

## ABSTRACT

Title of Thesis: BEYOND THE MAINSTREAM: A THEORY  
TEST OF SCHOOL ENGAGEMENT AND  
SEXUAL ASSAULT

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While many mainstream criminological theories purportedly explain all types of crime, next to nothing in the literature tests for rape and sexual assault – an exceptional oversight, considering that an alternate theoretical explanation (feminist theory) exists for this class of crime. This thesis hopes to begin to rectify this gap in the literature by testing an aspect of control theory, the school bond. Using the National Youth Survey, logistic regression is applied to test the effects of school engagement (academic and athletic) on rapes attempted or completed by male adolescents. Support for neither the control theory hypothesis nor the feminist theory hypothesis is found, as neither engagement variable reaches significant results. However, this thesis still hopes to emphasize the necessity of literature specifically testing rape and sexual assault, and offers directions for future research to expand on this.

BEYOND THE MAINSTREAM: A THEORY TEST OF SCHOOL ENGAGEMENT  
AND SEXUAL ASSAULT

by

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## Chapter 1: Introduction

Rape and sexual assault have one of the lowest reporting rates of all crimes, with roughly half not reported to police. According to the Rape, Abuse, and Incest National Network (RAINN, 2009), using data from the National Crime Victimization Survey, there is an average of 207,754 victims of rape and sexual assault each year. Roughly one in six American women and one in 33 American men will be victims of attempted or completed rape in their lifetime; rape (and sexual assault in general) is one of the few crimes in which female victimization far eclipses that of men (RAINN, 2009).

At especially high risk of victimization are adolescents. At most points in the past few decades, juveniles have comprised about a quarter of the population, but nearly half (44%) of all rape and sexual assault victims are under the age of 18 (RAINN, 2009).

While the risk of perpetration for juveniles is not as high, in 1995, nearly a third of those arrested for sex offenses (16% for forcible rape, 17% for others) were juveniles (RAINN, 2009). Juvenile data, then, in terms of rape and sexual assault seem to be an important area to focus on.

Sexual assault has serious consequences for victims, potentially more so than even other violent crimes. Depression, self-injury, and suicidal thoughts are more likely among rape and sexual assault survivors; they are three times more likely to suffer from depression and four times more likely to contemplate suicide (RAINN, 2009). The likelihood of substance abuse increases, too, making victims 13 times more likely to abuse alcohol and 26 times more likely to abuse drugs (RAINN, 2009). They are six times more likely to suffer from post-traumatic stress disorder, as well as the flashbacks and triggers that might come with it (RAINN, 2009). Other potential consequences



include Stockholm Syndrome, sleep disorders, eating disorders, psychosomatic pain symptoms, and, in cases of childhood sexual abuse, certain mental illnesses such as borderline personality disorder or dissociative identity disorder. Other consequences of sex such as sexually transmitted infections or pregnancy are also possibilities, made worse by potential trauma from a violent crime. In addition, rape is an offense wherein the victim and offender are both stigmatized, sometimes equally or out of proportion. If a woman chooses to report her rape to the police, she is likely to face disbelief or harsh treatment if the case goes to court, as well as a lack of sympathy if her rapist is a current or former romantic partner; if she does not report, she may feel guilt, shame, or worse trauma as a result of covering up the crime.

As a result, preventing crimes such as rape and sexual assault becomes immensely important. Knowledge about the causes of and risk factors for these violent crimes, as well as what types of prevention programs might work, has grown considerably in the past few decades, as rape laws change and our understanding of the subject subsequently expands as well. One of the most fruitful lines of inquiry has proven to be rape-supportive beliefs – attitudes that are in line with defending rape as acceptable and perpetrating a culture that does so (“she dressed this way, she had it coming,” “she was asking for it,” “she led me on”) – revealing both their status as a risk factor and the possibility of reversing them as a useful prevention tool. Early aggression in boys, too, has been linked to later violent delinquency and crime, such as rape and sexual assault; alcohol and drug use, a risk factor for many instances of delinquency, has also been linked to sexual assault.

Little research, however, has been done to specifically attempt to connect aspects of different theories to rape and sexual assault. Most of the literature on theory testing focuses on delinquency as a whole or takes a very cursory approach to addressing sexual assault (i.e., violent delinquency, with only some attention paid to specifics). Sexual assault literature, too, needs to be put in a broader theoretical perspective; few studies specifically connect different theories to why offenders commit sexual assault. Within this limited literature, there is even less focus on juvenile offenders, a clear population of interest. However, there does exist a theoretical explanation specifically aimed at encompassing rape, sexual assault, and all such behaviors along that spectrum (such as sexual harassment and the aforementioned rape-supportive beliefs) – feminist theory.

Feminist theory states, simply, that patriarchy – the political, economic, and social dominance of men in society – is responsible for violence against women. Humphreys and Herold (1996) summarize feminist attitudes towards rape by stating that “the problem of sexual coercion is fundamentally rooted in an unequal power distribution in society that favours [sic] men.” This patriarchal system creates a “rape-supportive culture,” meaning that misogyny, “a generalized hostility towards women,” is not only pervasive, not only acceptable, but thoroughly integrated into the institution of culture as a whole.

Because patriarchy affects all men within a society, feminist theory does not distinguish between internal or external factors attached to individuals; rather, it states that within all men is the potential for sexual assault. Even if they have not specifically engaged in sexual violence against women, men can still be complicit in the patriarchy in ways such as believing rape myths or telling rape jokes. These behaviors can exist along a continuum ranging from indifference to these beliefs (such as not purposefully

endorsing a rape myth, but not speaking out against it, either) to active perpetration of them (such as voicing support of the beliefs). So because all are indoctrinated into the system of patriarchy, there is no specific typology of a rapist. Simply being male is the true risk factor, though some men are more indoctrinated into the patriarchy than others.

Most mainstream criminological theories would, of course, disagree, setting the two in opposition. It is clear that mainstream theories need to specifically test rape and sexual assault so as to begin to rectify the gaps in the literature and understand which theoretical approach can best address this topic. This thesis hopes to begin to expand the field's knowledge in this direction, testing the assumptions made by feminist theory against those made by a mainstream theory – specifically, Hirschi's social control theory.

In this thesis, I examine the relationship between school engagement and the perpetration of rape and sexual assault. I have selected school as the domain for this study because in middle and high school, juveniles spend a considerable amount of time at school and involved in school-related activities; it is a significant part of their life and so a significant influence upon them. In addition, studies overall find that victimization rates at schools are quite high for the time that students spend there. Over half (54%) of juvenile property victimizations happen either at school or coming from/going to school, while only 12% of property victimizations happens in the next most risky place, a juvenile's home (Finkelhor & Ormrod, 2000). While generally, violent crimes are not nearly as prevalent, a recent study finds that up to 54% of sexual assaults perpetrated against middle school girls and 40% perpetrated against high school girls take place at school – a significant amount for a place which only sees them about eight hours a day,

five days a week, and nine months a year (Young et al., 2009). As a result, focusing on school factors seems to be productive and likely to bring implications for change.

The literature on control theory, which I will address shortly, also reinforces the use of school factors as valuable independent variables to study. Engagement, however, is a somewhat trickier concept to capture. Lanza and Taylor (2010) describe school disengagement as “a lack of student involvement and commitment to school curriculum and activities,” consisting of “multiple components... behavioral, affective, and cognitive.” They suggest, as examples, attentiveness to school tasks, feelings about, towards, and elicited from school, attitudes toward school, and interactions between students and schooling (Lanza & Taylor, 2010). As a result, one can think of engagement as a measure that combines the elements of Hirschi’s social bond (attachment, commitment, involvement, and belief), looking at both attitudinal and behavioral factors that result in a composite measure of a student’s relationship with their school.

## Chapter 2: Literature Review

### Control Theory

Gottfredson (2006) describes the central assumption of control theory as “all people are alike, in that they tend to pursue self-interest – they seek pleasure and try to avoid harm.” As a result, control theories focus on the restraining factors that cause people to conform to society and refrain from engaging in deviance, the “glue connecting the individuals to society” (Gottfredson, 2006). A well-known example is Hirschi’s social control theory, which posits four elements to the social bonds that hold most people to conformity – attachment, commitment, involvement, and belief. Attachment is based on affective bonds, ensuring that individuals will be sensitive to the opinions of others and act in line with their wishes and expectations. Commitment refers to investment in conventional conduct, ensuring that individuals have more to lose by deviating if they have higher stakes in institutions of conformity. Involvement is time spent engaged in conventional activities, ensuring that individuals will simply not have time or energy to engage in deviant behavior instead. Belief refers to one’s respect for and conviction in the morality of conventional social rules, ensuring that one’s own moral code is in line with that which society expects as well (Hirschi, 1969). Kempf (1993) summarizes the link between the social bond and delinquency: “as the elements of the social bond become weakened, the probability of delinquency will increase.”

Kempf seeks to gauge the status of control theory in the field of criminology, undertaking a thorough meta-analysis and empirical evaluation that the literature was previously lacking. Her work will provide a solid background for what evidence two decades of empirical studies have shown regarding control theory.

After an extensive search, she finds 71 empirical studies between 1970 and 1991 that meet the criteria of published studies which cite Hirschi (meaning they are using his theory specifically, not another control theory) and specifically acknowledge a test of control theory. She specifies school as one of “the most important indicators”; one of the most consistent findings in the literature is a correlation between strong school bonds and low delinquency. She also names commitment as “the element with the strongest explanatory value,” though attachment is the most commonly tested element. None of the elements of the bond, however, are found in all of the studies, and only 17 of the studies included all four elements. She examines the specifications of the elements of the bond for each study, as well as the samples, the methodology, and the conclusions; she compares each study not only to the other studies, but to Hirschi’s original work. She finds that “the majority of reviewed studies... professed at least conditional support for control theory,” showing that the theory has at least some backing. In the end, however, she concludes that while control theory has plenty of potential as a theory, the field has yet to achieve the potential, listing a series of standards control theory must meet and problems it must address before it can reach the level it ought to (Kempf, 1993).

Several of Kempf’s criticisms will be addressed in this thesis. Although some are beyond its scope (she recommends collecting data specifically to test control theory, but I use secondary data), her suggestions of including serious crime in tests of control theory and developing crime-specific models have already been addressed – by testing rape and sexual assault, I am doing just that. She states that control theory tests must be performed on representative samples; the data set that I am using, the National Youth Survey (to be fully described in the methods section below), is widely recognized as being a

representative sample. She stresses the importance of multi-item indicators for the constructs of control theory, and my methods will be tailored towards achieving this. Finally, Kempf emphasizes the attention needed for establishing temporal order; as the National Youth Survey is longitudinal, it seems well suited for doing just that (Kempf, 1993). By addressing many of her concerns in this way, I hope to bolster the ability of control theory to reach its potential as laid out by Kempf.

Thirteen years after Kempf's article, Gottfredson reaches a very different conclusion, providing an updated meta-analysis (though, as a control theorist himself, his work must be viewed with some caution). He agrees with Kempf's assertion that control theory succeeds in "the degree to which people agree with the theory," stating that control theory "tend[s] to be consistent with the major empirical generalizations in criminology" (Kempf, 1993; Gottfredson, 2006). He contradicts her, however, in saying that control theory "has the highest level of [empirical] support of all theories of crime causation" and that control theory can be said to be doing "exceptionally well" based on standards of "consistency with the facts" (Gottfredson, 2006). In the time since Kempf has written, it appears that control theory has at least somewhat addressed her concerns and gathered a more solid set of empirical evidence.

School is one of the archetypal conventional social institutions; literature has shown, repeatedly, that truancy and drop-out (a lack of *involvement* in school, at the least) are correlated with delinquency. School is generally an arena in which juveniles learn to behave in conventional, societally approved ways – listening to one's teachers, doing one's homework, behaving respectfully in class, all leading up to a high school diploma which will ensure a better job than those who do not have one. Each element of the social

bond can easily be tied to schools, school success, and subsequent stronger conventional bonds. Attachment to one's teachers results in a desire to do well to earn their approval. Commitment to school leads one to desire success and set conventionally approved school goals. Involvement in school activities can manifest in academic clubs (such as student government), school sports, or other activities such as music or theatre. Finally, belief in the school system's validity as an institution leads one to "play by the rules" that schools set out, following the intended paths, listening to teachers, and acting in line with the school's morality and acceptable conduct.

In addition to learning how to act in accordance with societal rules, school also provides an arena for juveniles to learn socialization alongside one another. Students have many interactions with friends and other peers while at school, and it is likely to be their primary place of interaction with people their own age for much of their adolescence. As a result, it stands to reason that a breakdown in one's bond to school would also lead to a breakdown of proper societal norms of interaction and a disengagement from conventional standards of how to relate to others. This, in turn, could lead to a higher likelihood of engaging in violent crime, especially a violent crime (rape and sexual assault) that is the nonconsensual form of an otherwise acceptable human interaction.

Kempf and Gottfredson do agree on the solid state of evidence regarding school as an important factor in studying delinquency. Gottfredson states that "school performance...strongly predicts involvement in delinquen[cy]... Those who do well in school are unlikely to get into trouble with the law" (Gottfredson & Hirschi, 1990). While many studies do make the link between a lack of school attachment, commitment, involvement, or engagement and delinquency, however, there is almost nothing in the



literature specifically testing this for sexual assault. Freeman and Temple (2010) do find a relationship between college aspirations and a lower likelihood of sexual assault victimization (though it drastically drops in significance when controlling for other factors), but their study does not pay any attention to perpetrators of sexual assault.

### *Empirical Literature on Control Theory*

Ageton (1983) provides the most comprehensive approach to specifically linking school factors with perpetration of sexual assault, using data from the National Youth Survey (which I will be using as well). She seeks to create a complete picture of sexually assaultive behavior in adolescents, from prevalence and incidence to patterns and characteristics in both victims and offenders. She uses three waves of the NYS (1978, 1979, and 1980) for which she has collected additional, sexual assault-specific data, as well as the first two waves (1976 and 1977) for longitudinally comparative purposes.

Ageton creates a measure called “school normlessness,” a composite measure that seeks to evaluate the youths’ “belief that one has to break rules to achieve conventional goals” and includes items such as “Making a good impression is more important than telling the truth [to teachers]” (Ageton, 1983). She also measures school involvement, which reflects the amount of time the adolescent spends on academic and other school-related activity. She finds a significant difference between school normlessness measures for sexual assault offenders and non-offenders, with the former scoring higher, as predicted (Ageton, 1983).

Ageton’s measures of involvement and normlessness do look at important factors in a youth’s life, and the former even has some measures in common with engagement,

but they do not tell the whole story of being bonded to school. The additional measure of engagement is a very important one to add to the literature, which is what I hope to do here.

Studies have looked at the links between certain components of engagement and connected it to violent delinquency (though most of these studies, as mentioned, do not include sexual assault in their measures). Dornbusch et al. (2001) specifically examine attachment to school, something they term “school connectedness,” taking measures from the National Longitudinal Study of Adolescent Health such as “do you feel close to people at your school?”, “do you feel safe at your school?”, and “are you happy to be at your school?” Their hypothesis states that “adolescents with positive feelings toward their school are less likely to be deviant,” and they find a significant negative relationship between school attachment and violent delinquency in adolescents (Dornbusch et al., 2001). Wiatrowski, Griswold, and Roberts (1981) reformulate Hirschi’s social bonds using factor analysis on data from Youth in Transition. They, too, find substantial negative effects of school attachment on delinquency, as well as a smaller but still significant effect for school involvement. Henry, Knight, and Thornberry (2011) do discuss school disengagement and its impact on dropout, delinquency, and substance use, but they define the term as primarily a function of school performance. Using data from the Rochester Youth Development Study, they find a significant positive relationship between disengagement and a number of delinquency measures, including serious violent crime (Henry, Knight, & Thornberry, 2011).

Hirschfield and Gasper (2010) use a definition of engagement that probably fits the one laid out by Lanza and Taylor best. They split the concept into three separate ideas

– behavioral, emotional, and cognitive engagement. Behavioral engagement is “participation in school-related activities, both academic and extra-curricular,” and is described with questions comparing time spent engaged in the former with time spent on leisure activities (Hirschfield & Gasper, 2010). Emotional engagement “emphasizes positive emotional dispositions and affective responses toward educational processes and practices, as well as actors,” and is measured in terms of how much students would miss aspects of the school experience if no longer exposed to them (Hirschfield & Gasper, 2010). Cognitive engagement is described as “the mental labor that one invests or is motivated to invest in academic tasks,” and is subsequently measured through psychological investment in school, responses to poor school performance, and how well students feel they can learn various subjects (Hirschfield & Gasper, 2010). Using School Development Program Evaluation data, they test the hypothesis that increased engagement (of all three types) will decrease delinquency. They find that while, surprisingly, cognitive engagement has a positive relationship with delinquency, the other two, behavioral and emotional, have the expected negative relationship.

These findings provide a sound empirical basis for expecting that, according to control theory, school engagement will decrease the likelihood of delinquency, especially violent delinquency, such as sexual assault. These studies also guide the measures that I use to operationalize engagement, including elements from all of the successful measures they have tested. I primarily rely on Lanza and Taylor’s definition, but tailor them towards Hirschfield and Gasper’s findings as well, focusing more on behavioral and emotional engagement rather than cognitive.

### Feminist Theory

Rooted – as its name suggests – in the feminist movement, feminist theory belongs to the critical school, a set of theories set in opposition to mainstream theories. Rather than ask why people commit crime (or why people conform to the law), critical theories take a step back, asking instead where laws come from and how certain systems, such as the legal system, work to protect the interests of those in power. Feminist theory in particular examines the dominance of men (termed “patriarchy”) and the subsequent subordination of women. Within criminology, this manifests in explanations of violence against women. Rape, due to its status as a crime even more overwhelmingly male than most in perpetration and overwhelmingly female in victimization, is of particular interest to feminist theorists.

Examining how patriarchy conditions men is the first step in determining why sexual violence is perpetrated. King and Roberts (2012) state that patriarchy contributes to “sex role stereotyping” as well as gender inequality; Scully and Marolla (1985) elaborate on this, saying that “traditional socialization encourages males to associate power, dominance, strength, virility and superiority with masculinity.” These behaviors, in their extreme, culminate in utilizing force and sometimes violence to obtain sex, which renders rape “the end point in a continuum of sexually aggressive behaviors that reward men and victimize women.” Thus, rather than a pathological behavior resulting in some sort of inadequacy, be it biological, strain, or control-related, rape is “an extension of normative male behavior” (Scully & Marolla, 1985). The purpose of sexual violence is to “enable men to assert their power over women,” and patriarchy becomes “the ultimate source of rape’s causes” (Baron & Straus, 1987; Bryden & Grier, 2011).

Johnson (1980) explains the implications: this theory “does not attribute violence to the aberrant behavior of a lunatic fringe of normal male society; rather, it locates... sexual violence in the everyday fabric of relations between men and women in patriarchal society.” Essentially, rape becomes an act perpetuated by normal men, which the literature emphasizes over and over again: “Rapists are generally ‘normal’ men. Imprisoned rapists... appear to have basically normal personality profiles.” “Otherwise normal [i.e., non-psychopathological] men can and do rape.” “The overall picture is that of an average man.” (LeGrand, 1973; Scully & Marolla, 1985) The key to the feminist perspective is that, while not all men commit “sexually aggressive act[s],” the great majority of men “have the attitudes and beliefs necessary,” since patriarchal values are taught indiscriminately (Scully & Marolla, 1985). This leads to the view of rapists as not just “a few ‘sick’ men,” but “a more diverse collection... relatives, dates, supervisors, neighbors, fellow students, intimates, and other acquaintances” (Scully & Marolla, 1985; Bryden & Grier, 2011).

Feminist theory essentially states that patriarchy gives all men the tools to initiate sexual violence against women. Other factors are far less relevant, so the relationship that mainstream theories would predict do not exist (or if they do, they are weak and circumstantial). While not all men act on what they are taught, they are all taught the same thing, so predicting who will act is independent of other factors.

In fact, the relationship may be the opposite of what control theory would predict. Because patriarchy is a mainstream value that is societally constructed and so must be taught as well as learned, it stands to reason that conventional societal institutions would hold an important role in this teaching process. As I stated earlier, school is a significant

part of the lives of most juveniles, so as an institution usually upheld as important by society, if patriarchal values are what society emphasizes, schools would at least reinforce if not outright teach them. Therefore, a strong bond to schools might actually increase a male adolescent's likelihood of engaging in rape – if they are highly engaged in an institution that supports patriarchy, they may be more likely to internalize and uphold those values. So feminist theory would likely predict a positive relationship between school engagement and likelihood of engaging in rape or sexual assault.

### *Empirical Literature on Feminist Theory*

The literature of feminist theory is generally not experimental; it is difficult, after all, to control for or test an indoctrination into patriarchy when it is a society-wide phenomenon. Research dedicated towards establishing its influence instead tends to focus on self-report surveys testing attitudes and beliefs as well as different levels of sexually assaultive behavior. Rape is tested most often, because it is both the most extreme and the most straightforward to describe and define, although studies do inquire after a spectrum of behaviors.

Findings from these studies have been quite consistent – studies from the 1980s are likely to see similar results as studies from only a few years ago. One of the most frequently reported findings is a widespread level of willingness to rape, even without actual perpetration. This is one of the statistics that has stayed stable: Greenflinger and Byrne (1987) report “approximately one out of three” college men stating “they would rape a woman if they were guaranteed they would not be caught and punished,” and Reilly, Lott, Caldwell, and DeLuca (1992) confirm this.

Scully & Marolla (1985) interviewed 114 rapists convicted and sentenced to a Virginia prison, interviewing them about their experiences. This study samples on the dependent variable, as well as only interviewing convicted rapists (as I stated earlier, approximately half of rapes go unreported), so selection bias, as well as a limited sample coming from only one prison in one state, may mean the results are not generalizable past this population. However, the quotations from the rapists still reveal a certain amount of evidence that could lend credence to the feminist perspective.

Misogyny is evident in some: “She was there to get my hostile feelings off on.” “Rape is a man’s right. If a woman doesn’t want to give it, the man should take it. Women have no right to say no. Women are made to have sex. ...Some women would rather take a beating, but they always give in; it’s what they are for.” More than that, though, the evidence for patriarchal influence is plain – so many of them want to assert their dominance, to feel in control, to conquer somebody that they view as lesser than themselves. “Rape has a feeling of total dominance.” “Rape gave me the power to do what I wanted to do without feeling I had to please a partner or respond to a partner. I felt in control, dominant.” “Seeing them laying there helpless gave me the confidence that I could do it... With rape, I felt totally in charge.” “We felt powerful, we were in control. ... She wasn’t like a person, no personality, just domination on my part. Just to show I could do it – you know, macho.” “After rape, I always felt like I had just conquered something.” Again, certain rapists themselves seem to agree that, by raping, they are acting out a patriarchal script of men as dominant and women as subordinate, a script whose only influence is that of society.

Another consistent finding is the association of rape myths and rape-supportive beliefs with self-reported sexually aggressive behavior or likelihood to rape, supporting the idea of a continuum wherein an unconscious shift from one end to the other is not uncommon. Reilly et al. (1992) find this correlation in a questionnaire drawn from a heterogeneous, non-random sample of college students (from classes including psychology, English, electrical engineering, computer science, nursing, sociology, and speech). They state that “self-reported likelihood to rape is better predicted by rape-supportive beliefs” and that “the acceptance of rape myths, traditional sex roles, and adversarial sexual beliefs distinguished a sample of sexually aggressive men from nonaggressive men.” Rape myth acceptance and rape-supportive beliefs are the strongest difference between men who self-report a higher likelihood of rape and those who do not, found by both this study and that of Greenflinger and Byrne (1987).

Edwards, Turchik, Dardis, Reynolds, and Gidycz (2011) perform a review of studies testing belief of rape myths. From four different studies, they find that “between 25% and 35% of respondents... agree with the majority of these rape myths” and that “men are more likely than women to endorse rape myths,” specifically, about twice as likely. The former number increases to 66% when using open-ended questions asking participants to list beliefs (Edwards et al., 2011). They find reason to believe, however, that the numbers might be even higher: “rape myths may often operate implicitly rather than explicitly, and... self-report rape myth measures may not be able to detect these more subtle rape myths.” They can sometimes be detected with more subtle questions; for example, even if a man may not explicitly agree that a woman is to blame for her own



rape, they might believe that her actions in some way contributed to her assault (Edwards et al., 2011).

They also find that explicit and implicit power-sex association measurements are not correlated, so they suggest that “the association between power and sex is not explicitly acknowledged” in typical research situations, and therefore “rape myths may not be activated or endorsed, especially on a self-report measure” (Edwards et al., 2011). Most of the studies reviewed have been conducted with college students, and as such tend to rely on relatively small sample sizes (around 200-300), as well as a selection bias due to frequently drawing students from psychology classes or students who are self-selected through survey response. However, several have been replicated with randomly selected adult populations and larger sample sizes (1000-2000) and have shown similar results, so these findings do appear to be generalizable.

Other research, aimed at providing evidence for existence of the patriarchy, is either qualitative or simply observational, gathering data to show how male domination is perpetrated through societally accepted channels. Evidence gathered from schools on this topic is extensive, starting with the subject matter being taught in schools.

Ogle and Batton (2009) ask, “To what extent are the accomplishments of males and females throughout history equally represented in text books?” Zittleman and Sadker (2002) set out to answer just that question, using 23 textbooks they call “leading teacher education texts,” published between 1998 and 2001. These textbooks are introductory or foundation texts in reading, social studies, science, and math, and they find that approximately 3% of the total space of these books is devoted to talking about gender (Zittleman & Sadker, 2002). Moreover, the answer to Ogle and Batton’s question appears

to be “very little.” In the reading books, there are twice as many male characters as female, and the latter are overwhelmingly cast in the roles of “passive observers” focused on “domestic life.” They also note that the texts offer no discussion of these stereotypes or strategies to confront them in classroom discussion (Zittleman & Sadker, 2002). One of the social studies texts offers a sentence about the role of women in war: “Women often followed the troops.” In light of this, it is not surprising that they also found that while students had no problem naming important men in the history of the United States, naming even five important women was difficult (Zittleman & Sadker, 2002). The science textbooks fared no better – none of them mentioned female scientists at all. One math textbook included a sentence about a female mathematician, Hypatia; this followed “detailed analysis” on the work of seventeen male mathematicians (Zittleman & Sadker, 2002). The imbalance is clear.

Sexuality education (or sex ed) courses, especially those that are abstinence-only, have also been shown to perpetrate misinformation that is sometimes specifically targeted at women. Greenblatt (2008) summarizes a 2004 House Committee on Government Reform evaluation of the curricula from popular, congressionally funded, abstinence-only sex ed programs. The evaluation concluded that 80% of the programs were “imbued with misinformation,” including “treating gender stereotypes as fact” (Greenblatt, 2008). Some of the statements from these curricula include: “Testosterone, a male hormone, leads men to interest in the desire for sexual release and pleasure... [while] [t]he estrogen in females tends to focus them primarily on nurturing, warmth, closeness and security.” “[G]irls have a responsibility to wear modest clothing that doesn’t invite lustful thoughts.” “Watch what you wear, if you don’t aim to please, don’t dress to tease.” The

last especially contains phrasing very close to common rape myths that blame women's clothing for men's sexual assault.

How students are taught as well as what they are being taught is important to consider, and gender bias emphasizing men over women can be found there as well. The American Association of University Women conducted a 1992 report synthesizing national education data revealing trends in this direction. They find, overall, that "teachers give more classroom attention and more esteem building encouragement to boys" (AAUW, 1992). They review a study finding that boys in elementary and middle school called out right answers eight times as often as girls, and while girls were told to "raise your hand if you want to speak," teachers were more likely to listen to boys who called out (AAUW, 1992). Research also showed a tendency for teachers to choose classroom activities or presentation formats more relevant to boys or preferred by them, and that this was especially evident in math and science classes. This unequal encouragement may contribute to the results of a study of high school seniors which found that 64% of boys who had taken physics or calculus classes planned to major in science or engineering, as compared to only 18.6% of girls who had taken the same subjects (AAUW, 1992).

The National Center for Fair and Open Testing also describes a gender bias in standardized testing, specifically the SAT, which is frequently used for college admission and scholarship decisions. For the first few years the SAT was offered, females scored higher than males on the Verbal section, while males scored higher on Math. The ETS subsequently set out to "balance" the Verbal section, manipulating the questions accordingly, but no such attempts were made to "balance" Math; males have since

outscored females on both Verbal and Math (FairTest, 2007). Research also shows that males are more likely to make educated guesses, whereas females' unwillingness to do so negatively impacts their scores (FairTest, 2007). Females, too, are impeded by the time limit, and it has been shown that their scores markedly improve when it is removed (males' scores do not show the same degree of improvement). It seems this important test is biased in multiple ways.

Many rape and sexual assault prevention programs focus on dispelling rape myths, and have demonstrated at least some success in this regard, showing that affecting beliefs such as those taught by patriarchy may make a change (Borges et al., 2008; Weisz & Black, 2001; Hillenbrand et al., 2010; Foubert & Newberry, 2006; Foubert et al., 2010; Foubert & Cremedy, 2007; Stephens & George, 2009; Klaw, Lonsway, Berg, Waldo, Kothari, Mazurek, & Hegeman, 2005). Most of these programs have relatively small sample sizes – none of the cited are over 300 – and this, as mentioned earlier, tends to be a problem with studies such as these. Several may not be generalizable as a result of a mostly white sample (most notably the Foubert studies of The Men's Program), and several have not been tested for long-term effects. Many do have random assignment, though, and some have been replicated and shown consistently promising results.

The presence of these programs in schools (all of these have been imparted at either a high school or college level) shows that this is fertile ground for changing attitudes and beliefs. If they can be learned in schools, after all, then they can also be contradicted there. This may also provide hope should feminist theory's assumptions be valid; if schools teach patriarchal values and high levels of engagement lead to a stronger belief in those values, those with greater school engagement may also be more open to

prevention programs taught in schools. Klaw et al. (2005) find, in addition, that the “processes involved in developing rape consciousness appear parallel to those involved in the development of feminist identity,” meaning that a feminist bent to the programs being taught might prove even more useful in contradicting rape-supportive education.

### Hypotheses

This thesis examines the link between school factors – specifically school engagement – and sexual assault in juveniles, a relationship that has not been specifically examined before. I will posit two opposing hypotheses as to this relationship. Control theory’s assumptions would hypothesize a negative relationship, whereas feminist theory’s would assume the opposite.

*Hypothesis 1:* Higher levels of school engagement will result in a lower likelihood of engaging in rape or sexual assault (control theory).

*Hypothesis 2:* Higher levels of school engagement will result in a higher likelihood of engaging in rape or sexual assault (feminist theory).

## Chapter 3: Methods

### *Data*

The data set which I will use for this study comes from the National Youth Survey, a longitudinal study surveying a nationally representative sample of 1,725 adolescents (and one parent of each adolescent) between the ages of 11 and 17. The data were collected in five consecutive waves from 1976 to 1980, then in three-year intervals until 1993. The sample which I will be studying consists of observations from the first five waves, collected in 1976, 1977, 1978, 1979, and 1980. I will not include the later waves, since they take much of the sample out of the age range of adolescence which is the focus of this thesis.

This data set is useful for my purposes because it is such a broad, nationally representative sample. Sexual assault offenders tend not to be correlated with characteristics such as race, place of living, or age, so a sample that is as broad as possible is helpful to get the most representative and valid results. In addition, the longitudinal data help to encompass a range of ages – preteens, adolescents, and young adults, which correspond to the time before peak violent offending, peak violent offending, and after peak violent offending. This, in turn, is more helpful than a cross-sectional study or shorter longitudinal study would be, as it captures the scope of offending and gives data that other data sets may miss. A longitudinal sample is helpful in establishing temporal ordering; I can set the independent variable before the dependent variable, as data for the NYS were gathered annually. Finally, because of the relatively low attrition rate of the NYS, the sample size stays more stable throughout the five waves I am using than it might with other similar nationally representative surveys.

### Sample

The step-by-step derivation of my sample is provided in Table 1. This thesis focuses solely on male adolescents, as they are the primary perpetrators of sexual assault. It provides better grounds for generalizing conclusions about rape and sexual assault with such a population, and it will make statistical analysis more relevant. Male adolescents comprise 918 members of the sample in the first wave of the NYS.

Next, I narrowed the sample down by attrition. The NYS has relatively low attrition rates, so only 45 people were dropped from the sample (22 as a result of attrition from Wave 2, 23 as a result of attrition from Wave 3 – anyone who left after Wave 4 would only be missing one or two waves of data), bringing it to 873. Additionally, I removed observations for whom data on the dependent variable was missing for three non-consecutive waves, as this would mean that there was more data missing than present for them. I removed six observations from the sample because of this, leaving me with a sample of 867.

Finally, I looked at the answers to the dependent variable of sexual assault perpetration. Respondents who did not record any affirmative responses, but did not answer this question for at least one wave of data were dropped from the sample. There is no way of knowing whether or not they committed sexual assault during the missing year or years; as a result, comparing them to those with negative responses for all five years could be inaccurate and minimize the external validity of this thesis. Respondents who had missing data but did record at least one non-zero response were kept, since they did commit at least one rape or attempted rape, and so could be compared to others who had done so. 123 observations were dropped as a result of this condition.

The final sample consists of 744 male adolescents, ranging from ages 11 to 17 at the first wave of data. The age distribution is relatively stable; 44.8% of the sample is between the ages of 11 and 13, and 88.7% is between the ages of 11 and 16 at the first wave of the study. The majority of the sample (78.5%) is white, while 16.1% is black and 5.4% comprises the other groups – “Chicano,” Asian, American Indian, and “other.” Forty-three percent of the sample inhabits suburban areas, 30.6% rural areas, and 25.8% urban areas. Most of the adolescents in the sample (82.9%) have married parents, and 11.0% have parents who are separated or divorced. Approximately a third (33.2%) of the adolescents’ families have an annual income between \$38,000 and \$68,100 and approximately a quarter (24.6%) have incomes between \$68,100 and \$98,500, adjusted for inflation to current dollars. Slightly over a quarter (26.5%) have incomes under \$38,000, while 16.0% earn over \$98,000 a year.

These proportions are, for the most part, closely in line with those found in the entirety of the first wave of the NYS. Table 2 compares the adolescents found in this sample with the male adolescents from the first wave of the NYS who are not in the sample. I ran a Chi-square test on each set of categorical variables and found a few significant differences (marked as such in the table), namely in age, parent marital status, and family income. The mean age of those not in the sample is 14.3, while the mean age of those in the sample is 13.87, a significant difference. The parental marriage status of the two groups is significantly different as well; my sample has more adolescents from families with two married parents and fewer adolescents from divorced families. The families of the adolescents in the sample are more likely to have higher incomes; they have both a lower percentage of families with incomes under \$38,000 and a higher



percentage of families with incomes between \$98,000 and \$144,000. None of the other differences are significant.

### Variables

#### *Dependent Variable*

The concept of the dependent variable consists of two parts, rape and sexual assault. Rape, as defined by the FBI's Uniform Crime Report, is "penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim" (FBI, 2011). Sexual assault covers a broader range of behavior, essentially any unwanted sexual contact up to attempted rape, including unwanted kissing or touching.

Only one measure on the NYS asks about rape and sexual assault. Phrased similarly across all five waves studied here, the question asks in Wave 1, "How many times in the last year have you had (or tried to have) sexual relations with someone against their will?" The answers are recorded numerically (and the responses range from 0 to 20); this study will simply examine whether or not sexual assault was committed, not its frequency. The frequency distribution (Graph 1 and Table 3) of the variable shows that the majority of reports hover in the lower range (one or two offenses), making a cumulative count more useful. Subsequently, I have coded a cumulative measure as a dummy variable which records "0" if the respondents have said that they did not have or try to have sex with anyone against their will for all five waves of data and "1" if there was any number other than zero reported in any of the waves of data.

Out of the sample of 744, 52 have committed completed or attempted rape at some point during the five waves of the study being used (7.0% of the sample). A full

description of how the variable breaks down for those with at least one offense (70 overall counts for the 52 offenders) can be seen in Tables 4 and 5. The waves with the highest rate of offending are Wave 1, Wave 2, and Wave 5; 68.6% of the offending takes place in the first three waves and 31.4% in the last two. Most of the offenders are 16 or 17, with 78.6% of offenders between the ages of 14 and 19.

This measure certainly has its problems – most pointedly, it asks only about rape or attempted rape. Sexual harassment or any other type of sexual assault that stops short of attempted rape is not included in the NYS at all, and I feel that its inclusion would go a long way in evaluating all types of sexual assault properly. However, it does at least include attempted as well as completed rape, and its language is inclusive of types of assault that go past physical force. “Sexual relations,” too, seems to encompass more than just sexual intercourse, so it may make respondents think in other terms (such as oral sex). The gender-neutral phrasing also works to the benefit of this measure’s inclusivity; other similar studies have asked this question in a limited way, specifying male offenders or female victims, and while I am focusing on male offenders (and feminist theory generally specifies a female victim as well), the lack of gendering potential victims does, overall, make it a better measure.

Coding the dependent variable across all five waves means that there will be some overlap between the independent variables (which are taken from just the first wave) and the dependent variable. Consequently, I will re-run all analyses without the observations taken from the first wave to examine this issue.

### *Independent Variables*

The other core concepts being tested in this study is school engagement. To restate my earlier definition, school engagement is a composite measure of a student's relationship with their school. It involves "behavioral, affective, and cognitive" components, such as attentiveness to school tasks, participation in school-related activities, feelings about, towards, and elicited from school, attitudes toward school, and interactions between students and schooling (Lanza & Taylor, 2010). It is a complex concept that requires multiple measures to study. As a result, multiple variables from the NYS apply, and I have specifically broken them into measures associated with behavioral and emotional engagement (Tables 6a and 6b). The behavioral engagement measures reflect specific actions – school success (grade point average), participation in athletics, school clubs, and schoolwork, and specific time spent engaged in said activities. The emotional engagement measures reflect attitudes towards the importance of the above activities, attitudes about school success (being labeled as a "good student," grade point average), and feelings of isolation towards school.

To test whether these variables truly encompassed these two concepts, I ran a confirmatory factor analysis with these variables. (This analysis is a principal factor analysis; principal-component analysis and iterated principal analysis returned similar results.) An exploratory analysis also revealed that only two factors had eigenvalues above 1, so a confirmatory factor analysis upon two factors was acceptable. For purposes of the analysis, I summed the three time variables for time spent studying (how many afternoons during the week, how many evenings during the week, and how much time on weekends) into one composite time variable. Since each item had a response set of five

categories, this resulted in a scale ranging from 0 to 15; I subsequently recoded this scale to items ranging from 0 to 5 instead, so as to better match the scale of the other variables. I did this simply by dividing – values from 1 to 3 became 1, 4 to 6 became 2, 7 to 9 became 3, 10 to 12 became 4, and 13 to 15 became 5. This means that the new time variable represents a range of times spent studying, 0 meaning very little time during the week and 5 meaning a great deal of time. I repeated the same process for the variables representing time spent on athletic team activities and on school activities, creating and recoding new variables for those measures as well. To ensure that this new variable would function well as a replacement for the three previous variables for each concept, I ran the analysis once with these composite variables and once with each of the individual time variables, and found that the composite variables resulted in stronger factor loadings and stronger subsequent levels of Cronbach's alpha.

I also did not include the two variables inquiring after participation in athletics and school activities (though they are included in the table for descriptive purposes) because they are dichotomous, and including them may result in the creation of artificial factors, biasing the data (Floyd & Widaman, 1995; Kubinger, 2003). The four variables measuring isolation from school were reverse-coded.

The results of this analysis ( $n = 730$ ) are shown in Table 7. As the literature recommends retaining variables which load above a .3 or .4 as significant to the underlying factors, I have decided on the latter (Kim & Mueller, 1978; Manly, 2004). The variables I chose to retain have been marked accordingly on the table.

The two factors appear to reflect two different types of school-related activities – academics and athletics. Each factor is a combination of behavioral (time spent) and

emotional (attitudes), showing that in this case, engagement may be more dependent on the aspect of school life it originates from rather than the aspect of engagement. Contrary to my expectations, none of the isolation measures loaded above a .4 on any of the factors, nor did GPA or the school activities variables.

The first factor centers on athletics; the variables significantly loading onto it are composite time spent on athletic activities and how important school athletics have been to the respondent. The variable constructed for this factor, ATHLETICS, consists of these two variables summed together. The resulting scale is from 0 to 10, measuring attachment and commitment to school athletics. Everyone who responded with a “no” to the initial involvement question has a score of 0 for the overall athletics variable, as they were not asked the time or importance questions; I have coded their scores for those questions as a “0” rather than missing. This will result in those who do not participate in athletics having a lower level of engagement recorded, but leaving out that many values (320, 43.42% of my sample) resulted in a biased factor analysis, which would subsequently bias the regression as well. The lowest response for those who are involved is a 2, meaning that they spend very little time on athletics during a typical week and do not view being involved as very important. Cronbach’s alpha for this scale is .90, rendering it a very reliable scale.

The second factor encompasses academics. This factor is comprised of how much time the respondent spends on schoolwork, how important the respondent considers schoolwork, how important it is for them that their teachers think of them as a good student, and how important they consider a good grade point average. There is no direct involvement question, as students cannot officially opt out of participating in schoolwork.

As a result, the subsequent scale, ACADEMICS, has values of up to 20. The range is between 4 and 20 (as none of the respondents could respond with lower than a 1 on any of the four questions), ranging between those who do not spend much time on schoolwork or feel it is important to do so, in any capacity, to those who feel strongly on all four measures. This scale measures commitment to academics and could also be measuring, in part, attachment to teachers. Cronbach's alpha for this scale is .64, which is less than ideal, but still renders it a scale of average reliability.

The variable SCHL\_IMP ("how important is it for you to be involved in school activities?") loads onto the factor of academic engagement with a 0.44. However, because it is not theoretically related to the rest of the variables loading onto this factor (school activities and academics can be seen as mutually exclusive), I have chosen to exclude it. In addition, Cronbach's alpha for a scale which includes SCHL\_IMP is .62, so it is best to retain only the scale with the theoretically relevant items of academic engagement.

The full description of both independent variable scales can be found in Table 8.

#### *Control Variables*

In her data, Ageton uses as control variables age, race, family income, and place of residence (urban, suburban, and rural). I will also use these, as well as several variables on peer isolation, association with and commitment to delinquent peers, normlessness, and parental approval (Table 9). Peer isolation – "I don't feel that I fit in very well with my friends" and "My friends don't take much interest in my problems" – could be related to delinquency as well as school engagement, as one often socializes with peers in school and one could associate peer isolation with school isolation. The

next two come from Ageton again; she finds, in longitudinal analyses, that self-reported sexual assault is correlated with association with delinquent peers and that those who commit it are also more likely to be committed to said peers. I measure association with delinquent peers with a composite measure summing ten of the questions asked about peer delinquency in the NYS. They range from the very minor (“During the last year, how many of your close friends have cheated on school tests?” “...how many of your close friends have stolen something worth less than \$5?”) to the more serious (“...how many of your close friends have sold hard drugs?” “...how many of your close friends have hit or threatened to hit someone without any reason?”), and are all listed in Table 9. Each of these was measured on a scale from 0 to 5; summed, they created a scale that should have theoretically ranged from 0 to 50, but ended up with a range from 0 to 40. As with the time variables for academics, athletics, and school activities earlier, I recoded this scale to range from 0 to 5 instead. Anything from 1 to 8 was recoded to 1, 9 to 16 was a 2, 17 to 24 was a 3, 25 to 32 was a 4, and 32 to 40 was a 5. Commitment is measured by the question “If you found that your group of friends was leading you into trouble, would you still run around with them?”

Ageton also associates school normlessness (“To stay out of trouble, it is sometimes necessary to lie to teachers” and “At school it is sometimes necessary to play dirty in order to win”) with sexual assault in her study, and normlessness could easily cause disengagement from a conventional institution such as school. I have also added a peer normlessness measure (“In order to gain the respect of your friends, it is sometimes necessary to beat up on other kids”) as an additional measure of both normlessness and peer delinquency. Finally, parent approval of school performance (“how would your

parents react if you cheated on school tests?") is important – if they approve of a deviant behavior, that could negatively affect engagement through normlessness and also affect further deviance and delinquency.

### Analysis

Due to the nature of the dependent variable's frequency distribution, it is coded as a dichotomous variable. In addition, only 7.0% of the sample has a positive response to having ever committed rape or attempted rape, making this variable a rare event. In light of this, I will be running a logistic regression in order to analyze these data.

I first ran bivariate odds ratios on both ACADEMICS and ATHLETICS to show how each is related to the dependent variable. Next, I added in the control variables for two initial logistic regressions, one with just ACADEMICS and one with just ATHLETICS. Finally, the last model includes both of the independent variables of interest, as well as all twelve control variables. A complete table of descriptive statistics for all of the variables in the model is given in Table 10.



## Chapter 4: Results

### Odds Ratio

Table 11 shows the bivariate odds ratio of the two independent variables, ACADEMICS and ATHLETICS, looking at each variable on its own against the dependent variable.

Both of the two are very close to 1 and not statistically significant, meaning that the effects are not very strong □ the odds of someone with low levels of engagement in either academics or athletics engaging in rape do not differ greatly from the odds of someone with high levels of engagement attempting or committing a rape.

### Models 1 and 2: ACADEMICS and ATHLETICS

Next, the first of the logistic regressions of a single independent variable □ ACADEMICS □ and the twelve control variables is shown in Table 12.

The odds ratio for ACADEMICS remains the same (OR = 0.97); however, it is not significant at even a  $p < .1$ . In fact, only two variables in the model of twelve reach significance. SCHOOLNORM1 (“To stay out of trouble, it is sometimes necessary to lie to teachers”) is over 1 and significant at  $p < .1$  (OR = 1.33) and INCOME (estimated annual family income, measured in ordinal intervals of 1976 dollars) is over 1 and significant at  $p < .05$  (OR = 1.01).

Table 13 shows the regression results for ATHLETICS. Again, the odds ratio remains approximately the same for the independent variable (OR = 0.97), but it is not significant. Even fewer variables are significant in this model □ only one, in fact.

INCOME is again significant in this model at  $p < .05$ , and is similarly close to, if just over, 1 (OR = 1.10).

### Model 3: Final Model

Finally, Model 3 is the complete regression  $\square$  both ACADEMICS and ATHLETICS along with all of the control variables are included. This model is shown in Table 14.

As in the previous regressions, the odds ratios are very close to 1 (for ACADEMICS, OR = 0.98, and for ATHLETICS, OR = 0.97). Neither, however, has achieved significance in this model either.

As in the previous two models, INCOME is significant at  $p < .05$ , its magnitude similar to what it was in Model 1 (OR = 1.01). SCHOOLNORM1 becomes significant at  $p < .1$  again, and for the first time, SCHOOLNORM2 (“At school, it is sometimes necessary to play dirty in order to win”) is significant at the same level. Both are over 1 and relatively low in magnitude (OR = 1.33 and OR = 1.29, respectively). None of the other variables are significant.

### Temporal Ordering

As mentioned previously, taking the dependent variable from all five waves of data means that there is an overlap between one wave of the dependent variable and the independent variable, which could potentially compromise temporal ordering. As a result, I ran all of the above analyses without the dependent variable from the first wave. Although this resulted in a very small sample (only 4.95% of the sample having

committed attempted or completed rape), the results were virtually identical to those reported above. No new variables reached significance, the three variables that were significant remained so, and the coefficients and odds ratios did not appreciably change. Therefore, I believe that temporal ordering is not a serious concern with these data.

## Chapter 5: Discussion

### Hypotheses

The two hypotheses put forward in this thesis were in line with control theory and feminist theory, respectively. The variables used to test these hypotheses were commitment and attachment to schoolwork and teachers (ACADEMICS) and commitment and attachment to school athletics (ATHLETICS).

The first hypothesis, as posited by control theory, predicted a negative relationship between school engagement and rape; the more engaged a male student is, the less likely he will be to commit or attempt rape. Both coefficients of the two engagement measures I have tested here are negative; this result is consistent, spanning all three logistic regression models. However, neither variable's coefficient ever reached an acceptable level of significance in any of the three models. Therefore, the findings do not support control theory's hypothesis.

The second hypothesis, posited by feminist theory, predicted a positive relationship between school engagement and rape. Higher levels of school engagement are expected to result higher likelihood of committing or attempting rape. Since neither academic engagement nor athletic engagement attained significance in any of the models, but the value of the coefficients is still negative, this suggests that the effects they have are still more of what control theory would predict. There are also some other findings (to be mentioned shortly) which lend some credence to control theory, even if the primary variables being tested do not. Thus the findings do not support feminist theory, either.

### Other Significant Findings

Though neither of the independent variables being specifically tested were found to be significant, three of the control variables reached significance in the final model.

Two of them, the school normlessness measures, are significant at  $p < .1$ .

SCHOOLNORM1 is a Likert scale gauging response to the statement “To stay out of trouble, it is sometimes necessary to lie to teachers.” SCHOOLNORM2, structured the same way, states “At school, it is sometimes necessary to play dirty in order to win.”

The third significant variable is that of INCOME, the family’s approximate annual income the previous year (as estimated by the parent being interviewed), measured ordinally between \$6,000 or less and \$38,000 or more in \$4,000 increments. (The amounts are in 1976 dollars and are not, in the data, adjusted for inflation.) The odds ratio for the variable is greater than 1 and, though small (OR = 1.01), significant at  $p < .05$ , a higher level of significance than any other variable in the model. This finding states that, though the effect is very small, higher family income leads to an increased likelihood of engaging in rape. As this is the most significant finding in the model, it is certainly deserving of attention, regardless of the effect’s magnitude.

### Theoretical Implications

As stated above, the findings of this thesis cannot conclusively make any claims about control or feminist theory on this subject, especially not with direct regards to the independent variables being tested. However, some of the significant findings can indirectly lend credence to both hypotheses.

Income was found to be significantly, positively related to rape, which means that adolescent males from higher-income families are slightly more likely to engage in rape. Through a feminist lens, this finding makes sense. Those from higher-income families are likely to be more accepted by society, involved in society, and taught traditional societal beliefs, such as patriarchy. Even if they do not fully accept these beliefs or question them later in life, they are more likely to be immersed in them from a young age. As a result, they would be more likely to view patriarchal beliefs as normative and thus, more likely to engage in rape and sexual assault.

The findings of significance in regards to school normlessness reinforce Ageton (1983)'s research and provide a little more support for control theory. While normlessness, as a concept, is most often linked to anomie or strain theories, school normlessness can certainly be associated with control theory as well. As stated earlier, Ageton's measures encompass the idea that "one has to break rules in order to achieve conventional goals" □ which could be viewed as a negative measure of belief (Ageton, 1983). I summarized this element earlier as a willingness to "play by the rules" that schools set out, and Hirschi describes it as respect for the morality of conventional rules; the corollary would be not respecting them, and would thus result in school normlessness (Hirschi, 1969). Ageton's findings, with which the results concur, could thus be seen as in line with control theory, and this thesis as partially supporting it as well.

### Limitations

This thesis has a number of limitations that may affect the results. The most significant is the lack of specific testing for or controlling for patriarchal values and

beliefs; it would have been extremely difficult to specifically test if these beliefs come from the conventional institution of school, but including some specific tests of feminist theory would have strengthened these findings. Unfortunately, such a test was not possible within these data; some later versions of the NYS do include some questions that could have been useful, but they could not have been included without compromising the temporal ordering of the variables.

Another concern is the dependent variable; as mentioned in its descriptive section, its wording is restrictive, asking only after completed or attempted rape. As a result, this study's focus was restricted to solely making comments about rape, not all sorts of sexual assault as would befit a more inclusive study. A combination of questions would be an ideal measure for a concept such as this, and I am inevitably missing some amount of data due to the nature of the dependent variable's question. More thorough measures would likely result in more conclusive findings.

The distribution of the dependent variable, too, makes significant findings difficult to achieve. As I discussed earlier, only 7% of the sample has an affirmative response to having ever attempted or completed rape; this results in a very unequal distribution that makes comparison difficult. A model run on a sample with higher counts of rape or sexual assault would be more likely to detect significant results.

As described in my factor analysis procedure, I coded any missing values from the questions about commitment and attachment to athletics as "0," as too many responses had this value to simply drop from the sample (43.42%). As a result, anyone who does not participate in athletics has a lower overall level of engagement on one of

the variables than someone who does, even though this may not be an accurate reflection of either behaviors or attitudes.

Finally, the sample is overwhelmingly (78.5%) white; while this is a problem with the overall sample and not exclusive to my data set (78.9% of the Wave 1 NYS sample is white), it could still limit the generalizability of the findings.

### Directions for Future Research

Theory testing of rape and sexual assault remains an area that is drastically unexplored, so studies similar to this one with different mainstream theories are recommended. Future studies on this topic should seek to create a strong dependent variable; measuring more than just rape is essentially for a well-rounded set of findings. An ideal measure would the full spectrum of sexually assaultive behaviors □ starting with rape-supportive attitudes, working up to sexual harassment, and ending with attempted or completed rape □ with language that encompasses both physical and verbal force (such as emotional coercion, threats, or simply pressure). Failing that level of detail, however, simply measuring a solid set of levels of sexual assault (unwanted sexual contact of any kind as well as rape) is still better than a single question or two.

Tests of patriarchy and patriarchal beliefs are also important so as to have a basis against which to test mainstream theories. If no evidence is found for mainstream theories, but no evidence is found for feminist theory, either, then the former finding does us little good. A proper conceptualization and operationalization of patriarchy is essential for further theory testing. Ogle & Batton (2009) critique previous research that fails to do this and provide some directions for future research. Namely, they outline questions to be



answered in different domains in order to locate patriarchal influence (family, religion, government, and economy, in addition to education, as addressed earlier). Their article is an excellent starting point for operationalizing variables to measure patriarchy.

Finally, this thesis is far from being able to draw definitive conclusions about control theory's ability to explain rape and sexual assault. This topic should also be explored further, with other aspects of control theory (conventional family and conventional peers), as well as other operationalizations of the school bond. While certain aspects of the bond may not be able to explain rape, others could succeed where those failed. This subject is far from closed and deserves to be explored much further.

### Conclusion

Despite limitations and ultimately inconclusive results, the issue that has inspired this thesis is an important one that merits further work. It is important that theories be strengthened through accounting for this untested violent crime, and it is even more important for the future of rape and sexual assault prevention efforts. The only way to properly organize prevention efforts is to target the appropriate risk factors and treat them accordingly, and it is impossible to do this until we can empirically show what these risk factors may be. A solid body of work is essential to this task, and this thesis should be viewed as a first step towards creating it.

**Table 1. Tracking of creation of the sample (processes by which observations were dropped)**

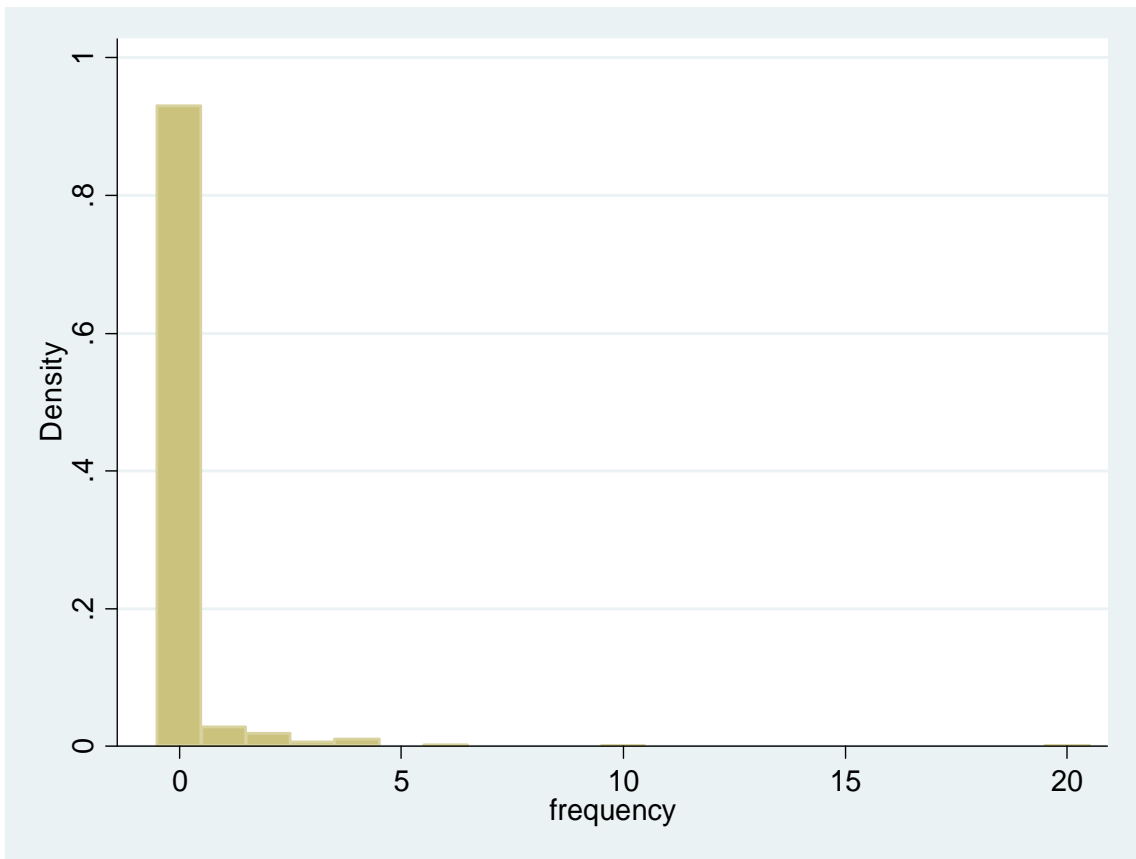
<b>Reason for Dropping Observations</b>	<b>Number of Observations Dropped</b>	<b>Size of Sample</b>
Original sample	--	1725
Males	807	918
Attrition at Wave 2	22	896
Attrition at Wave 3	23	873
Three non-consecutive waves of dependent variable missing	6	867
Missing waves of dependent variable along with no nonzero values	123	744
		<b>Final Sample: 744</b>

**Table 2. Comparison of descriptive statistics for final study sample with those not in sample from National Youth Survey, Wave 1**

Variable	Categories	Not in Sample	Study Sample
		(n = 174) Number (% of sample)	(n = 744) Number (% of sample)
<u>Race</u>	White/Anglo	130 (74.7%)	584 (78.5%)
	Black	31 (17.8%)	120 (16.1%)
	Chicano	10 (5.7%)	29 (3.9%)
	Asian/American	3 (1.7%)	11 (1.5%)
	Indian/ Other		
<u>Age</u> ***	11	14 (8.1%)	113 (15.2%)
	12	23 (13.2%)	105 (14.1%)
	13	20 (11.5%)	115 (15.5%)
	14	32 (18.4%)	116 (15.6%)
	15	33 (19.0%)	105 (14.1%)
	16	25 (14.4%)	106 (14.2%)
	17	27 (15.5%)	84 (11.3%)
<u>Place of residence</u>	Urban	42 (24.1%)	192 (25.8%)
	Suburban	86 (49.4%)	324 (43.6%)
	Rural	46 (26.4%)	227 (30.6%)
	Missing	--	1
<u>Parent marital status</u> *	Married	129 (77.2%)	609 (82.9%)
	Divorced	20 (12.0%)	52 (7.2%)
	Separated	6 (3.6%)	30 (4.1%)
	Single	1 (0.6%)	5 (0.7%)
	Other	11 (6.6%)	39 (5.3%)
	Missing	7	9
<u>Family income</u> ** (adjusted for inflation)	\$38,000 or less	61 (37.9%)	185 (26.2%)
	\$38,000 - \$53,000	20 (12.4%)	124 (17.5%)
	\$53,000 - \$68,100	28 (17.4%)	111 (15.7%)
	\$68,100 - \$83,300	20 (12.4%)	102 (14.4%)
	\$83,300 - \$98,500	21 (13.0%)	72 (10.2%)
	\$98,500 - \$144,000	8 (5.0%)	89 (12.6%)
	Over \$144,000	3 (1.9%)	24 (3.4%)
Missing		13	37

\* - p < .05; \*\* - p < .01; \*\*\* - p < .005

**Graph 1. Frequency distribution of completed/attempted rape**



**Table 3. Frequency distribution of completed/attempted rape**

<b>Value of Dependent Variable</b>	<b>Frequency</b>
0	692
1	21
2	14
3	5
4	8
6	2
10	1
20	1

**Table 4. Distribution of completed/attempted rape (cumulative dependent variable = 1) by survey wave**

<b>Wave</b>	<b>Frequency</b>	<b>Percentage</b>
Wave 1	22	31.4%
Wave 2	15	21.4%
Wave 3	11	15.7%
Wave 4	9	12.9%
Wave 5	13	18.6%

**Table 5. Distribution of completed/attempted rape (cumulative dependent variable = 1) by age**

<b>Age</b>	<b>Frequency</b>	<b>Percentage</b>
11	5	7.1%
12	4	5.7%
13	4	5.7%
14	8	11.4%
15	8	11.4%
16	10	14.3%
17	18	25.7%
18	5	7.1%
19	6	8.6%
20	1	1.4%
21	1	1.4%

**Table 6a. Independent variable components for factor analysis – behavioral engagement**

Variable	Measurement
	1 – Mostly Fs 2 – Mostly Ds 3 – Mostly Cs 4 – Mostly Bs 5 – Mostly As
What is your grade point average?	
On the average, how many afternoons during the school week, from the end of school to dinner, have you spent studying?	0 – less than once a week 1 2 3 4 5
On the average, how many evenings during the school week, from dinnertime to bedtime, have you spent studying?	0 – less than once a week 1 2 3 4 5
On the weekends, how much time have you generally spent studying?	1 – Very little 2 – Not too much 3 – Some 4 – Quite a bit 5 – A great deal
Have you been a member of any athletic teams at school?	Yes / No
On the average, how many afternoons during the school week, from the end of school to dinner, have you spent on team activities?	0 – less than once a week 1 2 3 4 5
On the average, how many evenings during the school week, from dinnertime to bedtime, have you spent on team activities?	0 – less than once a week 1 2 3 4 5
On the weekends, how much time have you generally spent on team activities?	1 – Very little 2 – Not too much 3 – Some 4 – Quite a bit 5 – A great deal
Have you taken part in any activities at school, for example, service clubs, recreational or hobby clubs, student government, newspaper and/or yearbook (not counting athletic teams and honor societies)?	Yes / No
On the average, how many afternoons during the school week, from the end of school to dinner, have you spent on these activities?	0 – less than once a week 1 2 3 4 5
On the average, how many evenings during the school week, from dinnertime to bedtime, have you spent on these school activities?	0 – less than once a week 1 2 3 4 5
On the weekends, how much time have you generally spent on these school activities?	1 – Very little 2 – Not too much 3 – Some 4 – Quite a bit 5 – A great deal



**Table 6b. Independent variable components for factor analysis – emotional engagement**

Variable	Measurement
How important has your school work been to you?	1 – Not important 2 – Not too important 3 – Somewhat important 4 – Pretty important 5 – Very important
How important have school athletics been to you?	1 – Not important 2 – Not too important 3 – Somewhat important 4 – Pretty important 5 – Very important
How important is it for you to be involved in school activities?	1 – Not important 2 – Not too important 3 – Somewhat important 4 – Pretty important 5 – Very important
I'm not asked to take part in school activities as often as I'd like to be.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
I often feel like nobody at school cares about me.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
I don't feel as if I really belong at school.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
Even though there are lots of kids around, I often feel lonely at school.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
How important is it to you to have teachers think of you as a good student?	1 – Not important 3 – Somewhat important 5 – Very important
How important is it to you to have a high grade point average?	1 – Not important 3 – Somewhat important 5 – Very important

**Table 7. Factor analysis results (principal factor analysis) (n = 730)**

Variable	Variable Description	Factor Loadings		Rotated Factor Loadings	
		Factor 1 Eigenvalue:	Factor 2 Eigenvalue:	Factor 1	Factor 2
GPA	What is your grade point average?	1.94 0.31	1.40 0.23	0.08	0.38
STUDY_ TIME2 *	Composite time spent studying	0.36	0.24	0.10	0.42
ATHL_ TIME2 *	Composite time spent on athletic activities	0.67	-0.60	0.90	0.002
SCHL_ TIME2	Composite time spent on school activities	0.21	0.24	-0.002	0.32
STUDY_ IMP *	How important has your schoolwork been to you?	0.43	0.39	0.06	0.58
ATHL_ IMP *	How important have school athletics been to you?	0.70	-0.56	0.90	0.05
SCHL_ IMP	How important is it for you to be involved in school activities?	0.31	0.31	0.02	0.44
isol1	I'm not asked to take part in school activities as often as I'd like to be.	0.10	0.03	0.09	0.05
isol2	I often feel like nobody at school cares about me.	0.17	-0.01	0.13	0.11
isol3	I don't feel as if I really belong at school.	0.32	0.12	0.15	0.31
isol4	Even though there are lots of kids around, I often feel lonely at school.	0.10	-0.03	0.09	0.05
TEACH *	How important is it to you to have teachers think of you as a good student?	0.39	0.35	0.05	0.52
GPA_ IMP *	How important is it to you to have a high grade point average?	0.39	0.41	0.02	0.56

NOTES: \* - Variables to be retained.

**Table 8. Final list of independent variable scales and their components**

Scale	Description	Range of Response Values	Components of Scale	Description	Measurement	
ATHLETICS	Commitment and attachment to school athletic teams	0 - 10	ATHL_TIME2	Composite measure of time spent on athletics (Weekday afternoons spent; Weekday evenings spent; Time on weekends spent)	Range of 1 - 5	
			ATHL_IMP	How important have school athletics been to you?		1 – Not important 2 – Not too important 3 – Somewhat important 4 – Pretty important 5 – Very important
ACADEMICS	Commitment to academics and attachment to schoolwork and teachers	4 - 20	STUDY_TIME2	Composite measure of time spent studying (Weekday afternoons spent; Weekday evenings spent; Time on weekends spent)	Range of 1 - 5	
			STUDY_IMP	How important has your school work been to you?		1 – Not important 2 – Not too important 3 – Somewhat important 4 – Pretty important 5 – Very important
			TEACH	How important is it to you to have teachers think of you as a good student?		1 – Not important 3 – Somewhat important 5 – Very important
			GPA_IMP	How important is it to you to have a high grade point average?		1 – Not important 3 – Somewhat important 5 – Very important

**Table 9. Control variables and their measurements**

<b>Variable Category</b>	<b>Variable</b>	<b>Measurement</b>
<u>Peer Isolation</u>	I don't feel that I fit in very well with my friends.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
	My friends don't take much interest in my problems.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
<u>Association with Delinquent Peers</u> (composite measure; all of the listed summed)	During the last year, how many of your close friends have...	Each individual variable: 1 – None of them 2 – Very few of them 3 – Some of them 4 – Most of them 5 – All of them  Altogether: Recorded from 1 to 5
	...cheated on school tests?	
	...purposely damaged or destroyed property that did not belong to them?	
	...used marijuana or hashish?	
	...stolen something worth less than \$5?	
	...hit or threatened to hit someone without any reason?	
	...used alcohol?	
	...broken into a vehicle or building to steal something?	
	...sold hard drugs such as heroin, cocaine, or LSD?	
	...stolen something worth more than \$50?	
<u>Commitment to Delinquent Peers</u>	If you found that your group of friends was leading you into trouble, would you still run around with them?	No / Don't Know / Yes
	<u>Peer Normlessness</u>	
	In order to gain the respect of your friends, it is sometimes necessary to beat up on other kids.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
<u>School Normlessness</u>	To stay out of trouble, it is sometimes necessary to lie to teachers.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
	At school it is sometimes necessary to play dirty in order to win.	1 – Strongly disagree 2 – Disagree 3 – Neither 4 – Agree 5 – Strongly agree
<u>Parental Approval</u>	How would your parents react if you cheated on school tests?	1 – Strongly approve 2 – Approve 3 – Neither 4 – Disapprove 5 – Strongly disapprove

**Table 10. Descriptive statistics of all variables in regression equation**

<b>Variable</b>	<b>Variable Description</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
ACADEMICS	Commitment and attachment to schoolwork and teachers	734	14.88	2.99	4	20
ATHLETICS	Commitment and attachment to school athletic teams	744	3.84	2.60	0	10
AGE	Age, 11-17	744	13.87	1.95	11	17
RACE	Race of respondent	744	Anglo: 78.5% Black: 16.1% Asian/American Indian/Other: 1.5%	Chicano: 3.9%	Mode: Anglo	
PLACE	Dwelling area of respondent	744	Urban: 25.8% Suburban: 43.6%	Mode: Suburban	Rural: 30.6%	
INCOME	Income in dollars (1976)	744	8.90	20.75	1 (\$6,000 or less)	10 (\$38,000 or more)
PEERISOL1	I don't feel that I fit in very well with my friends.	744	2.14	0.98	1	5
PEERISOL2	My friends don't take much interest in my problems.	744	2.29	0.95	1	5
DELPEER	Summed total of ten delinquent peer measures	744	2.32	1.24	0	5
DELPEER_COMMIT	If you found that your group of friends was leading you into trouble, would you still run around with them?	744	1.50	0.63	1	3
DELPEER_NORMLESS	In order to gain the respect of your friends, it is sometimes necessary to beat up on other kids.	744	1.99	0.85	1	5
SCHOOLNORM1	To stay out of trouble, it is sometimes necessary to lie to teachers.	744	2.78	1.25	1	5
SCHOOLNORM2	At school it is sometimes necessary to play dirty in order to	744	2.39	1.19	1	5

PARENTAPP	win. How would your parents react if you cheated on school tests?	744	4.35	0.66	1	5
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**Table 11. Odds ratios of attempted/completed rape regressed on ACADEMICS and ATHLETICS; logistic regression (n = 744)**

<b>Variable</b>	<b>Variable Description</b>	<b>Odds Ratio</b>	<b>Standard Error</b>
ACADEMICS	Commitment and attachment to school athletic teams	0.97	0.04
ATHLETICS	Commitment to academics and attachment to schoolwork and teachers	0.96	0.05

**Table 12. Logistic regression of attempted/completed rape on ACADEMICS (n = 731)**

<b>Variable Name</b>	<b>Variable Description</b>	<b>Odds Ratio</b>	<b>Coefficient</b>	<b>Standard Error</b>
ACADEMICS	Commitment and attachment to schoolwork and teachers	0.97	-0.03	0.06
AGE	Age, 11-17	0.98	-0.03	0.09
RACE	Anglo	1.29	0.26	0.18
	Black	1.32	0.27	0.44
	Chicano	1.12	0.11	0.79
	American Indian		Omitted	
	Asian	2.93	1.07	1.15
	Other	8.94	2.19	1.56
INCOME **	Income in dollars (1976), measured from \$6,000 to \$38,000 in \$4,000 increments	1.01	0.01	0.005
PLACE	Urban	1.13	0.13	0.40
	Suburban	0.79	-0.23	0.46
	Rural		Omitted	
PEERISOL1	I don't feel that I fit in very well with my friends.	1.07	0.07	0.16
PEERISOL2	My friends don't take much interest in my problems.	1.22	0.20	0.16
DELPEER	Summed total of ten delinquent peer measures, recoded on a 5-item scale	1.02	0.21	0.13
DELPEER_COMMIT	If you found that your group of friends was leading you into trouble, would you still run around with them?	1.21	0.19	0.25
DELPEER_NORMLESS	In order to gain the respect of your friends, it is sometimes necessary to beat up on other kids.	0.75	-0.291	0.21
SCHOOLNORM1 *	To stay out of trouble, it is sometimes necessary to lie to teachers.	1.33	0.29	0.15
SCHOOLNORM2	At school it is sometimes necessary to play dirty in order to win.	1.29	0.26	0.15
PARENTAPP	How would your parents react if you cheated on school tests?	1.09	0.09	0.26
Constant *		0.01	-4.27	2.22

NOTES: Pseudo-R-squared = .0670

\* - significant at  $p < .1$ ; \*\* - significant at  $p < .05$ ; \*\*\* - significant at  $p < .01$



**Table 13. Logistic regression of attempted/completed rape on ATHLETICS (n = 740)**

<b>Variable Name</b>	<b>Variable Description</b>	<b>Odds Ratio</b>	<b>Coefficient</b>	<b>Standard Error</b>
ATHLETICS	Commitment and attachment to school athletic teams	0.97	-0.03	0.44
AGE	Age, 11-17	0.98	-0.02	0.08
RACE	Anglo	1.28	0.25	0.17
	Black	1.34	0.29	0.42
	Chicano	1.16	0.15	0.78
	American Indian		Omitted	
	Asian	2.25	0.81	1.15
	Other	10.97	2.40	1.51
INCOME **	Income in dollars (1976), measured from \$6,000 to \$38,000 in \$4,000 increments	1.10	0.01	0.005
PLACE	Urban	1.18	0.17	0.40
	Suburban	0.83	-0.19	0.46
	Rural		Omitted	
PEERISOL1	I don't feel that I fit in very well with my friends.	1.03	0.03	0.15
PEERISOL2	My friends don't take much interest in my problems.	1.25	0.23	0.15
DELPEER	Summed total of ten delinquent peer measures, recoded on a 5-item scale	1.07	0.06	0.13
DELPEER_COMMIT	If you found that your group of friends was leading you into trouble, would you still run around with them?	1.23	0.21	0.24
DELPEER_NORMLESS	In order to gain the respect of your friends, it is sometimes necessary to beat up on other kids.	0.76	-0.29	0.21
SCHOOLNORM1	To stay out of trouble, it is sometimes necessary to lie to teachers.	1.22	0.20	0.14
SCHOOLNORM2	At school it is sometimes necessary to play dirty in order to win.	1.17	0.15	0.14
PARENTAPP	How would your parents react if you cheated on school tests?	0.88	-0.13	0.20
Constant **		0.03	-3.40	1.61

NOTES: Pseudo-R-squared = .0746

- - significant at  $p < .1$ ; \*\* - significant at  $p < .05$ ; \*\*\* - significant at  $p < .01$

**Table 14. Model 3 □ final logistic regression of attempted/completed rape on ACADEMICS and ATHLETICS (n = 731)**

<b>Variable Name</b>	<b>Variable Description</b>	<b>Odds Ratio</b>	<b>Coefficient</b>	<b>Standard Error</b>
ACADEMICS	Commitment and attachment to schoolwork and teachers	0.98	-0.02	0.06
ATHLETICS	Commitment and attachment to school athletic teams	0.97	-0.03	0.04
AGE	Age, 11-17	0.98	-0.02	0.09
RACE	Anglo	1.29	0.25	0.18
	Black	1.34	.29	0.44
	Chicano	1.11	0.11	0.79
	American Indian		Omitted	
	Asian	2.6	0.95	1.17
	Other	9.39	2.24	1.56
INCOME **	Income in dollars (1976), measured from \$6,000 to \$38,000 in \$4,000 increments	1.01	0.01	0.005
PLACE	Urban	1.16	0.15	0.40
	Suburban	0.82	-0.20	0.46
	Rural		Omitted	
PEERISOL1	I don't feel that I fit in very well with my friends.	1.06	0.05	0.16
PEERISOL2	My friends don't take much interest in my problems.	1.23	0.20	0.16
DELPEER	Summed total of ten delinquent peer measures, recoded on a 5-item scale	1.03	0.03	0.13
DELPEER_COMMIT	If you found that your group of friends was leading you into trouble, would you still run around with them?	1.22	0.20	0.25
DELPEER_NORMLESS	In order to gain the respect of your friends, it is sometimes necessary to beat up on other kids.	0.75	-0.29	0.21
SCHOOLNORM1 *	To stay out of trouble, it is sometimes necessary to lie to teachers.	1.33	0.29	0.15
SCHOOLNORM2 *	At school it is sometimes necessary to play dirty in order to win.	1.29	0.26	0.15
PARENTAPP	How would your parents react if you cheated on school tests?	1.11	0.10	0.26
Constant **		0.01	-4.45	2.25

NOTES: Pseudo-R-squared = .0687

\* - significant at  $p < .1$ ; \*\* - significant at  $p < .05$ ; \*\*\* - significant at  $p < .01$

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