about the effects of pornography suggest that inadvertent exposure to online pornography, coupled with a greater sense of anonymity, could be related to the formation of attitudes that are more sexist.

Feelings of anonymity provide a sense of security, because being in a situation where they feel anonymous provides individuals with "a safe way...to act, transact, and participate without accountability, without others getting at them, tracking them down, or even punishing them" (Nissenbaum, 1999, p. 142). As Lea and Spears (1991, p. 281) argued, "various technological features of electronic communication (e.g., visual anonymity and lack of social cues) trigger psychological states and processes, which result in less normative influences on individuals and groups, as well as more deregulated and extreme behavior." Deindividuation evoked by such feelings of safety results in a state of readiness for individuals to act on their urges. For example, when adolescents inadvertently open online pornography images while feeling anonymous, they might think that it is unnecessary to continue obeying social morality because there is no risk of being caught and punished for breaking any related moral rules (Klein, Clark, & Herskovitz, 2003).

Sexist attitudes consist of antipathy and hostile beliefs toward the opposite sex, with the term being most commonly applied to male attitudes toward women. *Hostile sexism* refers to subjectively negative views about women, generally based on antagonistic and indignant feelings toward them (Glick & Fiske, 1996). Predictably, inadvertent exposure of adolescents to online pornography while feeling anonymous can evoke sexist attitudes that are more hostile compared with the attitudes of those who do not feel anonymous. Based on the foregoing discussion, we hypothesized that young adult males who are inadvertently

exposed to online pornography while feeling anonymous could acquire attitudes that are more sexist compared with those who do not feel anonymous (Hypothesis 2).

Method

Participants

Participants were 84 male students from a large Midwestern university in the USA. They all volunteered for the experiment in return for course credits. As this experiment involved 10-second exposure to online pornography, all participants were 18 years old or slightly older.

Procedure

By using a 2×2 between-subjects design (inadvertent exposure to sexual material vs. nonsexual material \times feelings of anonymity vs. no feelings of anonymity), each participant was randomly assigned to one of the four conditions. Participants were informed that the task involved finding the best newspaper article online that satisfies a prescribed set of keywords within 5 minutes. They were then asked to answer an online survey. Upon completion, each participant was exposed to either a 10-second sexual online pop-up commercial or a 10-second nonsexual online pop-up commercial. The participants were unaware of the study purpose. After the 10-second presentation, participants were instructed to choose which type of pornography they would like to view. Three options were provided: hardcore pornography, softcore pornography, and nonsexual material. After making their choices, the experiment was concluded; a thank-you note appeared on the computer monitor. A 3-minute debriefing session was held after the participants completed the experiment, but before they left the laboratory.

Stimuli

We obtained the sexually explicit material used in the study from a widely consumed pornographic DVD. It contained some scenes where two males treated a woman as a sexual plaything without any consideration of her dignity. The material includes scenes of fellatio and male-superior intercourse in which the female character was hysterically responsive to the sexual demands of the two male partners. The nonsexual material we used was taken from a documentary; it depicted a history professor giving a lecture on American railroad history.

To impart feelings of anonymity, each participant watched the experimental stimuli alone via a laptop in a quiet room. Half the participants in groups exposed to either sexually explicit material or nonsexual material were told that their viewing would not be monitored and tracked and were instructed to participate in

the experiment as freely as they would do at home. In contrast, to impart feelings of nonanonymity, the other half of the participants in both groups were told that they would watch the experimental stimuli via a laptop with a recording webcam in it, and that their viewing choices would be tracked using preinstalled software.

Measures

Sexist attitudes. We used Glick and Fiske's (1996) Hostile Sexism Inventory to assess the sexist attitudes of participants toward women. The inventory consists of 11 items measuring sexist hostility (e.g., "Women seek to gain power by getting control over men" and "Feminists are making entirely unreasonable demands of men"). Participants are asked to rate each item on a 6-point scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). A higher score indicates attitudes that are more sexist. In our study we assessed level of hostile sexism by both preexperimental and postexperimental surveys. In both pre- and posttests, the results showed that the interitem reliabilities of the 11 items were acceptable ($\alpha = .83$ and $\alpha = .89$).

Sexual media choice. The 10-second video clip shown to participants was representative of an unsolicited pop-up window, a form of inadvertent exposure to online content. After exposure, participants were asked which type of content they would like to see from the following choices: hardcore pornography, softcore pornography, and nonsexual material.

Results

Manipulation Check: Anonymity

After the experiment, participants were asked to respond to two items to distinguish feelings of anonymity versus nonanonymity conditions. A 9-point Likert-type scale was provided. Participants under the nonanonymous conditions reported being significantly more conscious of being monitored ($M = 7.21$, $SD = 2.02$) than those in the anonymous conditions ($M = 3.00$, $SD = 2.61$), $t(82) = 8.27$, $p < .001$. Participants under the nonanonymous conditions were also more likely to report that they felt they were being tracked ($M = 6.17$, $SD = 2.65$) than those under anonymous conditions ($M = 3.05$, $SD = 2.65$), $t(82) = 5.39$, $p < .001$.

Online Pornography Selection

As summarized in Table 1, there was a significant association between sexual material choice and feelings of anonymity when the students were exposed to sexual material. This result indicates that when these people felt that they were inadvertently exposed to sexual material, feelings of anonymity created a greater inclination to view online pornography compared with those who did not feel anonymous. The strength of association between feelings of anonymity

and choices corresponding to the three types of sexual material was moderate (Cramer's $V = .49$). However, no statistically significant difference was found when participants were exposed to nonsexual material.

Table 1. *Willingness to Choose Online Pornography After 10-Second Clip Exposure*

	Nonsexual material		Sexual material	
	Feelings of anonymity	Feelings of nonanonymity	Feelings of anonymity	Feelings of nonanonymity
Hardcore pornography	14 (66.7)	9 (42.9)	21 (100.0)	13 (61.9)
Softcore pornography	4 (19.0)	10 (47.6)	0 (0.0)	6 (28.6)
Nonsexual material	3 (14.3)	2 (9.5)	0 (0.0)	2 (9.5)
Total	21 (100.0)	21(100.0)	21 (100.0)	21(100.0)
Statistic	$\chi^2(2) = 3.86, p = .145$		$\chi^2(2) = 9.88, p = .007$	

Effects of Inadvertent Online Pornography and Feelings of Anonymity on Sexist Attitudes

As summarized in Table 2, the covariates for previous attitudes toward hostile sexism were significantly associated with increased intensity of hostile sexism after exposure. After accounting for the variance caused by their preexposure level of hostile sexism, being inadvertently exposed to pornography still significantly accounted for differences in the postexposure hostile sexism score. This indicates that 10 seconds of inadvertent exposure to online pornography intensified hostile sexism ($M = 2.56, SD = .95$) compared with exposure to nonpornographic materials ($M = 2.25, SD = .88$). In addition, the results showed the main effects of feelings of anonymity on the intensity of hostile sexism, suggesting further that participants in the anonymity-induced condition reported higher levels of hostile sexism ($M = 2.6, SD = .88$) than those in the condition where anonymity was not induced ($M = 2.21, SD = .93$).

Table 2. *Analysis of Covariance for the Intensity of Hostile Sexism*

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>	Partial η^2
Previous hostile sexism	1	45.43	45.43	180.9	.001	.70
Inadvertent exposure to sexual material (A)	1	1.55	1.55	6.16	.015	.07
Feelings of anonymity (B)	1	3.41	3.41	13.58	.001	.15
A \times B	1	.05	.05	.19	.667	.00
Error	79	19.84	.25			
Total	84	556.1				

Discussion and Conclusion

Our aim in this study was to consider the potential effects of inadvertent exposure to online pornography with regard to feelings of anonymity, as well as to address the implications of these research findings in the field of mass media (i.e., potential effects on adolescent viewers).

The results show that participants who felt anonymous expressed greater willingness to select hardcore pornography than those who did not feel anonymous. This tendency was most apparent among the group exposed to the 10-second online pornography who felt that they viewed the clip anonymously. This is in line with the finding by Zillmann and Bryant (1986), that inadvertent exposure to online pornography while feeling anonymous is most likely to motivate viewers to consume uncommon pornography, which is indicative of the transformation of inadvertent exposure to intentional exposure.

We proposed two hypotheses to explore the effects of inadvertent exposure of young adult males to online pornography and the feeling of anonymity on sexist attitudes. We hypothesized that young male adults exposed to unintended online pornography while feeling anonymous would subsequently display a significant increase in hostile sexist attitudes. We found that inadvertent exposure to online pornography for 10 seconds significantly increased viewers' sexist attitudes. An induced feeling of anonymity also resulted in a significant increase in postexposure hostile sexism attitudes. Indeed, a comparison of effect sizes showed that an induced sense of anonymity resulted in a greater increase in an attitude of hostile sexism than did simple exposure to the pornographic content.

The lack of a significant interaction between online pornography and feelings of anonymity indicates that the two variables have influences on sexist attitudes toward women that are independent. Regardless of the effects of online pornography, the feeling of anonymity promoted significantly more hostile sexist attitudes toward women. According to the theory of deindividuation, a sense of anonymity induces psychological change. When individuals perceive that no one knows what they are viewing, they are likely to experience reduced self-awareness, which, in turn, leads to being less considerate toward others. In addition, feelings of anonymity may cause individuals to become less able to control their impulses and more responsive to immediate stimuli based on their current emotional state; this implies reduced rational and long-term planning (McKenna & Bargh, 2000). Lack of social cues under anonymous conditions has been found to strengthen this mental state (Joinson, 1998).

The major limitation in our study is the fact that our participants were all, of necessity, aged 18 years and over. The effect of online pornography on younger males, particularly the adolescent age group, is a topic that merits further study.

One of the important contributions in this study is our finding that feelings of anonymity in one context translate into hostile sexist attitudes in another context. The findings in this study affirm the argument that people in isolation do not pay attention to social norms (e.g., norms that associate the use of sexual media with negative meaning) after inadvertent exposure to pornography and, instead, they become more appetitively responsive to available stimuli. The sense of identity safety, evoked by the sense of not being tracked, viewed, or recorded while consuming online pornography creates a deindividuated mindset among viewers. In this psychological state, viewers are more likely to be affected by external sensory input, regardless of the social stigma they might normally assume is associated with appetitive responses to such content (Diener, 1980).

Our findings in this study provide important information about young male adults who feel anonymous while consuming online pornography to which they are inadvertently exposed. If antisocial attitudes are more likely to be expressed under anonymous conditions, determining whether or not anonymous pornography consumption leads viewers to behave in ways that are deviant and antisocial should be an important field for examination in future studies. Nevertheless, although minimal research attention has been paid to this assumption, many researchers contend that the psychological state evoked by anonymous conditions is positively related to antisocial behavior (Suler, 2004). Specifically, it has been found that when individuals are presented with immediate personal rewards, the relationship between anonymity and antisocial behaviors is strengthened (Postmes & Spears, 1998). This stimulus-reward perspective implies that, as long as anonymous pornography provides immediate psychological rewards, there is an increased likelihood of young male adult viewers behaving in ways that are deviant and antisocial.

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