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Rape in America: an empirical test of two theories

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RAPE IN AMERICA: AN EMPIRICAL TEST OF TWO THEORIES

by
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ABSTRACT

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This study investigates two macro-social theories of rape—pornography consumption and gender inequality—utilizing state-level data. First, it is argued that media consumption patterns have changed due to the popularity of the internet and increasing household broadband access. In particular, it is contended that men who consume pornography prefer the internet to traditional mediums such as hard-copy magazines and DVDs. To test this assumption, a survey was administered to a convenience sample of nearly 500 male students at Rowan University. The results show evidence that males who intentionally consume pornography prefer the internet and, therefore, the use of broadband access as a *proxy measure* of pornography consumption is justified to some degree. Second, using the most recent state-level data available, a partial replication and modification of Baron and Straus's (1989) *Four Theories of Rape in American Society* was conducted employing several measures of pornography consumption (i.e., sex magazine circulation rate and household broadband access), gender equality, and control variables. This study examines whether pornography consumption and gender equality significantly predict rape rates in the United States, twenty years after *Four Theories of Rape in American Society* was first published. The analyses provide little support for these two theories of rape and the implications of these findings are discussed.

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CHAPTER I

Introduction

Rape is an international concern that evokes much public indignation, and in this regard it is similar to other acts of violence (Austin & Kim, 2000; Carr & Van Deusen, 2004; Stack & Kanavy, 1983). In America, the consequences of sexual assault on victims and their families receives much warranted attention and continues to be the subject of empirical research. Studies on rape and sexual assault can be found in a broad range of disciplines such as criminal justice, psychology, and the medical community (Humphrey & White, 2000; Marine, 2004; O'Sullivan, 1993).

Some may find it comforting that the national rape rate decreased gradually between 1992 and 2007, from 42.8 to 30.0 per 100,000 persons, according to the Uniform Crime Reports (Federal Bureau of Investigation, 2007). This is the lowest level of *reported* rapes in over two decades, but it is also important to acknowledge that America's rape rate still ranks among the highest in the world (Bureau of Justice Statistics, 2004; Federal Bureau of Investigation, 2007; United Nations Office on Drugs and Crime, 2004). Regarding the accuracy of international crime statistics, it is widely accepted that rape is an *underreported* crime and America is no exception (Austin & Kim, 2000). This is an ongoing concern that is supported by data from the National Crime Victimization Survey (Bureau of Justice Statistics, 2004). According to the NCVS, sexual assaults occur more frequently than what the Uniform Crime Reports indicate (Federal Bureau of Investigation, 2007; Siegel, 2007; Walker, Spohn, & DeLone, 2007).

Additionally, it is important to observe that noticeable differences exist among state-level rape rates (Baron & Straus, 1989; Russell, 1988; Scott, & Schwalm, 1988). Alaska's rape rates, for example, have been consistently higher than the national average for the last two decades peaking at 102.2 per 100,000 in 1981, and decreasing to 77.4 per 100,000 in 2007. Despite the decrease in 2007, Alaska's rape rate was still more than 2.5 times the national average (Bureau of Justice Statistics, 2004; Federal Bureau of Investigation, 2007; Scott & Schwalm, 1988). Though not as dramatic as Alaska, a few states have consistently reported higher rape rates while other states consistently report lower rates year after year (Baron & Straus, 1989; Bureau of Justice Statistics, 2004; Federal Bureau of Investigation, 2007).

Prior research offers a number of theoretical reasons for these observed variations in rape rates, including criminological and procedural explanations (Siegel, 2007; Tonry, 2004; Walker et al., 2007). As for criminological explanations, Larry Baron and Murray Straus conducted several studies (1984, 1987, and 1989) that tested four theories that could account for state-by-state variations in rape rates. In particular, two of the macro-social theories—pornography and gender inequality—tested in Baron and Straus's (1989) *Four Theories of Rape* will be the focus of the current investigation. In that study, the authors reported significant relationships between pornography and rape as well as gender equality and rape. Using current state level data, the investigator examined whether these statistical associations hold true today. Additionally, beyond replicating the variables used in the original study, this investigation employed similar or modified versions of the core independent variables. The aim was to determine whether two prominent explanations of rape, using slightly different measures in a different time

period, would generate the same results. Baron and Straus's (1989) test of these two theories is discussed in detail below.

Changes in Consumption Patterns?

The pornography consumption index employed by Baron and Straus (1989) was an aggregate measure of magazine circulation rates for eight popular sex magazines[1]. Consumption habits, however, have changed because of the internet. The impact of the internet cannot be overstated as many traditional forms of news and entertainment—newspapers and magazines—have suffered revenue losses, forcing them out of business because of the migration of their audience to the internet (Associated Press, 2003; Sequeira, 2007; Washington, 2008). Like the mainstream media, the adult entertainment industry has also witnessed decreases in offline subscriptions to adult magazines and the sale of hardcopy adult videos (Vasquez, 2009; Washington, 2008).

Because of greater access to *broadband* nationwide, pornography is more accessible than ever before (Edelman, 2009; Perdue, 2002). Broadband is a technological break-through in the telecommunications industry, widely introduced in 2001, that facilitates a greater capacity for information-carrying (Gaskin, 2004). Broadband technology, along with developments in faster processors and computer memory, provides consumers with faster downloading speeds. These developments are ideal for men who consume pornography and the internet offers instant gratification by providing a nearly limitless amount and variety of imagery that is, in many instances, free to the public (Edelman, 2009).

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[1] *Playboy, Hustler, Penthouse, Chic Club, Gallery, Genesis* and *Oui* (Baron & Straus, 1989).

Over a thirty year period, there have been many studies on the effects of pornography consumption, but the body of research investigating the influence of *internet* pornography consumption on rape rates is rather sparse (Edelman, 2009; Siegel, 2007). To address this significant gap in the empirical literature, the current study had two objectives. First, an anonymous survey investigated the pornography consumption patterns of males. In particular, the study examined whether participants who consume pornography prefer the internet to "traditional" forms of media (e.g., hard-copy magazines and DVDs). Second, the study used broadband access as a measure of the *opportunity to consume* pornography and an adult magazine circulation index as a direct measure of pornography consumption in the state-level analysis portion of the study. The main objective was to determine whether access to broadband is associated with state-level rape rates.

Different Indices, Different Results?

It is important to note that America, along with many other industrialized nations, has reduced gender disparities over the last hundred years (Chafetz, 1990; Mackinnon, 1984). However, gender inequality is still a hotly debated issue and social indices can provide a useful resource for comparing the status of women to men in many areas of life —economic, political, and legal. Using a measure of gender equality developed by the Institute for Women's Policy Research, but not employed in *Four Theories of Rape*, the study examined whether the association between gender equality and rape holds true despite using a different measure of the same theoretical concept and conducted in

another time period. If gender inequality indeed causes rape, empirical tests conducted in different years, using different measures, should evidence this relationship.

CHAPTER II

Background

Pornography

Definition.

In America, the home of the largest pornography industry in the world, it is a challenge to come up with a universally accepted definition of *pornography* (Shim, 2007; Edelman, 2009). The difficulty of defining the term is often exemplified by a legal case involving constitutional protections of pornographic material. In this case, Justice Potter Stewart remarked that he is not able to define exactly what pornography is, but he would know it when he sees it (Jacobellis v. Ohio, 378 U. S. 184 (1964)).

Determining what constitutes pornography is indeed highly subjective. Concerning its etymology, pornography (popularly known as *porn*), refers to literary depictions of prostitutes; however, in this era of sexual fluency and ubiquity, this definition is woefully inadequate (Hogg, 1999; Mackinnon, 1984). Over time, American society has become more tolerant, to some degree, of erotic imagery in arts and entertainment; in essence, what communities perceive to be pornographic continues to evolve (Hogg, 1999; Itzin, 1992). Still, it is generally accepted that the production of porn, in contrast to erotica, is an activity that does not claim to have any artistic merit (Baron, 1990; Baron & Straus, 1989). Hard-core porn comprises graphic nudity, sexual penetration, and often includes aggression or violence, and its sole purpose is to stimulate or generate a sexual response (Dworkin, 1979; Fisher & Grenier, 1994).

National investigations.

In 1968, the Supreme Court held that people could read and view whatever they wish in the privacy of their own homes (Stanley v. Georgia, 394 U.S. 557, 1969). In the aftermath of this decision, President Johnson established the *Commission on Obscenity and Pornography*. The commission's report, published in 1970, found no evidence to support the claim that exposure to obscene and pornographic materials is harmful (Ferguson & Hartley, 2009). This study was widely criticized and rejected by congress, the senate, and President Nixon, Johnson's successor (Edwards, 1992; Maddock, 1972; Scott & Schwalm, 1988), as well as those involved in the feminist movement (Brownmiller, 1975; Walp, 2005).

Pornography quickly became a major industry in the 1970s despite the vocal criticisms of many groups that complained about the "corrupting influence on society" and the threat to traditional American values that pornography posed (Edwards, 1992; Mielke, 2001). In response, President Reagan launched a comprehensive investigation into pornography in 1985, with the goal of finding new ways to control the "pornography problem" (Califia, 1986; Ferguson & Hartley, 2009). This led to the establishment of the *Attorney General's Commission on Pornography* (1986), otherwise known as the *Meese Report* (Califia, 1986; Edwards, 1992; Maddock, 1972).

The *Meese Report* concluded that pornography had become increasingly violent, and that repeated exposure leads to a number of harmful effects, including deviant sexual behavior (Baron & Straus, 1989; Edwards, 1992; Mielke, 2001). These public developments generated a great deal of academic interest as a growing number of researchers examined theories of sexual aggression, rape, and other forms of criminal

behavior committed against women (Carlen, 1990; Lilly, Cullen & Ball, 2007; Messerschmidt, 1986; Mielke, 2001).

The 1990s also had its fair share of legislation related to "doing something about the pornography problem." With the increasing availability of the internet and the prevalence of online pornography, Congress tried to impose restrictions with the passage of the Communications Decency Act (1996) and the Child Online Protection Act (1998), but both of these laws were eventually struck down by the Supreme Court as unconstitutional[2]. In its place, the Child Protection Act (2000) was passed with provisions for schools and libraries to block pornographic websites (Ferguson & Hartley, 2009). These developments underscore the relevance of the internet in studying the impact of pornography on sexual aggression, compelling scholars to consider the internet as a source of exposure.

Competing theories.

There is scarcely any research on state-level internet consumption, but one can still find a theoretical basis for making a link between broadband access and pornography consumption. Since 2000, there has been a sharp increase in the number of households with internet access (Edelman, 2009; Perdue, 2002; United States Department of Commerce, 2008). Observers agree that the availability of online porn is ideal for today's consumer; studies show that many people are encouraged by the convenience and relative anonymity of online consumption, as they enjoy unlimited access to adult literature, pictures, movies, X-rated chat-rooms and web cams at the stroke of a mouse (Mitchell, Becker-Blease & Finkelhor, 2005; Perdue, 2002; Vasquez, 2009).

[2] Reno v. American Civil Liberties Union, 521 U.S. 844 (1997).

There is also a theoretical assumption that the increasing availability, affordability, and diversity of commercial porn and the proliferation of free amateur porn on the internet, have precipitated a decline in adult magazine circulation and possibly could have lead to a net increase in overall consumption (Associated Press, 2003; Washington, 2008). The popularity and accessibility of the internet has also lead to a shift in strategy by major companies such as *Playboy* and *Penthouse*, who now choose to invest a great deal in their online services (Edelman, 2009; Madler, 2008; Sequeira, 2007).

Regarding the association between pornography consumption and rape, there are two theoretical arguments. The findings of the *Meese Report* support the traditional feminist theory that repeated exposure to pornographic materials, particularly pornography with violent content, *causes* rape (Califia, 1986; Carr & Van Deusen, 2004). According to anti-pornography feminists, repeated exposure to pornography reinforces negative thoughts about women, perpetuating myths about rape that justify the act and trivialize rape (MacKinnon, 1984). Additionally, anti-porn feminists suggest that repeated exposure to pornography directly causes aggression, both sexual and non-sexual, towards women (Dworkin, 1979; MacKinnon, 1984; Russell, 1988), or may trigger violence in men who already have aggressive proclivities (Barnes, Malamuth & Check, 1984; Cook, Fosen & Pacht, 1971; Donnerstein & Linz, 1986; Shim, 2007).

In contrast, the alternative feminist hypothesis is that the consumption of pornography can lead to a catharsis and have a calming effect on males because it provides an outlet for relieving sexual tension, causing males to be less aggressive (Dallas, 1982; Groth & Birnbaum, 1980). This "safety valve" argument is used

to explain why many men who regularly consume pornography never commit rape (Baron & Straus, 1989).

Prior research.

Several state-level studies, employing sex magazine circulation rates, report a moderate to strong, positive relationship between pornography consumption and rape rates (Baron & Straus, 1984, 1987, 1989; Scott & Schwalm, 1988). These findings are logically compatible with the traditional feminist hypothesis—that pornography *causes* rape, objectifies women, and encourages ideational support for committing sexual violence against women (Baron & Bell, 1977; Carr & Van Deusen, 2004; Siegel, 2007).

Leaning on evidence of a positive association between pornography and rape reported in the empirical literature, a number of prominent scholars have developed arguments to advance the *pornography-causes-rape* hypothesis (Dworkin, 1979; Mackinnon, 1984; Russell, 1988), suggesting that repeated exposure to pornography, whether it includes violence or not, leads to sexual violence against women. Other scholars, such as Brownmiller (1975), incorporate pornography into their sophisticated criticisms of the patriarchal system and argue that pornography reinforces and celebrates the tools of oppression employed by men—sexism and male supremacy—that provide social support for rape. It is argued that this is particularly true in certain milieus, such as college campuses, where the rape culture flourishes and that repeated exposure to pornography triggers sexual violence against women (Carr & Van Deusen, 2004; Linz, Donnerstein & Penrod, 1988; Mitchell et al., 2005; Russell, 1988). Additionally, this view is promoted by others who suggest that rape has more to do with a desire to

dominate women, not the desire for sexual intercourse (La Free, 1982; Silbert & Pines, 1984; Walp, 2005).

The results of the research noted thus far seem to favor a positive relationship between pornography consumption and rape. However, many studies fail to find support for this hypothesis. For example, a number of experimental studies testing levels of sexual aggression and men's attitudes towards women, before and after viewing pornographic movies, find no statistical association (Barbaree & Marshall, 1991; Linz et al., 1988; Russell, 1988; Siegel, 2007). A clear example of this can be found in Malamuth and Ceniti's (1986) experimental research that finds the viewing of violent pornography or nonviolent pornography over a period of time has no effect on male sexual aggression. In another experimental study, Fisher and Grenier (1994) report similar findings, offering minimal support for the *pornography-causes-rape* hypothesis. Furthermore, other studies fail to report any relationship between the viewing of pornography and negative attitudes towards women (Crepault, 1972; Davies, 1997; Padgett, Brislin-Slutz & Neal, 1989).

A small body of research has also explored the possibility of an inverse relationship between pornography and rape. It has been suggested that pornography can help people who are sexually inhibited, and that controlled exposure to erotic materials can help people overcome sexual anxiety (Baron, 1990; Dallas, 1982; Goldstein, Hartman & Kant, 1973). Cross-national studies have also reported that increases in pornography consumption lead to decreases in sexual assaults (Diamond & Uchiyama, 1999; Kutchinsky, 1991). In particular, Kutchinsky (1991) studied several developed countries and found an inverse relationship between pornography consumption and rape rates in every case except for the United States. These cross-national findings support the theory

that pornography consumption has a cathartic effect and possibly carries out a socially beneficial function in satisfying sexual needs and generating fantasies that induce masturbation (Goldstein et al., 1973). Arguably, it is less likely that these fantasies will act as a *safety-valve* for deviant sexual fantasies, and it is less likely that they well be "re-enacted" in real life (Baron & Straus, 1989, Fisher & Grenier, 1994; Goldstein et al., 1973; Silbert & Pines, 1984).

Gender Inequality

Definition.

Gender equality is a multi-disciplinary issue that studies the social, economic, legal, and political status of women in relation to men (Chafetz, 1990; Messerschmidt, 1986). Historically, so called *men's work* was placed at a higher value than *women's work,* and a patriarchal system sustained the subjugation of women at home and in the work place (Austin & Kim, 2000; Carlen, 1996; Siegel, 2007). Critical feminists contend that the system of patriarchy in which men dominate economic, social and political affairs, treats women like commodities, such as money or land (Daly & Chesney-Lind, 1988; Siegel, 2007; Whaley, 2001). Prior research suggests that this patriarchal system perpetuates inequity in terms of women's attainment and opportunity, and is symptomatic of a capitalist society that maintains the unequal power of men and women, fostering the exploitation of women (Chafetz, 1990; Smith & Paternoster, 1987).

It is generally accepted that gender differences in America are not as obvious as they were fifty years ago, but studies show that the residual effects of systematic inequality still exist after centuries of male domination of the laws of inheritance which

allowed men to control property, employment, and the means of production (Daly & Chesney-Lind, 1988; Siegel, 2007). Advocates for gender equality have condemned the infringement of women's rights and oppressive gender-based restrictions, and seek a *level playing field* for women in many spheres including opportunities for employment and economic advancement (United Nations Development Program, 2009).

Competing theories.

Similar to research on pornography, gender equality scholars grapple with two competing theoretical explanations. Critical feminists suggest that the oppressive system of patriarchy, in communities with high levels of gender inequality, renders women powerless and increases the likelihood that they will be the targets of violence (Brownmiller, 1975; Daly & Chesney-Lind, 1988). This theory could explain violence committed against women, including spousal abuse and intimate partner rape (Baron & Straus, 1987).

In the patriarchal context, men are more likely to *do gender.* This term is used regularly in feminist literature referring to domineering and sexist behavior, on the part of men against women, as a way of proving or reinforcing *machismo*; this domination often involves sexual violence against women (Russell, 1975; Whaley & Messner, 2002; Wood, 2005). Research also suggests that some men believe that forcing themselves on women allows them to "achieve masculinity" (Messerschmidt, 1986; Schwartz & DeKeseredy, 1997; Scully & Marolla, 1985).

According to critical feminists, the system of patriarchy endorses sex-role stereotypes, rape-myths and the need for sexual relationships to be exploitative (Austin &

Kim, 2000; Baron & Straus, 1989; Wood, 2005). The effect of this endorsement is that men are thereby encouraged to "*do gender*". If the patriarchal system is dismantled and gender equality increases, then men will be less inclined to "*do gender*" and this will have an ameliorative effect on rape rates and victimization of women in general (Messerschmidt, 1986; Siegel, 2007; Whaley, 2001; Whaley & Messner, 2002). This perspective is also referred to as the traditional feminist hypothesis of rape (Whaley, 2001).

Conversely, an increase in gender equality could also have a *backlash effect* in the sense that as men feel threatened by the encroachment and empowerment of women, they will respond with violence (Brownmiller, 1975). In this framework, sexual violence is associated with males who are frustrated by economic hardship and the demands of employment, reducing the view of women to objects of sexual relief rather than their professional colleagues (Martin, Vieraitis, & Britto, 2006; Whaley, 2001). This alternative theoretical explanation is based on the assumption that the system of patriarchy is integral for the preservation of male superiority and dominance. This system perpetuates the belief that women are the reproductive possessions of men and that rape, as well as the fear of rape, are instruments of social control (Baron & Straus, 1989; Whaley, 2001; White, 1999). In other words, as women attain higher levels socially, economically and politically, rape rates and female victimizations will also increase.

Prior research.

Studies on gender equality and rape report divergent findings between the economic conditions of women and rape (Austin & Kim, 2000; Bailey, 1999; Eschholz

&Vieraitis, 2004; Peterson & Bailey, 1992; Whaley, 2001). Some economic indicators have been associated with higher rape rates while others are associated with lower rape rates (Martin et al., 2006). For example, Bailey (1999) found that rape rates were significantly lower in cities where the median income for women was higher. This is consistent with Whaley's study (2001) which reports that over time, increases in income equality are significantly associated with a gradual decrease in rape rates. In this regard, these studies support the traditional feminist hypothesis. However, some studies report a *backlash effect* when the economic status of women improved (Austin & Kim, 2000; Baron & Straus, 1987, 1989; Peterson & Bailey, 1992). Similarly, Eschholz and Vieraitis (2004) found that higher educational attainment, which is linked to higher income levels for women, leads to higher rape rates.

Results are also mixed in studies that examine female labor force participation. Whaley (2001) found a positive relationship between female labor force participation and rape rates, thereby supporting the backlash hypothesis. However, it has been asserted that rape rates are not related to fluctuations in female involvement in low-level jobs (Martin et al., 2006). Rather, increases in women's participation in professional domains—such as medicine, engineering, and corporate management—that were traditionally dominated by men could influence rape rates (Felson, 2002; Martin et al., 2006). This reasoning is supported by studies that report women's gains in occupational prestige, as opposed to mere participation in the labor force, are related to higher rape rates (Austin & Kim, 2000; Peterson & Bailey, 1992; Whaley, 2001).

Still, several studies report no relationship between labor force participation and rape (Austin & Kim, 2000; Ellis & Beattie, 1983). For example, the Eschholz and

Vieraitis (2004) study reveals that areas with greater inequality in labor force participation reported lower rape rates. Routine activities theory offers a plausible explanation for this finding—fewer rapes will occur if there is less social interaction between men and women in the work place (Felson, 2002; Lilly et al., 2007).

Finally, recent studies have attempted to integrate the traditional feminist hypothesis with the backlash hypothesis. It has been suggested that as gender equality increases there will be a *short-term* backlash effect in rape rates, but in the long-term, there will be a decline in rape rates. Two studies found partial support for this hypothesis (Martin et al., 2006; Whaley, 2001). Their findings complement the prediction of feminist scholars that when society achieves gender equality, attitudes that support rape will gradually lose their influence and will no longer be able to shape gender relations.

Pornography and Gender Inequality

Prior research also reports mixed results when investigating the association between pornography consumption and gender inequality. Some scholars contend that pornography is a symptom of a patriarchal society and that male attitudes that enable pornography to flourish in America also sustain gender inequality (Brownmiller, 1975; Dworkin, 1979; Mackinnon, 2004). It is suggested that the rape-myth is reinforced subliminally by pornographic consumption and that this is associated with attitudes that sustain gender inequality (Dworkin, 1979). The traditional feminist hypothesis supports the assumption that pornography consumption is negatively associated with gender equality (Baron, 1990; Russell, 1975).

Demare, Briere, and Lipps (1988) examined self-reported data and found a moderate relationship between repeated exposure to nonviolent pornography (i.e., soft-core porn) and anti-women attitudes. Given the cross-sectional nature of this study, it is difficult, however, to state that pornography leads to negative attitudes toward women. It is quite possible that those who hold negative attitudes toward women are attracted to pornography. In contrast, the results of Baron's (1990) state-level study show a significant, inverse relationship between pornography consumption and gender inequality. In other words, there are higher levels of gender inequality in states where *less* pornography is consumed. It is not firmly established, empirically speaking, that pornography consumption and gender inequality are related, and this current investigation tested them independently in multivariate analyses.

CHAPTER III

Methods

In the study, two separate methodological approaches were employed; therefore, the study was divided into two projects. Project A was a pilot study of pornography consumption habits that was investigated by administering a self-report survey to students at Rowan University. Project B was a state-level analysis that utilized publicly available data on pornography consumption, gender inequality, and rape rates. Both projects are discussed in detail below.

Project A

Hypothesis.

Evidence suggests that the internet has changed how society consumes mainstream media. As such, the investigator contended that this technology has also changed how pornography is consumed because of increasing access to high speed broadband internet services. Based on this, it will be determined whether or not:

H_1: Men who intentionally consume pornography prefer the internet to traditional media such as hard-copy magazines and DVDs.

Tools and Procedures.

In order to test this hypothesis, a survey was administered as part of a pilot study of the pornography viewing habits of adult males. The investigator wanted to test the assumption that men who consume pornography prefer to do so online, and that pornography consumption via the internet is more prevalent than traditional modes of consumption such as hardcopy magazines and DVDs. The following survey questions (*see* Appendix A, for questionnaire) were used to measure consumption preferences:

1. Since the beginning of the year (January 1, 2009), have you ever intentionally viewed pornographic images? *Please check only ONE box below:*

   [0] NO

   [1] YES

2. Which one of the following BEST describes your pornography viewing PREFERENCES? *Please check only ONE box below:*

   [0] OFFLINE VIEWING – I prefer to view pornography that is NOT on the internet such as magazines, pictures, DVDs, et cetera.

   [1] ONLINE VIEWING – I prefer to view pornography on the INTERNET (e.g., pictures, videos that are streamed to your computer or iPod, live webcams, or downloading pornographic movies).

   [2] NO PREFERENCE – I prefer to view both online and offline types of pornography.

   [3] I DO NOT LIKE PORNOGRAPHY

The investigator wanted to determine whether the results of the survey would support the argument that consumption habits have changed, thereby justifying the use of broadband access data as a proxy measure of the *opportunity to consume pornography*. The survey was administered by email in the fall 2009 semester. An invitation was sent to the entire student body at Rowan University (approximately 11,000), and respondents were given a five day window in which to respond. The response rate was approximately 15% (or 1600/11000). However, the investigator noted a possible limitation in the fact that those who respond to online surveys may be more likely to prefer viewing images on the internet, and this could possibly have a small impact on the results. Therefore, results that strongly support the hypothesis must be interpreted cautiously.

Survey Analysis Plan.

The project employed a univariate chi-square statistic in order to test the first hypothesis (H_1). First, female respondents were removed from the analysis then, secondly, male subjects who selected the category *"No"*—indicating that they never intentionally viewed pornography since the beginning of the year—were removed from consideration. Finally, a nonparametric univariate chi-square test was employed to determine whether a statistically significant difference exists between observed and expected values for the three categories indicating preference—*Online, Offline* and *No Preference.*

Project B

Hypotheses.

Using secondary data constructed with publicly available data, a state-level analysis was used to test the following hypotheses:

H_2: Broadband access is significantly associated with state-level rape rates.

H_3: Sex magazine circulation rates are significantly associated with rape rates.

H_4: There is a significant relationship between gender equality and rape rates.

Variables Employed in the State-Level Analysis

Dependent variable.

This current study is concerned specifically with acts of sexual violence towards women. The Uniform Crime Reporting (UCR) program defines *forcible rape* as the carnal knowledge of a female forcibly and against her will, which includes attempted rape and assaults with the intent to rape (Federal Bureau of Invesigation, 2004-2007). The use of the term, *forcible rape* also indicates that other sex crimes, such as statutory rape and child pornography offenses committed without force, are listed in separate categories. Additionally, *forcible rape* includes acts of incest but excludes sexual attacks on males, which are recorded as aggravated assaults or sexual offenses (Federal Bureau of Invesigation, 2004-2007).

This study used forcible rape rates per 100,000 persons for the 50 states plus the District of Columbia. The state-level rates were based on *forcible rapes* reported to law enforcement within their respective precincts and jurisdictions. The UCR program is still the best source for state-level data on rape (Siegel, 2007; Walker et al., 2007).

Independent variables

Pornography consumption.

Measuring state-level pornography consumption is challenging because it is an activity that generally takes place in private and there is no reliable, state-level reporting procedure for pornography consumption practices (Edelman, 2009). Nevertheless, this study employed sex magazine circulation rates and broadband access data as state-level indicators of porn consumption:

(1) *Sex magazine circulation index:* State-level data on monthly subscriptions and sales for *Playboy* and *Penthouse* magazines for 2006 and 2007 were obtained from the Audit Bureau of Circulations (ABC). The ABC is an independent, non-profit organization that audits raw circulation data for most of the major magazines and newspapers in America. Baron and Straus employed data from the ABC to construct a magazine circulation index based on the circulation rates for eight adult magazines. However, as of 2009, *Playboy* and *Penthouse* are the only two adult magazines that have maintained the services of ABC.

(2) Broadband access percentage: Available data on household internet usage were obtained from the population survey conducted by the US Census Bureau. Data were also obtained from *Networked Nation: Broadband in America 2007,* a supplementary study conducted by the U.S. Census Bureau (United States Department of Commerce, 2007). These sources provide state-level data on the percentage of households with access to the internet through *broadband* and

dial-up for 2007 (United States Department of Commerce, 2007). Because there is no direct measure for state-level, online pornography consumption, this current study employed state-level broadband access data as an indirect (proxy) measure for state-level pornography consumption. It is assumed that households with internet have unlimited access to pornographic images, videos, and literature online.

Gender equality.

Baron and Straus (1989) constructed an index in three domains—economic, political and legal indicators—to measure gender equality. However, this study will use three composite indices published by the Institute for Women's Policy Research—an independent, non-profit organization (Institute for Women's Policy Research, 2004; Whaley, 2001). The indices are female employment and earnings, female political participation, and female social and economic autonomy. These indices were calculated using data from the Urban Institute, the U.S. Department of Labor, U.S. Department of Commerce, the 2000 census, and the Current Population Survey for 2004 and 2005.

Each of the composite indices was calculated using four component indicators. In order to calculate a composite score, each of the four component indicators was first standardized; the observed value for the state was divided by the comparable value for the entire United States. The resulting values were summed for each state, to create a composite score. Therefore, each of the four component indicators had equal weight in the composite.

The researchers set the values for each of the components at desired levels to produce an *ideal score*. This applies to all components within all three composite indices used in the study. Therefore, high component scores indicate that the position and status of women in relation to men are closer to the *ideal* (Institute for Women's Policy Research, 2004).

The gender equality index is calculated as an aggregate of all three indices. This will be the standard measure for comparing levels of gender equality in all 50 states, plus the District of Columbia. The higher the score for a particular state, the higher the level of gender equality within that state. A brief overview of the sub-indices and component items is discussed below.

Employment and earnings sub-index: A composite score for female employment and earnings was calculated using these four components: (1) Percent of women in the labor force; (2) Percent of employed women in managerial or professional occupations; (3) Median annual earnings full-time, year-round for employed women (in 2005 dollars); and (4) Earnings ratio between full-time, year-round employed women and men (in percentage form). The higher the score, the closer women get to the *ideal status* in relation to men, in regard to employment and earnings.

Political participation sub-index: A composite score for female political participation was calculated using these four components: (1) Women in elected office composite index; (2) Percent of women registered to vote, 1998 and 2000;

(3) Percent of women who voted, 1998 and 2000; and (4) Number of institutional resources available to women in the state (2004). The higher the score, the closer women get to the *ideal status* in relation to men regarding political participation. For the District of Columbia there was no available data.

Social and economic autonomy sub-index: A composite score for female social and economic autonomy was calculated using these four components: (1) Percent of women with health insurance; (2) Percent of women with four or more years of college; (3) Percent of businesses that are women-owned; and (4) Percent of women living above poverty. The higher the score, the closer women get to the *ideal status* in relation to men regarding social and economic autonomy.

Control variables

A number of control variables are employed in this study and are discussed below:

Percentage of the population with incomes below the poverty level (U.S. Census Bureau, 2009): Previous research indicates that violent crime is associated with poverty (Blau & Golden, 1986; Wolfgang & Ferracuti, 1967). Rapists are more likely to come from areas with the greatest poverty and urban decay (Schwendinger & Schwendinger, 1983). Baron and Straus (1989) excluded this variable, percentage of the population with incomes below the poverty level, and used the Gini Index of Income Inequality instead because they believed that in using both variables together they would be measuring the same underlying

construct. This current study however, excluded the Gini Index because of a possible collinearity problem with the economic component utilized in the gender inequality index.

Percentage of the population that is non-white (U.S. Census Bureau, 2009): Most rapes in America are committed by whites and this is expected because whites represent 74 percent of the population (Walker et al., 2007). However, minorities (particularly African-Americans and Hispanics) commit disproportionately more violent crimes (Flowers, 1990). Rape, like other types of violent crime, is primarily an intra-racial crime, which means that minority women could be at greater risk of being raped than white women (La Free, 1982; Walker et al., 2007). Therefore, the percentage of minorities residing in a state may influence the rape rate. Baron and Straus (1989) incorporated the percentage of the population that is black as a control variable. However, this current study used the percent non-white instead, in order to control for Hispanics as well (Scott & Schwalm, 1988).

Ratio of males to females (U.S. Census Bureau, 2009): Some researchers have suggested that rape levels could be influenced by the sexual composition of the population (Brownmiller, 1975). They contend that when men greatly outnumber women, more men will choose to use force in order to gain sexual access (Baron & Straus, 1989; Scott & Schwalm, 1988). Therefore, states with higher scores on this indicator are predicted to have higher rape rates.

Median population age (U.S. Census Bureau, 2009): The investigator included this variable (not employed in Baron and Straus, 1989), because rape is disproportionately committed by persons in the 14-25 age-group -- this is widely accepted as the crime prone age-group (Lily et al., 2007). It should be noted also that rape victims are usually below 35 years of age. If younger persons are more prone to commit rape, or be victims of rape, it is reasonable to assume that as the median age within a state decreases that the rape rate will increase.

Percent college educated (U.S. Census Bureau, 2009): This study incorporated the percentage of the population above 25 that possesses a bachelor's degree or higher. It is generally accepted that index crimes are disproportionately committed by persons who do not have a college education. Strain and social learning are examples of theories that attempt to explain the criminogenic patterns that occur in *high risk* communities with increasing high-school dropout rates (Tonry, 2004; Walker, 2007).

Table 1 below provides a list of the variables that were used in this study:

Table 1. List of variables

Variable	Description
Dependant variable	
2007 Rape rates	UCR rape rates per 100,000 (*Federal Bureau of Investigation, 2007*).
Independent variables	
Sex magazine index	A composite index of audited magazine circulation rates for *Playboy* and *Penthouse* (*Audit Bureau of Circulations, 2009*).
Broadband access	The percentage of households with Internet broadband access published by the U.S. Census Bureau (*U.S. Census Bureau, 2009*).
Gender equality index	Measure of gender equality along three dimensions: (1) employment and earnings; (2) political participation; and (3) social and economic autonomy (*see below*)
Employment and earnings	Female employment and earnings calculated using median annual earnings, earnings ratio between women and men, percent of women in the labor force, and percent in managerial or professional occupations.
Political participation	Female political participation calculated using women in elected office, percent registered to vote, percent who voted in 1998 and 2000, and number of institutional resources available.
Social and economic autonomy	Female social and economic autonomy calculated using percent of women with health insurance, percent with four or more years of college, percent of businesses that are women-owned, and percent living above poverty (*Institute for Women's Policy Research, 2004*).
Control variables	
% Below poverty	Percentage of the population that is below the poverty level as of 2007 (*U.S. Census Bureau, 2009*).
% Non-white	Percentage of the population that is non-white, including Hispanics as of 2008 (*U.S. Census Bureau, 2009*).
Male/female ratio	Ratio of males to females as of 2008 (*U.S. Census Bureau, 2009*).
Median age	Median population age (*U.S. Census Bureau, 2009*).
% > 25 with college degree	Percentage with a college education above 25 (*U.S. Census Bureau, 2009*).

State-Level Analysis Plan.

Univariate, bivariate, and multivariate statistical techniques were used for this study. First, descriptive statistics were generated to determine the mean, standard deviation, skewness, and kurtosis for each variable. Skewness and kurtosis statistics determined if mathematical transformations were warranted to meet the assumptions of bivariate and multivariate techniques.

For the bivariate analysis plan, two-tailed Pearson's correlation coefficients were generated to determine if zero-order relationships exist. In addition, bivariate correlations were performed with sub-indices for the sex magazine circulation index and gender equality as well.

For the multivariate phase of this project, OLS regression was used to test hypotheses H_2 - H_4 using a two-step approach. In model 1, only the control variables were regressed against the dependent variable. In model 2, the dependent variables were added to the control only model. In addition, a separate regression analysis was generated examining single indicators that make up the composite measures (e.g., adult magazine circulation index and gender equality index).

CHAPTER IV

Results

Project A

Nonparametric chi-square test.

The results of the univariate analysis of males (n = 476) who intentionally viewed pornographic images since the beginning of the year are presented in table 2 below. The results show 2.1% of respondents preferred to view pornography offline, 80.7% preferred to view pornography online and 17.2% had no preference. Moreover, the observed counts for each category were significantly different than the expected counts (p = .000), providing support for the hypothesis that men prefer consuming online pornography much more so than offline media. Even if we combine those who prefer "offline" and "no preferences" together, the results still show preferences for online viewing (80.7%) over offline/no preferences (19.3%). It should also be noted that the data reported for women showed a similar trend (*see* Appendix B, for additional tables):

Table 2. Univariate chi-square test of porn viewing preferences of males

	Observed N (%)	Expected N (%)		
Offline	10 (2.1%)	158.7 (33.3%)	Chi-Square	496.35
Online	384 (80.7%)	158.7 (33.3%)	*df*	2
No preference	82 (17.2%)	158.7 (33.3%)	Asymp. Sig.	.000
Total	476 (100%)			

Project B

Descriptive statistics.

Descriptive statistics indicated that the data for *male/female ratio* was leptokurtic (1.93); *rape rate* was also leptokurtic (5.55) and positively skewed (1.47). Accordingly, natural logarithms for the *rape rate* and *male/female ratio* variables were computed in SPSS. Table 3 below presents the descriptive statistics for all variables used in the study. On a final note, because the District of Columbia did not have any data for the indicator, *female political participation*, the final multivariate tests of hypotheses only examined the 50 states.

Table 3. Descriptive statistics (n = 50)

			Range of Values		
Variable	Mean	S.D.	Minimum	Maximum	Skewness
2007 Rape rate (ln)	3.43	.32	12.10	77.40	-.27
Sex magazine index	6,364.43	1,695.75	3622.35	10677.45	.69
Broadband access	49.92	7.69	32.70	64.90	-.32
Gender equality index	3.92	1.49	1.47	7.00	.36
% Non-white	27.64	16.03	4.70	75.10	.88
% Below poverty	12.69	3.07	7.30	20.70	.54
Male/female ratio (ln)	-.03	.03	.90	1.09	.68
Median age	37.16	2.23	28.70	42.00	-.89
% > 25 with college degree	24.08	4.75	14.80	39.10	.68

(ln) = natural log

Bivariate analysis.

Table 4. Zero-order correlations of composite indices, control, and dependent variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) 2007 Rape rate (ln)	--								
(2) Sex magazine index	.149	--							
(3) Broadband access	-.175	.097	--						
(4) Gender equality index	.011	.240	.338*	--					
(5) % Non-white	.027	-.539**	.145	-.017	--				
(6) % Below poverty	.288*	-.394**	-.766**	-.341*	.201	--			
(7) Male/female ratio (ln)	.386**	.477**	.307*	.076	-.064	-.358*	--		
(8) Median age	-.406**	.205	-.113	.120	-.383**	-.176	-.407**	--	
(9) % > 25 with college degree	-.304*	-.081	.710**	.439**	.258	-.524**	-.107	-.015	--

(ln) = natural log

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

Theoretical variables: Table 4 above presents the results of a bivariate test of the variables used in the study. The percentage of households with broadband access is negatively associated with rape rates but weak and insignificant ($r = -.175$, $p > .05$). The direction of the relationship supports the safety-valve theory of pornography consumption (Baron & Straus, 1989). In contrast, sex magazine circulation is positively associated with rape rates but is also a weak and insignificant relationship ($r = .149$, $p > .05$).

As for the gender equality index, this variable is positively associated with rape rates but is very weak, almost zero, and statistically insignificant ($r = .011$, $p > .05$), offering support for neither competing explanations of gender equality on rape.

Control variables: Of the five control variables, four report statistically significant relationships. The percentage of households below the poverty level reports a weak to moderate, positive and significant association with rape rates ($r = .288$, $p < .05$).

This provides minimal support for the argument that poverty causes rape (Blau & Golden, 1986; Wolfgang & Ferracuti, 1967).

Another moderate, positive, and significant association with rape rates is evidenced with the male/female ratio variable ($r = .386$, $p < .01$). It can be cautiously stated that rape rates are influenced by the sexual composition of the population (Brownmiller, 1975). In other words, an increase in the number of males in relation to females is associated with an increase in rape rates.

Median population age is negatively associated with rape rates, moderate in strength and statistically significant ($r = -.406$, $p < .01$). The direction of the relationship provides some support for the assumption that rape is disproportionately committed by persons within the crime-prone age-group (Lily et al., 2007).

There is also a statistically significant, moderately strong, negative relationship between the percentage of the population above 25 years old with college degrees and rape rates ($r = -.304$, $p < .05$). This association conforms to prior research that finds poor schooling and low education levels are associated with violent crime (Tonry, 2004; Walker, 2007).

Finally, the percentage of the population that is non-white does not appear to be associated with rape rates ($r = .027$, $p > .05$). In this regard, one may cautiously differentiate rape from other types of violent crime generally associated with communities with large minority populations (Flowers, 1990; La Free, 1982; Walker et al., 2007).

Other noteworthy associations: There are a number of other noteworthy associations. First, broadband access is positively associated with the gender equality index ($r = .338$, $p < .05$). Based on this finding, it could be cautiously asserted that an increase in the opportunity to consume pornography is associated with an increase in gender equality, providing partial support for Baron (1990), and contradicting the popular feminist hypothesis (Brownmiller, 1975; Dworkin, 1979; Mackinnon, 2004).

Additionally, the percent of the population over 25 that is college educated is positively associated with gender equality ($r = .439$, $p < .01$). This relationship might be explained by the influence of a college education on male attitudes toward women, possibly reducing gender inequality. Furthermore, prior research indicates that a college education could have a positive impact on the empowerment of women, and this is an important factor in their struggle against institutional patriarchy (Austin & Kim, 2000; Carlen, 1996).

Another finding that reflects reasonable expectations is that sex magazine circulation is negatively associated with the percentage of the population that is non-white ($r = -.539$, $p < .01$). A possible explanation for this is that white males collectively have greater purchasing power and therefore buy magazines more frequently than non-white males. Alternatively, the content of *Playboy* and *Penthouse* magazines may target the preferences of white males more than non-white males.

Single indicators: Table 5 below presents the correlation coefficients for indicators that makeup the sex magazine circulation index and the gender equality index. There are several associations worth mentioning. Regarding the gender equality

indicators, female social and economic autonomy clearly stands out because it is the only indicator that has a statistically significant association with rape rates ($\underline{r} = -.272$; $\underline{p} < .05$). As female social and economic autonomy (hereinafter FSEA) increases, rape rates decrease. This finding provides modest support for the ameliorative feminist hypothesis (Messerschmidt, 1986; Siegel, 2007; Whaley, 2001; Whaley & Messner, 2002). Additionally, as expected, FSEA is positively and significantly associated with the other indicators of gender equality—political participation ($\underline{r} = .381$, $\underline{p} < .01$) and female employment and earnings ($\underline{r} = .877$, $\underline{p} < .01$).

Finally, in regard to sex magazine circulation it should be noted that increases in *Penthouse* circulation rates is strongly associated with increases in *Playboy* circulation rates ($\underline{r} = .767$, $\underline{p} < .01$). This finding is in line with reasonable expectations as one may conclude that states with high levels of *Playboy* consumption will also have high levels of *Penthouse* consumption.

Table 5. Zero-order correlations of single indicators and dependent variable (n=50)

	(1)	(2)	(3)	(4)	(5)	(6)
(1) 2007 Rape rate (ln)	--					
(2) Playboy circulation rate	.155	--				
(3) Penthouse circulation rate	.076	.767**	--			
(4) Political participation	.051	.217	.297*	--		
(5) Employment & earnings	-.224	-.094	.291*	.288*	--	
(6) Social & economic autonomy	-.272*	.134	.440**	.381**	.877**	--

(ln) = natural log

* p < .05 ** p < .01 *** p < .001

Ordinary Least Squares (OLS) Regression

Model 1: Controls only: Table 6 below presents the results of an OLS regression with just the control variables. The controls-only model explains 37.8% of the variation in rape rates and is statistically significant ($R^2 = .378$, $p < .001$). The results indicate that the percentage of the population that is below the poverty level ($\beta = .449$, $p = .025$) and the male/female ratio ($\beta = .469$, $p = .008$) are significant predictors of rape rates, while the influence of median population age and percent over 25 with a college education on rape rates is rendered statistically insignificant when controlling for the other control variables.

Table 6. OLS regression on 2007 rape rates with control variables only (n = 50)

	Unstandardized Coefficients		Standardized Coefficients		
Model 1	b	Std. Error	β	T	Sig.
(Constant)	3.936	1.090		3.611	.001
% Non-white	-.002	.003	-.101	-.715	.478
% Below poverty	.046	.020	.449	2.316	.025
Male/female ratio (ln)	4.537	1.648	.469	2.753	.008
Median age	-.025	.023	-.175	-1.110	.273
% > 25 with college degree	.000	.012	.005	.028	.978
R^2	.378 ***				

(ln) = natural log

* p < .05 ** p < .01 *** p < .001

Model 2: Controls and theoretical variables: Table 7 below presents the results of an OLS regression for the independent variables along with controls. According to the analysis, the amount of variance explained when the theoretical variables are introduced to the model increases moderately (from 37.8% to 43.6%) and remains statistically

significant. It should be noted that when the theoretical variables are included, the influence of the percent below the poverty line and the male/female ratio are no longer statistically significant (male/female *approaches* statistical significance with $\underline{p} = .052$). However, the most important observation to be made is that the theoretical variables do not significantly predict rape rates when controlling for other variables and therefore, fails to support hypotheses 2, 3, and 4.

Table 7. OLS regression on 2007 rape rates with controls & theoretical variables (n = 50)

	Unstandardized Coefficients		Standardized Coefficients		
Model 2	b	Std. Error	β	T	Sig.
(Constant)	4.021	1.318		3.051	.004
% Non-white	-.002	.003	-.086	-.553	.583
% Below poverty	.042	.027	.398	1.588	.120
Male/female ratio (ln)	4.125	2.057	.399	2.005	.052
Median age	-.027	.024	-.184	-1.091	.281
% > 25 with college degree	-.019	.017	-.257	-1.157	.254
Sex magazine index	.000	.000	.048	.240	.812
Broadband access	.005	.010	.122	.482	.633
Gender equality index	.042	.030	.197	1.428	.161
R^2	.436 **				

(ln) = natural log

* p < .05 ** p < .01 *** p < .001

It is worth mentioning that broadband access is now positively related to rape rates ($\beta = .122$, $\underline{p} = .633$), whereas the zero-order correlation evidenced a negative relationship ($\underline{r} = -.175$, $\underline{p} > .05$). The reversal in directions is a sign of a potential problem with multicollinearity but diagnostics failed to produce evidence of collinearity since VIF scores were five and under. Upon close inspection of the correlation matrix, broadband

access and % below poverty exhibit a high zero-order association ($\underline{r} = -792$, $\underline{p} < .01$). Another regression model was computed with % below poverty *excluded* from the analysis and the results are presented in table 8 below.

As table 8 demonstrates, the removal of % below poverty decreased the amount of explained variance by 3.6% but the model still remains significant ($R^2 = .401$, $\underline{p} < .001$). The removal of this variable made no substantive impact on the other variables in the model but for the broadband access variable. Access to broadband now shows a negative valence ($\beta = -.099$, $\underline{p} = .649$) but remains statistically insignificant. Based on this model, though not statistically significant, both measures of pornography consumption support the safety valve argument because of the negative valences.

Table 8. OLS regression on 2007 rape rates without % below poverty (n = 50)

	Unstandardized Coefficients		Standardized Coefficients		
Model 2a	b	Std. Error	β	T	Sig.
(Constant)	5.661	.835		6.780	.000
% Non-white	-.001	.003	-.048	-.308	.759
Male/female ratio (ln)	3.654	2.072	.353	1.763	.085
Median age	-.037	.024	-.259	-1.576	.125
% > 25 with college degree	-.028	.016	-.376	-1.765	.085
Sex magazine index	.000	.000	-.031	-.158	.875
Broadband access	-.004	.009	-.099	-.459	.649
Gender equality index	.047	.030	.220	1.574	.123
R^2	.401 **				

* p < .05 ** p < .01 *** p < .001

Model 3: Controls and single theoretical indicators: The regression model showed signs of severe problems with multicollinearity (VIF scores were well above 10 for the social & economic autonomy indicator). This is no surprise given the strong association between the employment & earnings indicator and the social & economic autonomy variable ($\underline{r} = .877$, $\underline{p} < .01$) reported in table 5. Additionally, the social & economic autonomy variable was strongly associated with % below poverty ($\underline{r} = .776$, $\underline{p} < .01$) and % of those, 25 and older, with a college degree ($\underline{r} = .883$, $\underline{p} < .001$). For these reasons, a regression model could only be run with the following control variables— % nonwhite, male/female ratio, and median age, and theoretical indicators—*Playboy* circulation rate, *Penthouse* circulation rate, political participation, and social and economic autonomy. The results of this regression analysis are presented in table 9 below.

Table 9. OLS regression on 2007 rape rates with controls & single theoretical indicators (n = 50)

	Unstandardized Coefficients		Standardized Coefficients		
Model 3	b	Std. Error	β	T	Sig.
(Constant)	6.907	1.236		5.589	.000
% Non-white	-.001	.003	-.068	-.427	.671
Male/female ratio (ln)	4.029	2.238	.390	1.800	.079
Median age	-.031	.026	-.212	-1.197	.238
Playboy circulation rate	.000	.000	.173	.719	.476
Penthouse circulation rate	.000	.000	-.188	-.685	.497
Political participation	.015	.010	.195	1.432	.159
Social & economic autonomy	-.320	.140	-.342	-2.290	.027
R^2	.372 **				

(ln) = natural log

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

Model 3 above explains 37.2% of the variation in rape rates and, based on diagnostic statistics, multicollinearity issues are not evident. The results from this model are intriguing. Among the theoretical indicators, only social & economic autonomy achieves statistical significance (β = -.342, $\underline{p}$ = .027). As female social and economic equality increases, rape decreases. On the other hand, the female political participation indicator, though not statistically significant, suggests support for a backlash effect since the valence is positive (β =.195, $\underline{p}$ = .159). The same type of conflicting empirical evidence occurs with the magazine circulation rates for *Playboy* (β = .173, $\underline{p}$ = .476) and *Penthouse* (β = -.188, $\underline{p}$ = .497) as well.

CHAPTER V

Discussion

The results of the analysis offered empirical support for only one of the four hypotheses presented in this study. The survey, designed as a pilot study on porn consumption habits, provides reasonable support for the hypothesis that men who consume pornography prefer the internet to traditional media such as hard-copy magazines and DVDs (Hypothesis 1). Although the data were drawn from a convenience sample of college students, one can cautiously argue that consumers of pornography prefer online access to offline media such as magazines and DVDs.

This assumption about porn consumption habits is reinforced by the changing consumption trends that have led to the sharp decline in overall magazine and newspaper sales in America, and this is further supported by the fact that major corporations devote millions of dollars towards the maintenance of the online versions of their magazines and newspapers. Therefore it should come as no surprise that the pornography industry, like other types of business, have addressed the variable habits of its customers to maintain the profitability of their business (Hogg, 1999; Madler, 2008).

Regarding the state-level analysis of pornography consumption and rape rates, the investigator expected to find a significant relationship between broadband access and rape rates (Hypothesis 2), and a significant relationship between sex magazine circulation rates and rape rates (Hypothesis 3). However, the statistical analysis of household broadband access and state-level rape rates was not statistically significant. The analysis

of the direct measure, sex magazine circulation rate, yielded similar findings to that of broadband access, e.g., inverse association and statistical insignificance.

It is a noteworthy observation that both measures of pornography consumption were negatively associated with rape rates (*see* table 8). The direction of these relationships are *inconsistent* with Baron and Straus's (1989) findings, which favored the theoretical assertions of anti-porn feminists that as pornography consumption increases then rape rates would increase. However, the results of this analysis failed to show a statistically significant association between pornography consumption and rape rates; even if these variables were statistically significant, the beta coefficients still produced an effect size that was near zero ($\beta_{\text{sex magazine index}} = -.031$ and $\beta_{\text{broadband access}} = -.099$).

In regard to gender inequality, the investigator expected to find a significant association between the gender equality index and rape rates (Hypothesis 4). However, the results of the OLS regression show that these two variables are not statistically significantly associated. In spite of this, the additional analyses examining the predictive power of single indicators taken from the composite measure find that female social and economic autonomy is a statistically significant predictor of rape rates, supporting the argument to some degree that gender equality decreases rape. However, female political participation, though not statistically significant, evidenced a positive relationship that is supportive of a backlash argument.

With respect to the control variables, the study found that the *male/female ratio* was either statistically significant (Model 1 p value = .025) or approached statistical significance (Model 2 p value = .052; Model 2a p value = .085; Model 3 p value = .079) and consistently generated the highest beta values in the regression models.

The *male/female ratio* was also a significant predictor of rape rates in the Baron and Straus (1989) study, and one can therefore make a cautious argument that the relationship between this variable and rape has remained consistent over time. It is interesting to note that this association is clearly evident for the state of Alaska, a state that has reported high levels of rape for three decades and, coincidentally, has the largest proportion of males in relation to females—for example, in 2008, Alaska had the highest male/female ratio score (1.09) and the highest rape rate (77.4 per 100,000 persons) among the 50 states and the District of Columbia (see Appendix C, for data by State).

This could be the most compelling finding in the context of this study as it provides support for the *sexual access* theory—that levels of rape are influenced by the sexual composition of the population. One may cautiously conclude that when males greatly outnumber females, then in a highly competitive environment, males may be more inclined to use force in order to gain sexual access (Scott & Schwalm, 1988). There is limited empirical evidence to support alternative explanations for Alaska's remarkably high levels of rape, such as its large number of temporary immigrant workers, large Native American population, unique climatic conditions and its comparatively low population density. However, it is likely that the sexual access theory is still only one plausible explanation among many.

Possible limitations.

Ultimately, the results of this study fail to replicate Baron and Straus's (1989) findings. An explanation for this could lie in the measurement strategies employed in this study of pornography consumption and gender equality. It would therefore be misleading

to conclude that these associations no longer hold true based on the results of this study. For instance, it is open to debate whether this study's measurement strategy for pornography consumption was adequate in the sense that *Playboy* and *Penthouse* are not hard-core pornographic magazines. Perhaps it is hard-core pornography that influences rape rates.

Additionally, this study does not utilize a direct measure for online porn consumption and this could be another inherent shortcoming. Still, it should be noted that even if online pornography subscriptions were published and audited by an independent body, this would still be an imperfect measure of porn consumption because it excludes the activity of those who consume *free* pornography through online piracy and file sharing websites, an issue that is also applicable to non-pornographic media as well (e.g., online piracy of music and movies has certainly garnered the attention of the entertainment industry). It is therefore difficult to conceive of a way to reliably measure the pornographic consumption habits in America when the internet has no national borders, and people are illegally downloading porn from websites within the comfort and privacy of their own homes.

In terms of gender equality, the inconsistent results might be related to how this concept was measured in this study. Baron and Straus's gender equality index included a measure for state laws that advance women's rights, a legislative component that was not included in the current study. It is conceivable that the inclusion of this dimension of gender equality could have made a difference in this current investigation but the data was not available through the Institute for Women's Policy Research.

Another possible limitation with the measure of gender equality employed for this study is related to an indicator, female labor force participation, that is included in the *employment and earnings* sub-index. Prior research calls into question the use of female labor force participation, arguing that it may not accurately reflect women's actual status for two reasons. First, there are many women who are qualified professionals who choose to stay at home in order to do *home-schooling,* for example, or merely to gain more contact time with their infant children, and this trend would *decrease* gender equality scores. Second, increasing numbers of working class women who are forced to seek menial jobs will increase gender equality (Foglia, 1990). It is therefore possible that situations such as these could lead to an imprecise measure of gender equality.

Another possible limitation is the use of UCR data and the well-known problem of underreporting. Prior research shows that the majority of rapes are intimate-partner assaults, or incidents in which the victim knew the perpetrator and the ones that are reported to the police are usually rapes committed by strangers (Ferguson & Hartley, 2009; Walker et al., 2007). Therefore, the theories tested in this study may be unable to properly account for intimate-partner rape. Additionally, UCR data may reflect differential reporting of rape by law enforcement agencies. In other words, the manner in which rape is investigated and defined has an impact on how each police department does its reporting (Bart & Kimball, 1992). Given these known weaknesses, however, the UCR currently gives the best picture of state-level rape rates since the NCVS program, though compelling, does not allow for state-level analysis.

Finally, the use of a state-level analysis to test rape theories presents another limitation in terms of the inferences that can be made (Austin & Kim, 2000; Baron &

Straus, 1989). Some critics contend that cities, counties, and standard metropolitan statistical areas (SMSA) are more homogenous and contain less internal differences than states and may therefore yield different results (Bart & Kimball, 1992; Loftin & Hill, 1974). It may therefore be useful for future studies to compare associations at multiple levels and determine whether there are consistencies in these relationships using different units of analyses.

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APPENDIX A

Consent Form and Questionnaire

Dear Student:

If you are 18 years or older then you are eligible to participate in this survey. Your input will contribute greatly to understanding trends in the area of media consumption.

I wish to assure you that participation is voluntary and, seeing that you will be asked sensitive questions about your consumption habits, I have made this an anonymous survey. Students have been chosen randomly to participate in this research and I do not intend to link answers to the identity of respondents.

If you choose to participate you can skip any questions that make you feel uncomfortable. The questionnaire will take less than 1 minute to complete, but please be advised that you can withdraw from the survey at any time. This research goes towards the fulfillment of a Master's thesis and I thank you in advance for your help. If you have any questions about the research please contact me at:

PHONE: 856.562.3613
EMAIL: vaughncrichlow@gmail.com

FACULTY SPONSOR: Tony R. Smith, Ph.D.
PHONE: 856-566-7462
EMAIL: smithto@rowan.edu

Thank you,

.....
Vaughn J. Crichlow

If you have any questions about your rights as a research subject, you may contact the Associate Provost for Research at:

Rowan University Institutional Review Board for the Protection of Human Subjects
Office of Research
201 Mullica Hill Road
Glassboro, NJ 08028-1701
Tel: 856-256-5150

Please answer the following questions as honestly as possible. Evaluate yourself carefully and, where appropriate, mark ONE box with an "X" for each question.

1. Since the beginning of the year (January 1, 2009), have you ever intentionally viewed pornographic?

   [0] NO

   [1] YES

2. Which one of the following BEST describes your pornography viewing PREFERENCES? *Please check only ONE box below:*

   [0] OFFLINE VIEWING -- I prefer to view pornography that is NOT on the internet such as magazines, pictures, DVDs, et cetera.

   [1] ONLINE VIEWING -- I prefer to view pornography on the INTERNET (e.g., pictures, videos that are streamed to your computer or iPod, live webcams, or downloading pornographic movies).

   [2] NO PREFERENCE -- I prefer to view both online and offline types of pornography.

   [3] I DO NOT LIKE PORNOGRAPHY

3. You are a: [1] MALE [0] FEMALE.

4. You are _____ years old.

**** END OF SURVEY ****

APPENDIX B

Additional Tables

RESULTS (H_1)

Table 1a. Gender of Respondent (n = 1569)

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	992	63.2	63.8	63.8
Male	564	35.9	36.2	100.0
Total	1556	99.2	100.0	
Missing	13	.8		
Total	1569	100.0		

Table 1b. Since the beginning of the year (January 1, 2009), have you ever intentionally viewed pornographic images? (n = 1569)

	Frequency	Percent	Valid Percent	Cumulative Percent
NO	703	44.8	45.1	45.1
YES	855	54.5	54.9	100.0
Total	1558	99.3	100.0	
Missing	11	.7		
Total	1569	100.0		

Table 1c. Which one of the following BEST describes your pornography viewing PREFERENCES? (n = 1569)

	Frequency	Percent	Valid Percent	Cumulative Percent
OFFLINE	58	3.7	3.7	3.7
ONLINE	631	40.2	40.5	44.2
NO PREFERENCE	143	9.1	9.2	53.4
I DO NOT LIKE PORNOGRAPHY	727	46.3	46.6	100.0
Total	1559	99.4	100.0	
Missing	10	.6		
Total	1569	100.0		

Crosstabs

Table 1d.

		Gender of Respondent		
		Female	Male	Total
Since the beginning of the year (January 1, 2009) have you ever intentionally viewed pornographic images?	NO	637	61	698
		64.4%	10.9%	45.1%
	YES	352	498	850
		35.6%	89.1%	54.9%
	Total	989	559	1548
		100.0%	100.0%	100.0%

X^2 (df) = 412.8 (1), p = .000

Table 1e. Viewing Preferences by Gender of Respondent (n = 827)

		Gender of Respondent		
		Female	Male	Total
Which one of the following BEST describes your pornography viewing PREFERENCES?	OFFLINE	46	11	57
		13.5%	2.3%	6.9%
	ONLINE	237	391	628
		69.3%	80.6%	75.9%
	NO PREFERENCE	59	83	142
		17.3%	17.1%	17.2%
	Total	342	485	827
		100.0%	100.0%	100.0%

X^2 (df) = 39.8 (2), p = .000

NOTE: Those who stated, "I do not like pornography" were excluded from this analysis.

Table 2f. Univariate chi-square test of porn viewing preferences of males (n = 476)

	Observed N (%)	Expected N (%)		
Offline	10 (2.1%)	158.7 (33.3%)	Chi-Square	496.35
Online	384 (80.7%)	158.7 (33.3%)	*df*	2
No preference	82 (17.2%)	158.7 (33.3%)	Asymp. Sig.	.000
Total	476 (100%)			

NOTE: This analysis was restricted to males who intentionally viewed pornography since the beginning of the year (this explains why there are nine fewer cases than table 2e above).

APPENDIX C

State-Level Data: Single Cases

State	Rape rates	M/F Ratio	% Non-white	% > 25 w. College	% Household Broadband	Sex Mag. Index	Gender Index	% Below Poverty
Alabama	33.4	.94	31.60	19.0	37.4	4144.60	3.52	16.60
Alaska	77.4	1.09	34.30	24.7	62.5	7089.74	3.98	9.80
Arizona	29.3	1.00	41.60	23.5	53.9	6192.91	3.48	14.10
Arkansas	44.7	.96	24.40	16.7	38.2	4802.73	2.57	17.60
California	24.7	1.00	57.70	26.6	56.4	5766.68	6.59	12.40
Colorado	41.1	1.02	29.00	32.7	58.0	7873.77	4.92	11.50
Connecticut	18.8	.95	26.20	31.4	59.7	5600.40	6.70	7.90
Delaware	38.9	.94	31.70	25.0	50.4	6181.27	6.12	10.30
District of Columbia	32.6	.90	65.90	39.1	52.0	4524.77	N/A	17.10
Florida	33.7	.96	39.70	22.3	53.2	5766.53	3.29	12.10
Georgia	22.8	.97	41.90	24.3	53.9	4006.30	2.92	14.30
Hawaii	25.4	1.02	75.10	26.2	57.6	4871.75	3.60	8.50
Idaho	38.5	1.01	14.90	21.7	45.6	6403.55	2.60	12.10
Illinois	31.9	.97	35.30	26.1	51.6	6870.49	4.05	11.90
Indiana	27.5	.97	16.80	19.4	42.3	7183.75	3.80	12.30
Iowa	30.3	.98	9.70	21.2	46.8	9488.57	3.72	11.00
Kansas	44.3	.99	19.70	25.8	55.2	7549.53	5.31	11.20
Kentucky	32.6	.96	12.20	17.1	40.0	5708.54	2.15	17.20
Louisiana	32.4	.94	38.10	18.7	42.9	4756.89	5.08	18.80
Maine	29.7	.95	4.70	22.9	48.4	6709.69	6.17	12.20
Maryland	21.0	.94	42.30	31.4	56.1	5561.52	5.60	8.30
Massachusetts	25.3	.94	20.80	33.2	61.1	5206.02	3.99	10.00
Michigan	45.5	.97	21.50	21.8	45.9	7082.76	6.62	13.00
Minnesota	36.0	.99	14.60	27.4	53.0	8137.73	6.24	9.50
Mississippi	35.6	.94	41.30	16.9	33.2	3622.35	1.89	20.70
Missouri	29.2	.96	15.90	21.6	45.3	7318.15	4.77	13.30
Montana	30.3	1.00	12.10	24.4	40.2	9027.12	4.51	14.10
Nebraska	29.7	.98	15.90	23.7	54.1	8882.53	3.77	11.10
Nevada	42.7	1.04	42.90	18.2	54.4	8317.10	3.31	10.60
New Hampshire	25.3	.97	6.90	28.7	64.9	6838.80	3.17	7.30
New Jersey	12.1	.96	38.30	29.8	57.1	5019.57	1.47	8.50
New Mexico	52.4	.97	58.30	23.5	43.2	5846.98	4.32	17.90
New York	15.2	.94	40.00	27.4	54.1	4575.55	4.58	13.30
Nort Carolina	26.3	.96	32.80	22.5	47.1	4686.03	4.32	14.30
North Dakota	32.4	1.01	10.40	22.0	48.7	10677.45	4.20	11.80
Ohio	38.8	.95	17.50	21.1	48.8	7282.93	2.44	13.10
Oklahoma	43.1	.98	28.60	20.3	38.8	5480.84	2.54	15.80
Oregon	33.5	.99	20.00	25.1	57.5	6220.59	4.38	13.00
Pennsylvania	27.7	.95	18.60	22.4	47.7	6645.30	2.14	11.60
Rhode Island	24.2	.94	21.20	25.6	59.3	5615.65	3.11	11.90
South Carolina	39.5	.95	34.80	20.4	39.1	729.89	2.27	15.10
South Dakota	38.7	.99	13.90	21.5	47.5	8719.67	1.82	13.20
Tennessee	35.3	.95	22.90	19.6	41.6	4709.30	1.73	15.80
Texas	35.3	1.00	52.60	23.2	47.6	4503.59	2.90	16.30
Utah	34.3	1.02	18.30	26.1	59.3	4173.57	3.15	9.80
Vermont	19.8	.97	4.80	29.4	46.8	7225.84	5.84	10.10
Virginia	22.6	.96	33.00	29.5	53.3	5333.84	2.45	9.90
Washington	58.4	1.00	24.50	27.7	58.4	5,957.59	7.00	11.40
West Virginia	32.7	.96	6.50	14.8	32.7	6,123.25	1.80	17.10
Wisconsin	52.6	.99	14.90	22.4	52.6	9,212.76	5.15	10.80
Wyoming	50.4	1.03	13.20	21.9	50.4	10,359.30	4.20	9.50