

The Pennsylvania State University

The Graduate School

Department of Sociology

RELIGIOUS CONTEXTS AND ADOLESCENTS' RISKY BEHAVIORS

A Thesis in Sociology

by

Amy Adamczyk

©2005 Amy Adamczyk

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2005

The thesis of Amy Adamczyk was reviewed and approved* by the following:

Roger Finke
Professor of Sociology and Religious History
Thesis Advisor
Chair of Committee

Richard Felson
Professor of Sociology and Crime, Law and Justice

Eric Silver
Associate Professor of Sociology and Crime, Law and Justice

Eva Lefkowitz
Associate Professor of Health and Human Development

Paul Amato
Professor of Sociology and Demography
Head of the Department of Sociology

*Signatures are on file in the Graduate School

Abstract

Sociologists have long been interested in how individuals are affected by the people with whom they interact and the environments where they live. Despite a plethora of research on contextual influences, little research has been conducted on religious contexts. Examining the association between teens' risky behaviors and three religious contexts, this project addresses this omission in past research.

To begin I assess the extent to which friends' religiosity, religious schools and living in the Bible Belt are independently associated with first sex and delinquency. Because so few sociologists have examined multiple or overlapping religious contexts, we do not know which behavior is associated with which context. Additionally, we know little about the extent to which more inclusive contexts, such as the Bible Belt are mediated by more immediate ones like friendship groups. I find that the more immediate and intimate contexts mediate Bible Belt influences: schoolmates religiosity is associated with first sex and friends' religiosity is related to delinquency and first sex.

This project also examines the extent to which religious contexts are associated with attitude-behavior consistency. Specifically, in which contexts are teenagers' own religious attitudes most likely associated with delinquency and first sex? I address this issue by examining whether friends, school, or regional religiosity moderates the relation between individual religiosity and risky behaviors. I find that friends' religiosity moderates the link between individual religiosity and delinquency, but not first sex.

Additionally, I look at the separate influence of romantic partner and friends' religiosity. After establishing a direct relation between sex and friends' religiosity, I examine whether sex attitudes explain the association and find that guilt about sex, in part, mediates it.

Finally, I use longitudinal data to boost confidence about the causal direction by estimating the effect of friends' religiosity on sex. I also show that first sex is associated with subsequent friendship choices.

My analysis relies on two waves of the National Longitudinal Study of Adolescent Health. Unlike previous studies, which use respondents' perceptions of their friends' behaviors, the data on friends and romantic partners for this study are taken directly from their reports. Likewise, my analysis improves on previous studies by using longitudinal data to establish causal ordering for friend influences, and multilevel models to correctly estimate associations between teens' risky behaviors and friends, school, and regional religiosity.

TABLE OF CONTENTS

List of Tables.....	vii
List of Figures.....	viii
Acknowledgements.....	ix
Chapter 1- Introduction.....	1
Which Religious Contexts?.....	1
Religious Contexts and Attitude-Behavior Consistency.....	4
Process of Influence.....	5
Religion and Different Types of Behavior	6
Selection or Socialization.....	7
Improved Data and Methods.....	8
Religious Contexts and Adolescents' Risky Behaviors.....	9
Layout of Chapters.....	11
Chapter 2- Multiple Religious Contexts.....	13
Religion and Risky Behaviors.....	15
Context Selection.....	16
Micro-Level Influences (Friendship Groups)	17
Meso-Level Influences (Schools)	19
Macro-Level Influences (States)	21
Religious Contextual Influences.....	22
Data and Measurement.....	24
Dependent Measure.....	26
Key Independent Variables.....	26
Individual Religiosity:	26
Friends' Religiosity.....	26
School Religiosity.....	28
Regional Religiosity.....	28
Control Variables.....	29
Methods.....	30
Results.....	31
Estimating First Sex.....	31
Estimating Delinquency.....	32
Religious Contexts and First Sex.....	33
Religious Contexts and Delinquency.....	38
Discussion and Conclusion.....	42
Friends' Religiosity and Delinquency.....	44
Friends' Religiosity and First Sex.....	45
School Religiosity	47
State Religiosity.....	49

Macro, Meso, and Micro.....	50
Figure, Tables and Graph.....	52

Chapter 3- Unraveling Religious Peer Associations.....	70
Religion and Sexual Behaviors.....	72
Process of Friends' Religiosity.....	74
Religion and Attitudes about Sex.....	76
Attitude-Behavior Consistency.....	77
Romantic Partners Verses Friends.....	78
Additional Influences.....	80
Data and Measurement.....	81
Dependent Measure.....	83
Key Independent Variables.....	83
Individual Private and Public Religiosity.....	83
Friends' Private and Public Religiosity.....	83
Romantic Partners' Private and Public Religiosity.....	84
Mediators and Moderators.....	85
Control Variables.....	86
Methods and Plan of Analysis.....	87
Friends' Religiosity and Mediating Factors.....	88
Moderators.....	92
Romantic Partner.....	93
Conclusion.....	93
Figure, Tables, and Chart.....	99

Chapter 4- Socialization versus Selection	108
Influence or Socialization.....	110
Acquisition, Deselection, and Peer Rejection.....	114
Data and Measurement.....	118
Dependent Variables.....	120
Key Independent Variables.....	122
Control Variables.....	122
Methods.....	125
Socialization.....	126
Selection.....	129
Discussion and Conclusion.....	130
Tables and Figure.....	135

Chapter 5- Conclusion.....	140
Rigorously Theorizing and Examining Multiple Contexts.....	140
Religious Contextual Effects for First Sex versus Delinquency.....	141
Attitude-Behavior Consistency.....	142
<i>How</i> Friends' Religiosity Relates to First Sex.....	142
Religious Friends versus Romantic Partner Influences.....	144
Selection versus Socialization Influences.....	144
Limitations and Future Research.....	145
Data Problems with Macro Contexts.....	145
<i>How</i> Schoolmates' Religiosity Influence First Sex.....	147
Selection and Socialization by Schoolmates.....	147
Measuring Sex Opportunity.....	148
Friends' Sexual Behaviors.....	149
Parents' Religiosity.....	149
Adolescents versus Adults.....	150
References.....	152

LIST OF TABLES

2.1 Description of Variables Included in the Analysis.....	53
2.2 Descriptive Statistics for Variables Included in the Analysis.....	56
2.3 Variance Components for School and State influences on First Sex	58
2.4 Variance Components for School and State influences on Delinquency.....	59
2.5 Hierarchical Linear Models of Religion on Virginity Loss Using the Saturated Sample.....	60
2.6 Individual and Friends' Religiosity for First Sex by Gender Using the Saturated Sample.....	62
2.7 Hierarchical Linear Models of Religion on Virginity Loss Using the In-home Sample.....	63
2.8 Hierarchical Linear Models of Religion on Delinquency Using the Saturated Sample.....	65
2.9 Hierarchical Linear Models of Religion on Delinquency Using the In-Home Sample.....	68
3.1 Description of Variables Included in the Analysis.....	100
3.2 Descriptive Statistics.....	102
3.3 Mediating Influences of Attitudes on the Link between Religious Friends and First Sex...	103
3.4 Moderating Influences of Attitudes on the Link between Religious Friends and First Sex.....	105
3.5 Romantic Partners and Friends' Religiosity for First Sex.....	107
4.1 Description of Variables Included in the Analysis.....	135
4.2 Descriptive Statistics for Variables Included in the Analysis.....	136
4.3 Longitudinal Analysis of Friends' Religiosity on the Probability of Experiencing First Sex between 1995 and 1996.....	137
4.4 Effects of First Sex on Subsequent Friends' Religiosity Using Change Scores.....	138

LIST OF FIGURES

2.1 Processes through which Religious Contexts May Have an Influence.....	52
2.2 Interaction between Individual and Friends' Religiosity.....	67
3.1 Three Paths of Religious Friends' Influence.....	99
3.2 Interaction between Guilt and Friends' Religiosity for First Sex.....	106
4.1 Predicted Change in Friends' Religiosity by Virginity Status at W1.....	139

ACKNOWLEDGEMENTS

For the time they spent reading and advising me on the dissertation, I would like to thank my committee members, Roger Finke, Richard Felson, Eric Silver, and Eva Lefkowitz. Special thanks are given to Roger Finke, the chair of my committee and the person who encouraged me to pursue this project. His guidance and support helped me develop the idea and carry it to its finish in a timely manner. Additionally, Richard Felson devoted considerable energy to reading and offering comments on early drafts. His suggestions helped me focus the dissertation and will guide future publications of the chapters.

There are many others who should also be thanked. With his Crawford Fellowship in Ethical Inquiry, Mr. Crawford made it possible for me to devote all of my energy during the last year of my doctoral program to the dissertation. New York City and all its libraries provided the excitement and energy needed to complete this project. Along with the Webster girls, Ingrid Skadsberg, Ellie Buteau, and Barbara Guess gave me the emotional support and mental stimulation needed to earn a Ph.D. Jacob Felson read, edited, and commented on every chapter in the dissertation. His emotional and intellectual support was invaluable.

Finally, the Carolina Population Center provided the major data used in this project. Add Health data is a program designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris and funded by a grant P01-HD21921 from the National Institute of Child Health and Human Development with cooperative funding from 17 other agencies. Persons interested in obtaining data files from Add Health should contact Add Health, Carolina Population Center, 123 W. Franklin Street, Chapel Hill, NC 27516-2524 (www.cpc.unc.edu/addhealth/contract.html).

This dissertation is dedicated to my grandmothers, Dolores Katherine Knize Wagnarus and Helen D. Mangle Adamczyk, both of whom knew of my graduate pursuits, but weren't able to see me finish.

CHAPTER 1- INTRODUCTION

Because the work of Durkheim and Weber, sociologists have been interested in the relation between individual actions and collective characteristics, which is referred to as contextual influences or the macro-micro link. Parsons believed that sociology's distinctive concern was analyzing the effects of group-level or "emergent" properties on the action of individuals.

Coleman also thought that the central theoretical problem in sociology was the examination of how individuals' actions combined to produce system-level behavior, and how system-level behavior in turn constrained individual actions (1986, 1312). Despite much research attention on the subject, Coleman has argued that theories addressing the micro-to-macro link are the most poorly developed part of sociological theory. In his review of the field Collins(1986) agreed, arguing that substantial theoretical gains could be made through further examination of the micro-macro relation.

The work presented in this dissertation addresses a number of issues with how we currently understand contextual effects. Specifically, I examine how religious contexts are associated with adolescents' delinquent and sexual behaviors. In the process, I address a number of theoretical and methodological problems associated with the macro-micro link. Three levels of religious context are examined: friends' religiosity at the micro level, schools at the meso-level; and region at the macro-level. Below I identify my five main research objectives and explain how my work contributes to our current understanding of religious contextual influences.

Which Religious Contexts?

The first objective of my research is to determine which religious contextual level shapes adolescents' risky behaviors. To address this issue I examine three religious contexts simultaneously --religious friends, religious schools, and living in the Bible Belt -- on

adolescents' risky behaviors. Despite a large body of literature on contextual influences (Sampson, 1988; 1991; Welch, Tittle, and Petee, 1991; Felson, et al., 1994; Small and Luster, 1994; Upchurch et al., 1999; Haynie, 2001; 2002; Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Moore and Vanneman, 2003; Browning and Olinger-Wilbon, 2003; Regnerus, 2004; Finke and Adamczyk, 2005; Adamczyk and Felson, 2005), almost every study to date incorporates only one level of context (for one of the few exceptions see Teitler and Weiss, 2000). Because so little research has examined multiple contextual influences simultaneously, we do not know whether more macro level (e.g. states) effects result from macro-level or micro level (e.g. friendship groups) processes. Likewise, researchers of religious context have misused macro-level measures to assess micro-level processes. Mismatch between theory and measurement impedes a better understanding of religious contexts.

A key question is whether contextual effects reflect aggregate forces or whether they are produced by micro-level influences. If macro effects emerge from micro-level influences, then once we account for the latter, macro variables will cease to be significant. Some theorists, such as Randall Collins (1981, 1988), believe that most important social forces operate through micro-level processes of individuals interacting with each other (see also Knorr-Cetina and Cicourel, 1981). For example, the context of the Bible Belt could influence behavior simply because there is a greater likelihood for people in this area of the country to have religious friends. Conversely, if contextual influences exist *sui generis*, which characterizes Durkheim's work (1951), we need to have an understanding of how each significant contextual level of influence (e.g. schools, states, regions, countries, etc.) links to individuals' behaviors. By examining the influence of multiple religious contexts on teens' risky behavior simultaneously, my research assesses the extent to which different religious contexts are independent of each other.

In addition to these issues, my research addresses a discrepancy between theory and measurement in the literature on religious contextual influences. Researchers theorize contextual influences at one level of analysis (e.g. friendship groups), but measure them at another level (e.g. schools). An example of this can be found in the work of Rodney Stark, who was one of the early proponents for religion's contextual influence. Stark hypothesized that, "when the majority of a teenager's friends are religious, religion enters freely into everyday interactions and becomes a valid part of the normative system," strengthening the relation between personal religiosity and behavior (Stark, 1996, 164). Although Stark posits that religious contextual effects occur at the level of friends, he never tests this idea with data from friends. Rather, Stark measures the religious context of schools (Stark, Kent, and Doyle, 1982), metropolitan areas (Stark, Doyle, and Kent, 1980), and regions (Stark, 1996) to develop a theory on the power of religious contexts.

Mismatch between theory and measurement is a significant issue, because there may be independent contextual influences at the macro- and micro-levels affecting attitudes and behavior. For example, individuals are likely influenced by the national culture as expressed in media and legal codes, over and above the influence of friends and colleagues. Alternatively, aggregate-level findings may simply emerge from micro-level associations. If we do not account for more proximate contexts, we cannot accurately estimate which contextual level is most important for the association.

The research presented in this dissertation improves on previous contextual studies by measuring and theorizing about influences at the same level, and testing for macro effects, while accounting for micro-level processes. I elaborate on why, for example, living in the Bible Belt should influence adolescents' delinquent behaviors, and then examine its association with

delinquency, while controlling for individual religiosity, friends' religiosity, and schoolmates' religiosity. This sort of analysis will be one of the most rigorous tests to date of whether macro-level contexts like regional religiosity are associated with teens' risky behaviors.

Religious Contexts and Attitude-Behavior Consistency

The second objective of my research is to understand the extent to which religious contexts influence attitude-behavior consistency. Specifically, in which contexts are teenagers' own attitudes about religion and premarital sex most likely associated with behaviors? I address this question by examining how three religious contexts – religious friends, schools, and states -- moderate the relation between individual religiosity and adolescents' risky behaviors. I establish that friendship group religiosity moderates the association between personal religiosity and delinquency. I then look at whether religious friends' support increases consistency between premarital sex attitudes and first sex.

Much research has examined whether religious contexts boost the power of individual religious attitudes on behavior. In the *Elementary Forms of Religious Life*, Durkheim (1951) posited that religion integrates and unites people into a moral community, which enforces their moral beliefs and group obligations. On the basis of this thesis, researchers (Stark, Doyle, and Kent, 1980; Stark, Kent, and Doyle, 1982; Stark, 1996) have developed the “moral communities” argument, which proposes that in religious contexts individual religiosity is enhanced and has an even stronger association with behaviors, like premarital sex and delinquency, than it would in more secular settings.

The moral communities hypothesis has received a moderate amount of empirical support (Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Regnerus, 2004; Finke and Adamczyk, 2005). However, when researchers test for the influence of religious social support, they rarely

examine multiple contexts. Thus, we do not know at which contextual level (e.g. friends, schools, or states) religious social support is most likely to strengthen religious attitude-behavior consistency. Likewise, few researchers have examined whether religious contexts strengthen consistency between sexual attitudes and behaviors. My research improves on past studies by examining whether multiple religious contexts moderate the association between religion, premarital sex and delinquency, and by examining whether friends' religiosity strengthens the association between sexual attitudes and sexual behavior.

Process of Influence

The third objective of this project is to examine the processes through which religious contexts are related to delinquency and sexual behavior. Specifically, are religious contexts directly associated with behaviors, or are they related to them only indirectly through personal religiosity? If religious contexts have a direct association, what are the specific mechanisms producing the association? To address these questions, I examine whether personal religiosity mediates the relation between religious context and behaviors. After establishing that religious contexts are minimally mediated by individual religiosity, I test other explanations for how friends' religiosity is associated with first sex. Through an analysis of mediating variables, I examine whether adolescents with more religious friends delay first sex through socialization or through social control processes.

Several studies (Welch, Tittle, and Petee, 1991; Moore and Vanneman, 2003; Adamczyk and Felson, 2005) have found that religious contexts measured at the level of friendship groups, regions, and parishes influence people, regardless of personal religiosity. Yet, no research has specifically examined how religious contexts are associated with individual behavior. By looking at the process through which religious contexts relate to behavior, we can better

understand whether religious *ideas* in and of themselves have power over groups, or whether the processes of influence are more indirect. My study is one of the first to develop hypotheses about, and test the mechanisms by which religious contexts are associated with behaviors.

Religion and Different Types of Behavior

The fourth objective is to compare the relative association between religious contexts and different kinds of behavior. To address this issue I compare the relation between religious contexts, first sex and illegal behaviors for adolescents in the United States. A number of social scientists (Burkett & White 1974; Tittle & Welch 1983; Hadaway, Elifson, & Petersen 1984; Finke & Adamczyk 2003) have suggested that the magnitude of religion's contextual effect may be stronger for legal than illegal behaviors. The idea is that religion may have a greater influence on legal behavior because religion provides clearer behavioral guidelines than other institutions. Religion should, for example, have less influence on stealing because this behavior has legal sanctions attached to it. By contrast, religious contexts may have more influence on premarital sex between consenting adults because this behavior is unregulated by law and other non-religious institutions.

Several studies have examined this idea with regard to individual religiosity, but little research has looked at the idea with respect to contextual religiosity. (see Finke and Adamczyk, 2005 for an exception). Likewise, because few social scientists have examined multiple or overlapping religious contexts, we do not know which behavior is likely associated with which context (e.g. religious friends versus religious schools). Systematic testing of the association between multiple religious contextual and different behaviors would clarify our current understanding of how religion influences are associated with different behaviors.

Selection versus Socialization

Religious contextual research often assumes that context shapes individual behavior, and that people do not choose their contexts on the basis of factors related to their behavior (Pescosolido, 1990; Stark, 1996; Kelley and De Graaf, 1997; Moore and Vanneman, 2003; Regnerus, 2004; Finke and Adamczyk, 2005; Adamczyk and Felson, 2005). For more macro contexts, such as regions, states or nations, this assumption is warranted because people may have little choice in selecting these contexts. For example, adolescents have limited choice about the schools they attend and the regions in which they live. However, for more proximate contexts, people have considerably more choice, and reverse causality is possible. For example, adolescents have considerable choice over friends within their school.

Because teens choose their friends, selection bias is possible for the religious friends-risky behavior association, particularly when cross-sectional data are used. With longitudinal data, I am able to boost confidence about causal direction in estimating the effect of friends' religiosity on sexual behavior. Additionally, I assess the extent to which the relation between friends' religiosity and sexual behavior is bidirectional. That is, I also examine the effect of virginity loss on subsequent friendship choice. When, for example, adolescents lose their virginity, do they become estranged from their more religious friends and befriend more secular adolescents?

I address questions of socialization and selection in the following way. Limiting the sample to virgins, I examine the effect of friends' religiosity on first sex during the following year. Within that same sample of virgins over the same time period, I also compare changes in friends' religiosity for teens who have first sex, with changes in friends' religiosity for adolescents who stay virgins.

Improved Data and Methods

To quantitatively address these five objectives, I need longitudinal data that allows for the construction of religion measures for friends, schools and regions. Add Health includes relevant contextual measures of religiosity, and offers substantially improved measures of friends' characteristics. Unlike most previous datasets, Add Health allows for the measurement of friends' religiosity as reported directly from the friends themselves. Direct measurement of friends' characteristics is a dramatic improvement over indirect measurement because people tend to overestimate behavior similarity between themselves and their friends. Indeed, in their examination of influence and similarity Jussim and Osgood (1989) found little evidence of interpersonal influence from friends primarily because respondents did not accurately perceive their friends' attitudes.

Another improvement of this study over past research on religious contexts is the use of hierarchical generalized linear modeling (HGLM). HGLM is advantageous for contextual analyses because it allows the partition of variation within units (micro-level effects) from between units (macro-level influences). Previous analyses of religious contextual influences have generally used more traditional regression techniques that cannot account for multiple levels of explained variance. Another advantage of the HGLM technique is that it provides significance testing that is appropriate for the school-based sampling design of Add Health. Standard regression is not suitable for use with school-based samples, because the observations in these samples violate the standard regression assumption that observations are identically and independently distributed. HLM provides modified standard errors and attendant significance tests that account for the dependence of observations collected within schools.

Finally, my research improves on past studies by specifically examining selection and socialization using longitudinal data. Causal inference with cross-sectional data is the norm in past research on the relation between friends and adolescents' attitudes and behavior (Treboux and Busch-Rossnagel, 1990; DiBlasio and Benda, 1990; Benda and DiBlasio, 1993, Thornberry et al., 1994; DiBlasio and Benda, 1994). Researchers have often inferred that individuals are socialized by their friends on the basis of cross-sectional correlations. Yet researchers could also explain cross-sectional correlations with reference to selection processes. In this case, data at two time points are needed to examine whether the existence of religious friends delays the loss of virginity, or whether the loss of virginity leads adolescents to choose less religious friends. Most likely both processes are occurring, in which case previous cross-sectional estimates of friends' influence on individual behavior are biased upward.

Religious Contexts and Adolescents' Risky Behaviors

One reason why I focus on first sex and delinquency is to assess whether religious contexts have a greater influence on legal behaviors. Additionally, studying first sex and delinquency will add to research in a number of sociology specialties, including health, family, religion, and criminology. As I explain below, there are some important reasons why religious contexts should influence adolescents' risky behaviors.

The majority of American teens will participate in some illegal behaviors like vandalism or stealing before they graduate from high school. Most will also have sex by their nineteenth birthday (Singh and Darroch, 1999). To some extent participation in these risky behaviors is a developmental milestone that for many young people marks the transition from adolescence to adulthood (Jessor and Jessor, 1975). Although these behaviors are fairly normative, they also carry substantial risks, including pregnancy, disease, jail, and loss of reputation. The potentially

life changing consequences of these behaviors have prompted interest in understanding their sociological and cultural antecedents.

While participation in illegal behaviors or premarital sex tend to be characterized as risky or transitional behaviors, they have also been framed as moral acts which religion, in particular, can influence (Welch, Tittle, and Petee, 1991; Finke and Adamczyk, 2005). Morals refer to a consensus of some sort in society about how people should act or behave. Durkheim explained that religion exists because it unites people into a moral community. Unlike law and custom, religion alone “asserts itself not only over conduct but also conscience. It not only dictates actions but ideas and sentiments” (1886, 21). Other social scientists have drawn similar conclusions. Bronislaw Malinowski, for example, explained that every religion implies some reward of virtue and punishment of sin” (1935, viii).

Whereas these early writers suggested that religion in general works to sustain the moral order, we know today that only religions that give clear and consistent expression to divine moral imperatives will influence moral behavior (Stark, 2001). Christianity, Judaism, and Islam are examples of religions that provide moral guidelines. Within the United States, most people identify with Christianity¹, and a smaller but still relatively high percentage of Americans participate in religious services regularly, and purport to take religion seriously. Christian doctrine is principally concerned with the discernment of divine proscriptions and preferences for human behavior, which include prohibitions with legal sanction, as well as premarital sex. Because Christianity is dominant in the United States, religiosity as it is generally practiced should be associated with disapproval of premarital sex.

¹ According to the 2002 General Social Survey, 79.5% of Americans said that their religious preference was Christian, Protestant or Catholic. The percentage of people who said none was 13.7%.

Beyond personal actions, religion has shaped the nation's legal codes. Its historical and contemporary influence illustrates the contextual power of religion when adherents come together. Many western punitive laws are based on biblically inspired morals against, for example, stealing, murder, rape, and incest. Although they may now have secular justifications against them, their original sources were biblical precepts (Brinton, 1959). Additionally, many normative issues (e.g. premarital sexual relations, homosexuality, and abortion) that are not supported by legal precepts and the debates that surround them tend to be grounded in religious doctrine. The reason for this is that religion, unlike many other cultural institutions, offers explicit instructions for social action. Gods, who are concerned with humans, make demands, which are outlined in systematic sets of teachings and in scores of less formal traditions to which adherents are exposed and often study (Finke and Adamczyk, 2005).

Layout of Chapters

The strength of examining religious influences is that we know how they should relate to behaviors like extramarital sex and delinquency. A number of researchers have empirically confirmed an inverse relation between personal religiosity and first sex (Rohrbaugh and Jessor, 1975; Thornton and Camburn, 1989; Sheeran, 1993; Rostosky et al., 2003; Meier, 2003; Lefkowitz et al., 2004). Likewise, much social science literature has found a negative correlation with illegal acts and individual religiosity (Baier and Wright, 2001; Johnson *et al.*, 2002). In this project, religion is conceptualized as a group characteristic as well as an individual trait, which can shape individuals' behaviors, even if they are not personally religious. Below, I outline how my analysis will proceed.

The next chapter examines the association between three religious contexts (friends, schools, and states) first sex, and delinquency. First, I elaborate on the process producing an

association at each level. Next, I test each context, controlling for potential religious effects that are more proximal to the individual. In addition to direct associations, I look at whether a particular religious context is related to increases in consistency between personal religiosity and behavior. I find that the strength of the relation between individual religiosity and delinquency depends upon friends' religiosity. By contrast, the strength of the relation between individual religiosity and first sex is the same regardless of friends' religiosity. Religious friends and schools are directly associated with first sex.

In the third chapter I test several hypotheses about how friends' religiosity might influence first sex. I also examine whether first sex is associated with their romantic partners' religiosity, independent of their own religiosity. I find that feelings of guilt mediate the relation between religious friends and first sex, rather than social control processes. Further analysis demonstrates that consistency between sexual attitudes and behavior is unassociated with friends' religiosity. In the final part of this chapter, I find that, independent of individual religiosity, the religiosity of romantic partners is not associated with first sex.

In the fourth chapter, I examine the reciprocal relation between friends' religiosity and virginity loss. I find evidence for a bidirectional relation involving processes of selection, and influence. Independent of their own religiosity, adolescents who have religious friends tend to lose virginity later than teens with more secular friends. Moreover, teens who have lost their virginity subsequently select into less religious friendship groups.

CHAPTER 2- MULTIPLE RELIGIOUS CONTEXTS

A key question for sociology is, how are people influenced by the environments in which they experience life? Environments or settings are places where people engage in face-to-face interaction, such as friendship groups or classrooms. Together, the activities, roles, and interpersonal relations experienced in the setting shape and are influenced by individuals as they grow and develop (Bronfenbrenner, 1979). Because settings or contexts overlap (e.g. friendship groups nested within schools), behaviors and attitudes in one context may be reinforced or challenged in another.

Sociologists have long been interested in how teenagers' transitional or risky behaviors are associated with various contexts. Religion researchers have devoted considerable attention to understanding how the beliefs or level of religiosity within contexts such as schools or states shape sex and illegal behaviors and attitudes (Bainbridge, 1989; Cochran and Akers, 1989; Pettersson, 1991; Jelen, O'Donnell, and Wilcox, 1998; Moore and Vanneman, 2003; Regnerus, 2004). Judeo-Christian religions are particularly useful for understanding contextual influences because they proscribe behaviors like first sex and illegal behaviors, making clear how religion should relate to them (Finke and Adamczyk, 2005). Research has found that religion, characterized as a group property, either influences behaviors, regardless of personal religiosity (Adamczyk and Felson, 2005; Welch, Tittle, and Petee, 1991), or increases the consistency between personal religiosity and attitudes or behaviors (Scheepers, Te Gortenhuis, and Van Der Slik, 2002; Regnerus, 2004; Finke and Adamczyk, 2005).

Although these studies have made some valuable contributions to contextual research, they have left important questions unanswered, which limit our understanding of the context-behavior relation. To begin these studies almost always focus on a single religious context,

which is usually not at the micro level (e.g. friends or romantic partners). Because data from peers are difficult to obtain, theory and empirical analysis has been developed mainly on larger contexts. Because social scientists have not accounted for more proximate influences, we are unsure about whether theory is addressing a meaningful level of analysis.

Another problem with religious contextual research is that social scientists have not given sufficient attention to understanding when or how individual religiosity and religious contexts are associated with behaviors. If social support is congruent with religious beliefs, it could increase personal religiosity-behavior consistency. Conversely, religious contexts may be directly associated with behaviors or they could be related to them through socialization. Finally, a few studies (Finke and Adamczyk, 2005) have suggested that risky behaviors may be differentially influenced by religious contexts, if they are also illegal. Because these studies have only addressed a single context, we do not know whether the behavior or the level of analysis is responsible for religious context findings.

The research presented here tries to understand better which religious contexts shape first sex and delinquency, how they do it, and whether their influence varies according to the behavior examined. Taking data from the National Longitudinal Study of Adolescent Health (Add Health), I use information from friends to estimate friendship group religiosity and examine the association of religious friends, schools and the Bible Belt region with delinquency and first sex. I find that religious friends are associated with both behaviors, but the process through which they have a relation varies. I find a significant association between school religiosity and first sex and establish that smaller contexts mediate Bible Belt influences.

Religion and Risky Behaviors

Most Christian groups condemn both sex and delinquency, and much research has found a relation between religion and these behaviors. A number of studies (Rohrbaugh & Jessor 1975; Studer & Thornton 1987; Thornton & Camburn 1989; Cochran & Beeghley 1991; Sheeran et al. 1993; Zaleski & Schiaffino 2000; Holder et al. 2000; Meier 2003; Rostosky et al. 2004) have found that religious adolescents tend to delay their first sex. Likewise, researchers (for a review see Baier and Wright, 2001; Johnson *et al.*, 2002) have now established that religious individuals tend to participate in fewer illegal activities.

Although the church has taken a stance on extramarital sex and illegal activities, there is reason to think that religion may have a greater influence on behaviors like premarital sex, which are not illegal, but condemned by the church. For behaviors like sex, the church is highly vocal about when and under what circumstances it is acceptable. When issues of social concern are characterized by normative ambiguity and outside the purview of the law, there is greater potential for organized religion to have an influence (Burkett & White 1974; Tittle & Welch 1983; Hadaway, Elifson, & Petersen 1984; Finke & Adamczyk 2005).² If behaviors like stealing are uniformly sanctioned, then religion simply reinforces beliefs that are already a strong part of people's collective conscience and actions that have other deterrents. But, when religion provides clearer behavioral guidelines than other institutions, even secular individuals may be influenced by the church's stance. This relation is most likely to occur in places that have a high number of religious individuals, making it difficult for people, regardless of personal beliefs, to

² In their analysis of a sample of adults from Iowa, New Jersey, and Oregon, Tittle and Welch (1983:672) concluded that "when secular moral guidelines are unavailable, in flux, or have lost their authority and hence their power to compel, the salience of religious proscriptions is enhanced."

avoid knowledge of the church's guidelines or interaction with individuals who support religious precepts.

Context Selection

Important for theorizing how various religious contexts have an influence is whether or not they are understood as reducible to micro-level interactions or can be understood as *sui generis*. The former perspective is characteristic of Randall Collin's work on the macro-micro link (for other research on this perspective see Knorr-Cetina and Cicourel, 1981). Collins (1981; 1988) advocates micro translating all macro events. He explains that because more macro phenomena are created from the micro, the "ultimate empirical validation of sociological statements depends upon their micro translation" (Collins, 1988, p. 988). In contrast to this perspective, Durkheim (1951; 1995) sees societal forces, such as the "collective conscience," as *sui generis*. As he explains, "Collective tendencies have an existence of their own; they are forces as real as cosmic forces, though of another sort; they, likewise, affect the individual from without, through other channels" (Durkheim, 1951, p. 309).

Although Collins claims that macro influences can be reduced to micro processes, researchers have not tested this proposition, which would clarify how we understand and examine contextual effects. Because the process through which they have an influence varies, I expect macro and meso effects to remain after accounting for micro and individual influences. The three religious contexts I examine are friendship groups, schools, and regions. Below I describe the processes through which religion in each of these contexts relates to first sex and delinquency.

Micro-Level Influences (Friendship Groups)

Youth spend the majority of their time with other teens (Coleman 1974; Felson *et al.* 1994). Through interaction with friends, they learn evaluative definitions (norms, attitudes, and orientations) of certain behaviors and beliefs as good or bad (Akers *et al.* 1979).

Additionally, involvement in friendship groups provides opportunities to engage in behaviors such as alcohol use and dangerous driving (Osgood, *et al.* 1996). Because of the substantial amount of time teens spend with each other, friends are an important source for behavioral definitions, reinforcement, punishment, and opportunity. Friends' religiosity may directly influence first sex and delinquency or may work through individual religiosity to influence these behaviors.

When adolescents have religious friends, religious sentiments enter into the normative group context, impacting personal religiosity. When teens value their religious friends and spend time with them, their religious beliefs and behaviors may be influenced by their friends through socialization. Because religious teens are less likely to participate in delinquency and sex, friends' religiosity may influence these behaviors through personal religiosity.

In addition to religious socialization, more secular and religious teens may identify with their religious friends' behavioral standards, but not the content of their beliefs. In his work on attitude change, Kelman (1958) points out that individuals may adopt a group's values, regardless of the specific content. Because Christianity maintains clear proscriptions about certain behaviors, individuals who have religious friends will get more exposure to pro-abstinence and social conforming attitudes and have less contact with perspectives that violate religious precepts. Even if the religious underpinnings are not supported, teens may, through a process of identification, accept proscriptions about delinquency and premarital sex.

In addition to socialization and identification, individuals may comply with religious proscriptions because of their religious friends. If they value their religious friends and want them to react favorably, secular and religious teens may choose not to participate in premarital sex and delinquency. Research on strict churches (Iannaccone, Olson, and Stark, 1995; Iannaccone, 1994) has found that religious adherents tend, in part, to comply with the church's normative behaviors because of social ties to other members. Because of potential reputational costs and negative group sanctions, individuals with religious friends should be less likely than other teens to deviate from religious precepts.

Finally, involvement in conventional activities, like religious youth groups, could limit opportunities to engage in behaviors that violate group norms (Hirschi, 1969; Hoffmann, 2002; Felson, 2002; Adamczyk and Felson, 2005). Active religious groups often provide adherents with a chance to interact and become involved with other members (Stark and Bainbridge, 1980; Iannaccone, 1994; Stark and Finke, 2000). If teens are involved with religious friends in church-sponsored activities, they will have fewer opportunities to attend events and find willing accomplices to participate in behaviors that violate religious precepts.

Few studies (for exceptions see Adamczyk & Felson, 2005; Holder *et al.*, 2000; DiBlasio and Benda, 1994) have directly examined religious friends for delinquency or virginity loss.³ However, a lot of attention has been paid to delinquent peers (Treboux and Busch-Rossnagel, 1990; Thornberry *et al.*, 1994; DiBlasio and Benda, 1994; Benda and DiBlasio; Whitbeck *et al.*, 1999; Little and Rankin, 2001; Regnerus, 2002; Maxwell, 2002; Haynie, 2002). Much of this research shows that peers' attitudes and behaviors can substantially impact adolescents,

³ Although Holder *et al.* (1999) and DiBlasio and Benda (1994) included a measure on perceived spirituality/ religiousness of friends in their studies, these elements were not central and resulted in mixed findings.

suggesting that the religiosity of one's friends will have a constraining influence on adolescents' risky behaviors. At the level of individuals and their friends, religion should be associated with sex and delinquency through socialization, identification, compliance, and limited opportunities.

Meso-Level Influences (Schools)

Adolescents spend the majority of their days in school where they interact with teachers, administrators, coaches, and classmates. The school's physical and temporal organization can steer teens' behaviors, enabling teachers, and other socializing agents to influence teens' activities and development (Bronfenbrenner, 1983). Much empirical research has found that school contexts impact students' participation in sex (Teitler and Weiss, 2000) and delinquency (Stark, Doyle, and Kent, 1980; Stark, Kent, and Doyle, 1982; Felson, *et al.*, 1994; Regnerus, 2004). Although few researchers have examined the influence of schools net of friendship group characteristics, there is reason to think that school type and schoolmates' religiosity could independently influence adolescents' risky behaviors by limiting opportunities, integrating students and explicitly and implicitly teaching religious values.

In contrast to more secular schools, religious ones may be particularly successful at integrating students. In *Suicide* Durkheim (1951) explained that cohesive animated societies have "a constant interchange of ideas and feelings from all to each and each to all, something like a mutual moral support, which instead of throwing the individual on his own resources leads him to share in the collective energy and supports his own when exhausted" (p. 210). When adolescents feel integrated, they are less likely to participate in behaviors that deviate from group norms, as participation could jeopardize attachment to group members. Religion, as Durkheim (1995) points out, can be an important integrating force.

Because religious schools tend to be embedded in religious communities, students have

more face-to-face interaction outside the classroom with teachers and administrators, who may adhere to the school's religious tradition (Bryck, Lee and Holland, 1994). Likewise, because of their relatively small size, teachers in religious schools are more likely to take on coaching and supervisor roles for extracurricular activities, increasing their visibility. Because of their support of the school's religious tradition and the multiple capacities in which they are seen on a regular basis, school staff should provide students with the sense that they are a part of a religious school community. Integration should enhance social bonds to the institution, teachers, and other students, which deviation would jeopardize.

Schools may also implicitly or explicitly teach religiously inspired behavioral standards, limiting norm ambiguity about what is right or wrong. One of the initial purposes of public schools was to teach morality (Lynn, 1966). Catholic schools, which are the most prevalent type of private school, explicitly aim to inculcate a sense of justice and peace, integrating classes on moral development with instruction in other subjects (Bryck, Lee and Holland, 1994, p. 99). Finally, religious schools tend to have written codes of conduct that often include a dress code, behavioral standards, and a list of prohibited behaviors. Because this code is given before students are admitted, students and parents enroll agreeing to abide by these standards.

Although religious schools may be more vocal about their religious and moral socializing goals, few researchers have assessed their success relative to public and private secular schools.⁴ Public schools with a lot of schoolmates adhering to the same religious perspective might be similarly successful in socializing students and directly influencing their sexual and delinquent behaviors. Many public schools still allow school prayer, post the Ten Commandments, celebrate religious holidays, and give religious instruction on the premises (Kathan, 1989).

⁴ The majority of research on Catholic schools tends to focus on achievement (Neal, 1997; Bryck, Lee and Holland, 1994; Sander, 2001; Hunt, Joseph, and Nuzzi, 2001).

Likewise, although a school may not have an explicitly religious school administration, teachers may still have many of the same views as students and maintain visible roles as coaches and supervisors. Within homogenous and highly religious school environments, students should be most successful in regulating each other's behaviors through mechanisms like gossip, which tends to flow most readily in highly connected, morally homogeneous social networks (Coleman, 1990). Finally, adolescents tend to participate in delinquency with other teens, who act either as accomplices or as an audience (Felson, 2004). To an even greater extent sex requires a partner. If most of a teenager's schoolmates are religious, then adolescents interested in sex and delinquency will have more difficulty finding participants.

Macro-level influences (States)

While most people in the United States affiliate with Christianity, the "bible belt" region is homogeneously evangelical. With a greater religious consensus, people in that region should be better able to establish and enforce evangelically based behavioral standards. Although few researchers have examined state influences, net of individual, friend, and school effects, several have found some association between people's behaviors and regional religious characteristics (Pescosolido, 1990; Ellison and Musick, 1993; Moore and Vanneman, 2003). This research suggests that delinquency and first sex may be influenced by living in the Bible belt.

Through media messages, policies, and Christian imagery, Bible Belt states should send clearer and more consistent messages about illegal and sexual behaviors than other states. Government policies should reflect Evangelical viewpoints, limiting access to, for example, abortions⁵ and reducing discourse on alternative perspectives and lifestyles. Likewise, people in

⁵ The South has a disproportionate number of mothers under the age of 15, suggesting that if adolescents have sex at an early age and get pregnant, in contrast to other states, many will keep the baby. Indeed, an

Evangelical regions should experience more pro-religion media messages, observe more churches and a lack of other religious structures (e.g. synagogues and mosques), hear Christian music, see more religion billboards, and have less exposure to information that violates religious precepts. This infusion of Evangelicalism should remind adolescents that people in these states are clearly Christian and violations of religious precepts are not acceptable.

Teens in the Bible Belt should also endure more social control. In regions with high numbers of Evangelicals, adolescents have a greater probability of interacting with people such as police officers, city officials, clerks, waitresses, and even strangers, who share an Evangelical perspective. Because social bonds tend to form most readily between persons who share similar beliefs, interests, and activities, religious homogeneity should enhance social integration and people's sense of a religious community (Ellison, Burr, and McCall, 1997; Pescosolido and Georgianna, 1989; Pescosolido, 1990). Because of a shared religious orientation, people in these regions should be less willing to violate religious precepts, which could jeopardize their sense of attachment to other people in the area.

Religious Contextual Influences

Above I explained how religious friends, schools, and regions could be indirectly associated with first sex and delinquency through religious socialization and be directly related to the behavior. However, the relation between individual religiosity and delinquency and first sex may depend on social support for religion. Social psychological research (Albrecht, et al., 1972; Liska, 1974) suggests that when social support is congruent with attitudes, it will increase

examination of the abortion rate shows that it is relatively low in Southern regions. For births to teen mothers see Micro Case, State File, 1988 Percent of Births to Women Under 15 (NCHS). For state abortion rates see Micro Case, State File, 1992 Abortions Per 1,000 Live Births (SA 1996).

attitude-behavior consistency. Sociologists of religion refer to this relation as the moral communities hypothesis, which posits that when religious individuals are around other religious people, their own beliefs are more likely to influence their behaviors (Stark, Doyle, and Kent, 1980; Stark, Kent, and Doyle, 1982; Regnerus, 2004; Finke and Adamczyk, 2005).

Rodney Stark (1996), who initially laid the groundwork for the moral communities hypothesis, explains that the effect of religious contexts primarily functions in everyday interactions where individuals sustain and form interpretations of norms. Conversely, in irreligious settings, the sentiments of the majority suppress the effects of religion in the lives of religious minorities. As a result, religion for people in more secular settings becomes a compartmentalized part of their life.

The moral communities hypothesis posits that religious contexts primarily influence religious people. However, as mentioned above, religious friends, schools, and regions may also shape more secular teens' behaviors. When less religious adolescents are aware of Christian inspired behavioral standards, they may choose to comply with religious precepts, as deviation from them could jeopardize valued relations with religious friends, classmates, and school staff. Through internalization, more secular and religious teens may adopt behaviors consistent with religious precepts. Finally, in more religious contexts teenagers will have fewer opportunities to participate in behaviors, particularly sex, that violate religious precepts, regardless of personal religiosity.

Figure 1 presents a diagram of the three processes through which contexts may have an influence. Path 1 illustrates how religious friends, schools, and regions may enhance personal religiosity to effect delinquency and premarital sex. Path 2 shows the way religious contexts socialize teens, ultimately influencing their behaviors. Finally, path 3 illustrates how these

behaviors may be directly influenced by the three religious contexts through identification, compliance, and limited opportunities.

I expect micro, meso and macro religious contexts to be either directly associated with behaviors, have a relation through socialization, or first enhance individual religiosity. Given differences in social support and the necessity of a partner, religious contexts should be directly associated with the first sex of highly religious and more secular teens, but only be related to the illegal behaviors of religious adolescents. Even for more secular teens, sex requires a partner, and American religious institutions, which are highly supported, are very vocal about premarital sex. Conversely, religious social support for delinquent behaviors should only be relevant for religious adolescents.

DATA AND MEASUREMENT

Below I describe the measures used to assess the association between friend, school, and regional religiosity for delinquency and first sex. Table 1 provides information about how concepts are defined and corresponding measures calculated. Table 2 presents descriptive statistics for the in-home sample.⁶ To test for an association between religious contexts and first sex and delinquency participation, I use the National Longitudinal Study of Adolescent Health (Add Health), designed by the Carolina Population Center.⁷ Add Health is a three-wave school-based study on adolescents' (grades 7 to 12) health-related behaviors. The study was designed to

⁶ Because later chapters will focus exclusively on the saturated sample, aside from out-of-school nominations and friends' religiosity, descriptive statistics for that sample are not included here. Nevertheless, the range, mean, and deviations are very similar between the two samples.

⁷ For more information about the study, see the Add Health website at:

<http://www.cpc.unc.edu/projects/addhealth/design>. Richard Udry, who is one of the primary investigators for the collection of ADD Health data, mentioned to me that this dataset was designed in large part to examine contextual influences. It is, therefore, particularly appropriate for this study.

explore the causes of these behaviors, with an emphasis on social contextual influences (e.g. family, friends, schools, communities). Investigators sampled 80 schools from a complete database of all US high schools. High schools were selected using implicit stratification based on demographic characteristics such as ethnicity, size, and degree of urbanicity. Investigators also recruited primary schools linked to selected high schools, for a total of 132 schools.

Six months after in-school interviews, Add Health investigators randomly selected a subgroup of the original in-school sample for more extensive in-home interviews. Wave 1 in-home interviews took place in 1994 and 1995. The analysis presented in this chapter uses the cross-sectional component of the data. In later chapters I will use the longitudinal part to unravel the causal order of the friends' religiosity and first sex.

My analysis uses both the in-home sample and a subset of it, which is known as the saturated sample. In the saturated sample administrators attempted to give in-home questionnaires to all students on the school roster. While the saturated sample includes information on friends' religiosity, by virtue of design it includes only 16 schools, limiting the ability to detect significant school and regional level associations. Only one school in that sample is, for example, affiliated with the Catholic Church. To better assess school and regional associations, I use the in-home sample, which includes 132 schools and 33 states, but does not include any measures of friends' religiosity⁸. Together these two datasets are used to unravel the various associations of friends, schools, and regions.

⁸ Although the initial in-school Add Health sample includes friendship nominations, it does not have any religion measures. The latter in-home sample includes religion measures and friendship nominations, but without saturation sampling in each school, the missing data on friendship nominations is too extensive to obtain reliable network measures.

I eliminated one small special education school from the saturated sample, leaving a final sample of 15 schools. With this sample I was primarily interested in religious friends, and thus I excluded people who did not have any friend information. About 20% of my sample fell into this category. I deleted any married respondents from the samples (7 from the saturated and 75 from the in-home sample). Listwise deletion of missing cases on all other variables affected about 15% of the in-home sample and 7% of the saturated sample.

DEPENDENT MEASURE

The first dependent measure, premarital sex, is a dichotomous variable indicating whether or not the respondent has ever had sexual intercourse. Despite the sensitivity of the question, social desirability bias is less of an issue because questions about sexual intercourse were asked via audio computer-assisted interview (audio CASI). The second dependent measure, delinquency, is the sum of 11 nonage specific delinquent activities, that included things like stealing, graffiti, and selling drugs. Together they generate an alpha of .77.

KEY INDEPENDENT VARIABLES

Individual religiosity: Individual religiosity is calculated using information from four general religiosity questions. These questions ask about prayer, subjective religious importance, religious service attendance, and youth group participation. All of the items deal with theoretically similar elements of religion and together they generated an alpha of .86. One item, frequency of prayer, had five categories, while the other three measures had only four. Thus, before the overall mean was calculated, I standardized all the items.

Friends' religiosity: I calculate friends' religiosity from information based on friendship nominations collected by Add Health interviewers. Respondents were asked to identify up to five male and five female friends. The majority of respondents did not nominate the maximum

number of people and many nominated people outside of their school. The average respondent nominated a total of 5.2 people. When all unidentifiable friends are eliminated the average number of nominations drops to 3.2.

While previous research on the influence of friends tends to use perceptions of friends' religiosity, the network component of the Add Health saturated sample allows friends' religiosity to be calculated from the reports of respondents' friends themselves.⁹ Respondents could nominate people from inside or outside of their school. However, Add Health only contains information on friends within the school. Because friends outside of the school could provide an additional opportunity for sex or a partner in delinquency, I controlled for the number of out-of-school nominations. Respondents' information is linked to the survey responses of friends within the same school. The same survey questions were completed by both respondents and their nominated friends.

The friendship group includes any students who the respondent nominated as friends. Because a friendship religiosity score could not be calculated for adolescents who did not nominate any friends, these individuals were deleted from all analysis that relies on the saturated sample. A small proportion of respondents had romantic partner information. This information is not included here, but will be used in the next chapter when I look at the relation between religious friends and first sex. Friends' religiosity is calculated from a mean of the same four religion questions, as individual religiosity. Together they generate an alpha of .87. Although religious adolescents tend to have religious friends, the moderate correlation between respondent

⁹ One weakness to using information about perceptions is that respondents may overestimate the similarity of their own attitudes and behaviors with their friends' attitudes and behaviors (Jussim and Osgood 1989; Bauman and Ennett 1994; Ross et al. 1977). Other researchers (Brown 1999; Regnerus 2002) have suggested that perception of friends' attitudes and behaviors may be a better indicator of normative influence, because the information is coming directly from the respondent's interpretation.

and friends' religiosity ($r=.43$) indicates that there is considerable heterogeneity in friendship choice with regard to religiosity.

School religiosity: Three measures of school religiosity were constructed. First, respondents' reports of general religiosity were aggregated to the school level, which is the school mean religiosity. Secondly, schools were coded according to whether they were public, Catholic or private. The saturated sample included one Catholic school, four Protestant affiliated schools, and 10 public schools. The in-home sample included 5 Catholic schools, 4 protestant affiliated schools and 2 private schools that were not religiously affiliated. The remaining were comprehensive public schools. Finally, using Steensland et al's (2000) classification, the number of respondents who indicated that they adhered to a Conservative Protestant denomination¹⁰ was aggregated to the school level. The number of Conservative Protestants was divided by the total number of students within a school, producing the percentage of students who adhere to a Conservative Protestant denomination.

Regional religiosity: For assessing religiosity, I calculate the rate of people who adhere to a Conservative Protestant religion and the mean rate of religious attendance for 33 states. Using data from the 1990 Congregation and Congregational Membership study,¹¹ the percent of a state that adheres to a Conservative Protestant denomination is calculated. Steensland et al's (2000) classification is used as a guide to determine whether a particular denomination should be considered Conservative Protestant.

¹⁰ Because sample size was small, disaggregating other religions was not practical. Unfortunately, I could not make fine-grained distinctions about denomination among Add Health respondents because the in-home interviews did not include detailed denominational affiliations until wave 3.

¹¹ Congregation and Congregational Membership Data is collected every ten years. Because the 1990 data preceded the interview date, it was used.

CONTROL VARIABLES

At the individual level I controlled for respondents' denominational identity with dummy variables representing six religious groupings: Catholicism, Conservative Protestants, mainline Protestants, other Protestants, other religions, and no religion.¹² Academic achievement was measured as an average of self-reported grades from four academic subjects and race with five racial/ethnic categories. In addition to reporting more sexual activity and delinquency, African Americans, in contrast to Whites, tend to report higher levels of religiosity. Because the association between religiosity, first sex, and delinquency may differ according to race, I test for an interaction between African American and religiosity, using Whites as the reference category. Males tend to report more sexual activity and delinquency than females. I, therefore, controlled for gender. Research (Stark, 2002) has found that males tend to be less religious than females. Because the relation between first sex and individual religiosity may differ for males and females, I test for an interaction between gender and personal religiosity.

¹² Denominations coded conservative Protestant include: Adventist, African Methodist Episcopal, Assemblies of God, Baptist, National Baptist, Holiness, and Pentecostal. Mainline Protestants include: Disciples of Christ, Congregationalist, Episcopalian, Lutheran, Methodist, Presbyterian, United Church of Christ, and Quaker. Other Protestants were Protestants whose denomination was not ascertained. Other religions included: Christian Science, Jehovah's Witness, Mormon, Baha'i, Buddhist, Eastern Orthodox, Hindu, Muslim, Jew, Unitarian, and respondents with an unspecified other religion. Because sample size was small, disaggregating other religions was not practical. We followed Steensland *et al.*'s (2000) advice in choosing to classify Jehovah's Witness, Unitarian, and Christian Scientist as non-Protestant. Unfortunately, we could not make fine-grained distinctions about denomination among Add Health respondents because the in-home interviews did not include detailed denominational affiliations until wave 3.

Although I control for parental education, I could not account for income because too much data (roughly one-third of the cases) was missing on the available measures. The absence of an income measure should not, however, be a major drawback. Similar research (Meier, 2003) using Add Health data found that (logged) income was not significantly related to first sex. In addition to demographic controls, I also included a variable for dating status and three family context controls— closeness to parents, parental approval of premarital sex, and whether adolescents are living in two-parent families.

At the school-level I controlled for percent of students living with two-parents, percent Black, school metro location, school mean of parents' education, and school size. At the state level I controlled for percent of families below the poverty level, percent of females in the labor force, percent with a BA degree, percent White, state median income, and whether or not the state was located in the South.

METHODS

To assess the association between religious contexts and adolescents' risky behaviors I use hierarchical generalized linear modeling techniques (HGLM), which are also known as generalized linear mixed models (Breslow & Clayton, 1993). Because neither of the outcomes is linear, standard hierarchical linear modeling techniques are not appropriate. Unlike models that append contextual variables to individual-level data, hierarchical modeling correctly estimates the standard errors of the contextual variables (Bryk & Raudenbush 1992). This method adjusts for the correlated errors among individuals within the same context (e.g. schools or states) and uses the appropriate degrees of freedom for the school and state-level units. As a result, full micro-level and contextual models are simultaneously estimated.

Results

I begin the analysis by first estimating empty three-level models (one level for individuals, another for schools, and a third for states) for delinquency and first sex with the in-home sample. The saturated sample does not have enough states to warrant a three-level model. By examining the variance estimates in the three-level models, I am able to ascertain whether significant differences exist on the outcome across states and schools, which will confirm whether a three-level model is appropriate.

As shown in Table 3, there are no significant differences ($p > .10$) for first sex among states. However, among schools within states, there is significant variation, suggesting that a two-level model would be appropriate when using the in-home sample. For delinquency, there are significant differences ($p = .001$) between schools within states and among states, suggesting that a three-level model would be suitable (see Table 4) when the larger in-home sample is used.

Estimating First Sex

I first estimate the contributions of individual-level variables for first sex. This model provides a baseline estimate of first sex net of individual characteristics. Formally, the individual-level model is:

$$\log(\varphi_{ij}/1-\varphi_{ij}) = \eta_{ij} = \beta_{0j} + \beta_{1j}X_{1j} + \beta_{2j}X_{2j} + \dots + \beta_{19j}X_{19j}$$

All of the variables for this model will remain in their variable metric and the outcome for student i in school j is η_{ij} . At the level 2, I model β_{0j} as a function of the level-2 predictors. In preliminary analysis I looked at cross-level effects (i.e. the association between school religiosity and individual religiosity for first sex). No cross-level effects between the religion variables

were found. Thus, throughout this chapter all other level-1 coefficients are fixed. The level-two model is:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_j + \gamma_{02}W_j + \dots + \gamma_{08}W_j + u_{0j}$$

In this model j indexes the school level, β_{0j} is the intercept term from the individual-level equation (representing virginity loss adjusted for individual attributes), and u_{0j} is a school level norm disturbance assumed to be normally distributed with a mean of 0 and variance of t_0^2 . The intercept will be used to estimate the coefficient for the relation between school levels of religiosity and first sex.

Estimating Delinquency

For examining the association between religion and delinquency I first estimate the individual variables. Below I present a three-level model, which will be used with the in-home sample. For examining the association of only individual and school-level variables, which is done with the saturated sample, the second part of the full model is identical to the one above. The first part of the two and three-level model is:

$$\log(\lambda_{kij}) = \eta_{kij} = \pi_{00ij} + \pi_{01ij}A_{1ij} + \pi_{02ij}A_{2ij} + \dots + \pi_{018ij}A_{18ij}$$

Because the outcome is not linear (few adolescents will have participated in 11 delinquent acts, but most will have participated in one or two), I use a Poisson over-dispersion model to estimate the association between religion and delinquency. In this model all of the variables will remain in their variable metric and the outcome for student k in school i , within state j is η_{kij} which is the log of the event rate. If the event rate, λ_{kij} , is 1, the log is 0. The log will be positive when the

event rate is greater than 1, and negative when the event rate is less than 1. Although the λ_{kij} is constrained to be nonnegative, $\log(\lambda_{kij})$ can take on any real value. Below I present the school-level model:

$$\pi_{0ij} = \beta_{00j} + \beta_{01j} X_{ij} + \beta_{02j} X_{ij} + \dots + \beta_{08j} X_{ij} + r_{0ij}$$

In this model j indexes school level associations, π_{0ij} is the intercept term from the individual-level equation (representing delinquency participation for individual attributes), and r_{0ij} is a school level norm disturbance. The intercept will be used to estimate the coefficient for the relation between school levels of religiosity and delinquency. Below is the state-level model:

$$\beta_{00j} = \gamma_{000} + \gamma_{001} W_j + \gamma_{002} W_j + \dots + \gamma_{006} W_j + u_{00j}$$

In this model β_{00j} is the intercept term for the individual equation. W_j is the state characteristic used as a predictor for the state variable, β_{00j} . Finally, u_{00j} is a level-3 random effect that represents the deviation of state j 's coefficient β_{00j} , from its predicted value based on the state-level model.

RELIGIOUS CONTEXTS AND FIRST SEX

To determine the amount of variation that can be explained at the two different levels of analysis I first examine a model without any independent variables using the saturated sample. Analysis of this model showed that 68% of the variation in first sex can be found at the first level, and 32% can be found at the school level. For a hierarchical model 32% is a very large amount of variation between schools.

Table 5 presents the exponentiated odds for the association between religion and first sex using the saturated model. The first model, which includes denominational affiliation and

control variables, gives the baseline from which the inclusion of religion variables can be assessed. As expected, age, parental approval of sex, whether or not the student is in a romantic relation are all positively related to virginity loss. Adolescents who live in two-parent families, feel close to their parents or have higher grades are less likely to have lost their virginity than their counterparts. Although the negative coefficient for females suggests that they are less likely to have lost their virginity than their male counterparts, it is not significant. Likewise, parental education is not significantly related to virginity loss.

The only significant denominational category is for individuals who did not claim any religion. Its low level ($p < .10$) of significance disappears when individual religiosity is included. The changing sign of the coefficient for no religion from model 1 to model 2 in Table 5 is expected given that this variable is highly correlated with individual religiosity. Because low religiosity scores were imputed for all respondents who claimed no religious identity, collinearity is artificially high. None of the other denominational categories were significant, which is not surprising. Religious classification was based on approximately 30 specific denominations, including some called [Christian]. Many adolescents may not know the name of their specific denomination. Smith et al (2002) suggest, for example, that some of the adolescents who chose “Christian Church/Disciples of Christ (a non-conservative Protestant denomination) may include youth who mistook the category to mean “simply Christian.” Additionally, the categories were not extensive, lowering the measures’ reliability.

The second model includes a general measure of individual religiosity, and as much previous literature has suggested (Rohrbaugh & Jessor 1975; Studer & Thornton 1987; Thornton & Camburn 1989; Cochran & Beeghley 1991; Sheeran et al. 1993; Zaleski & Schiaffino 2000; Holder et al. 2000; Meier 2003; Rostosky et al. 2004), individuals who are more religious are

less likely to have lost their virginity. Each unit increase in individual religiosity is associated with a third reduction in the odds of having sex. Similarly, Model 3 shows that each unit increase in friends' religiosity is associated with an 22% reduction in the odds of having had sex.

Religious adolescents tend to have religious friends. The coefficient for individual religiosity declines slightly when friends' religiosity is included in the model. Nevertheless, because they are both significant when they are entered together, individual and friends' religiosity appear to account for unique variance in explaining virginity loss. Model 4 includes the interaction between individual and friends' religiosity. The insignificant coefficient suggests that the association between religious friends and first sex is the same for highly religious and more secular adolescents.

As mentioned above, the relation between personal religiosity and first sex could depend on respondents' race and gender. Before looking at school variables I examine an interaction between individual religiosity and gender, and individual religiosity and being Black. Although the latter was not significant, the former interaction had a p value of .04 and a log odd of -.25 (model not shown). For females, personal religiosity has a stronger negative relation with first sex than it does for males. I then ran two separate models for males and females to examine the personal religiosity coefficient for the two different genders. As shown in models 1 and 2 of Table 6, the coefficients for individual religiosity are quite similar (males=.71, females=.70). I further investigated the relative ranking of the interaction term against other variables in the model and found it to be one of the smallest, suggesting that although it is significant, differences in the personal religiosity-first sex relation for males and females are not great.

In the fifth model I include school religion variables, while controlling for micro and individual variables, including personal and friends' religiosity. School religiosity, percent

conservative protestant, and type of school are not significantly related to virginity loss.

However, in the sixth model I include the interaction between the percent conservative protestant and the level of general religiosity within a school. It is negatively associated with virginity loss ($p < .10$), and the coefficient for friends' religiosity does not change, suggesting that both are independently associated with first sex.

Model six only includes significant level-two variables. With 14 degrees of freedom (15 schools-1), the model does not have enough degrees of freedom to allow for the inclusion of all insignificant control variables. However, using a deviance test, which measures the lack of fit between model and data, I am able to discern whether additional school level variables significantly increase the overall fit of the model. The only school-level control variable to significantly ($<.05$) increase the fit is the percentage of students within a school that are living with two parents. When an additional parent is in an adolescent's household, teens should have fewer opportunities to lose their virginity. Although it is not significant in the final model, adolescents in two-parent families are less likely than teens living with only one parent to have lost their virginity. One important place that adolescents could find sexual partners is at school. When the school in general has a high percentage of two-parent families, adolescents' potential partners will have fewer places for first sex, decreasing their odds of first sex.

To compare the size of coefficients within a single model and get a sense of their relative strength, I multiply the logged coefficients by their standard deviations (Pampel 2000:33). Applying this rule to model 6 in Table 5, I find that individual religiosity ($-0.33 * 0.83 = -.27$) is having a stronger association with first sex than friends' religiosity ($-0.19 * 0.85 = -0.16$). By the same computation I find that the interaction between school religiosity and school percent conservative Protestant is one of the largest coefficients in the model ($-0.03 * 25.67 = -0.70$). It is

less influential than age and having been in a romantic relation, but larger than the percentage of students living with two parents, parental approval of sex, grades, parental closeness, and individual and friends' religiosity.

The strength of examining religious contexts with the saturated sample is that I can examine friends' religiosity, which cannot be done in the in-home sample. To more adequately examine school-level variables, I draw on the in-home sample to see whether any of the school variables are significant when a large school sample is examined. The results of this analysis are presented in Table 7. The first model gives a baseline comparison for examining religion. In contrast to the baseline in the saturated sample, many of the coefficients have increased in both size and significance. The coefficient for female is now significant, as are a number of the race variables. Individuals claiming no religion or a conservative protestant religion are more likely than adolescents claiming a mainline denominational affiliation to have had first sex.

In the remaining models I examine key religion variables. The second model includes individual religiosity, which shows that for every increase in individual religiosity adolescents are 47% less likely to have lost their virginity. In the third model I include all of the key school religion variables and a number of them are significant. School mean religiosity is negatively associated with virginity loss, while school percent conservative protestant is positively associated with it. While school mean religiosity is associated with a 30% decrease in the odds of virginity, percent conservative protestant increases the odds by 1%. Adolescents in both private protestant and nonreligiously affiliated private schools are less likely than adolescents in public or catholic schools to have lost their virginity.

In the final model I examine the interaction between percent conservative Protestant and school religiosity, finding that it is negatively associated with virginity loss. In the saturated

sample this finding was significant at the .10 level, in the in-home sample it is now highly significant ($p < .001$). When the interaction term is included there is a sharp decrease (33%) in the association between private Protestant schools and first sex, and the significance of this variable drops to .10. Much of the association between private Protestant schools and first sex appears to be explained by the combination of highly religious and conservative Protestant schools, suggesting that the association between private Protestant schools and first sex is not unique to private protestant schools, but rather highly religious and conservative schoolmates. With the inclusion of the interaction term, the coefficient for the two private nonreligiously affiliated schools also drops, yet remains negative and highly significant ($p < .001$), as it was in model 3. The last model includes only level-two variables that increase the overall model fit. The only school-level control variable to meet this criterion is the percentage of students in two parent homes, which is consistent with findings in the saturated sample.

Before examining delinquency, I looked at the interaction between gender and personal religiosity and race and personal religiosity. Consistent with my findings in the saturated sample, the interaction for gender and personal religiosity was significant and negative. But, relative to other coefficients in the model, it was again one of the smallest (ranked 15th of 19 significant variables). Unlike my finding for race in the smaller saturated sample, the interaction between being Black and personal religiosity was significant (log-odd=.21) in the relatively larger ($N=18,510$) in-home sample. In contrast to Whites, personal religiosity was less negatively associated to first sex for Blacks. Relative to other variables in the model, however, the interaction term is one of the smallest.

RELIGIOUS CONTEXTS AND DELINQUENCY

Having examined the relation between school and friends' religiosity on the odds of first sex, I now examine the extent to which religious friends and schools are associated with delinquency. I begin first by examining an empty model to see what percentage of the variance can be explained at each of the two different levels. While 97% of the variance is at the level of individuals, less than 4% is found at the school level. In contrast to virginity loss, much less variation is occurring at the school level.

Table 8 presents the exponentiated odds for the association between religiosity and delinquency using the saturated model. The first model includes all of the individual control variables, in addition to denomination affiliation. Many of the significant coefficients are in the expected direction. Age, parental closeness, and grades are negatively associated with delinquency. Females are less likely than males to participate in delinquency. Individuals who nominated more friends from outside of their school were more likely to be delinquent. In contrast to students who affiliated with mainline Protestant denominations, adolescents whose denomination was categorized as Conservative Protestant were more likely to have participated in delinquency.

In the second model I include individual religiosity. It is significant and negatively associated with delinquency participation, which is consistent with much previous literature (Baier and Wright, 2001; Johnson *et al.*, 2002). In the third model I include friends' religiosity, which is not significant ($p > .10$), and in the fourth model I examine the interaction between individual and friends' religiosity, which is significant and negative. In contrast to my findings for virginity loss, friends' religiosity appears to enhance individual religiosity to deter delinquency for religious adolescents, but not more secular teens. In Chart 1 I show the

interaction between individual and friends' religiosity for a sixteen year old white male, who has been assigned either the mean or reference category for all of the other variables in the model. Among adolescents in general delinquency is fairly normative. The adolescents in the saturated sample participated in an average of 1.5 delinquent activities. Of course, the rate is much higher for boys than girls. The chart shows that the delinquency rate for boys who are highly religious and have highly religious friends is 1.45 delinquent acts. For boys who are highly religious but have more secular friends, the average rate is 2.20.

In model 5 of Table 8, I include the key school religion variables. Although school religiosity is negatively related to delinquency, it is not significant ($p > .10$). The only school-level religion variable to be significant is the type of school. In contrast to adolescents in public and Protestant schools, Catholic school students are more likely to have been delinquent. This is likely related to a selection effect into Catholic schools (more delinquent adolescents enter Catholic schools and/or leave public schools), rather than the socializing influence of the Catholic school system.

In the final model I entered only the school-level variables that improved the overall model fit. These variables did not include any of the school-level controls, such as school location (e.g. urban), school size, or percent of students in two parent families. I computed the relative size of the coefficients and found that relative to the other variables in the final model, Catholic schools are explaining less variation than gender, grades, number of out of school nominations, age, parental closeness, and being in a romantic relation. The association between Catholic schools and delinquency is explaining slightly more variation than the interaction between individual and friends' religiosity. In a model not shown here I found that neither the

interaction between personal religiosity and being Black or personal religiosity and gender were significantly related to delinquency.

The last group of models, which can be found in Table 9, further support the lack of school-level findings for delinquency. They also test whether there are any significant state religious associations, beyond those found at the school and individual levels. I first ran an empty model for delinquency and found that 98% of the variation in this model is occurring at the individual level, about 1% at the school level, and less than 1% at the state level. Despite their small numbers, the variation at the school and state levels are significant, and therefore require a three-level model.

Table 9 presents the exponentiated log-odds for the association between religion and delinquency. The first model gives the association between religious denomination affiliation and delinquency along with the control variables. The direction and magnitude of the control variables is similar to those found in the first model of the saturated sample that examined delinquency. The second model includes individual religiosity. Like all of the previous models, this variable is significant and negative. For every unit increase in individual religiosity, delinquency participation decreases by 11%. The third model includes all of the key school and state religion variables. Like the findings from the saturated sample, only Catholic school is associated with delinquency and it is positive. The final model includes only school and state level variables that significantly improve the overall fit of the model. Aside from school type, the only other school or state level variable that is significant is the percentage of students within a school that are living with two parents, which is negatively associated with delinquency. Although there is little variance in delinquency to be explained at the school and state levels, the

variables I examined could not explain all of it. The final model explains 17% of the overall variance.

Finally, I examined the interaction between race and personal religiosity and gender and personal religiosity (models not shown). Consistent with my findings in the saturated sample, the interaction between being Black and personal religiosity was not significant. However, the interaction between gender and personal religiosity was significant at the .05 level and negative (Log-odd=-0.05). For females individual religiosity is more negatively related to delinquency than it is for males. However, relative to other variables in the model, the coefficient is quite small (ranked 14th out of 17 significant variables).

Discussion and Conclusion

Consistent with much previous research (Rohrbaugh and Jessor 1975; Studer and Thornton 1987; Thornton and Camburn 1989; Cochran and Beeghley 1991; Sheeran et al. 1993; Zaleski and Schiaffino 2000; Holder et al. 2000; Baier and Wright, 2001; Johnson et al., 2002; Meier 2003) the findings presented here show that individual religiosity is negatively associated with virginity loss and delinquency, even while considering socio-demographic characteristics, denominational affiliation, school and state religiosity and other important factors such as parental warmth and approval of sex.

For most of the models individual denominational affiliation was unrelated to delinquency or first sex. Few differences were found, in part, because all major religions proscribe the behaviors examined, and the Protestant denominational categories given were limited, which made classifying adherents difficult. In the first wave of Add Health, for example, Baptist respondents were not probed further to distinguish between Southern and Northern

Baptists, an important distinction for categorizing them into Conservative Protestant and mainline groups.

One notable denominational difference for first sex was between mainline and Conservative Protestants. In the in-home sample, I found that Conservative Protestants were more likely to have had sex than adolescents in any of the other categories (Catholic, Mainline, Other Protestant, Other religions, and people with no religion). This finding remained after controlling for individual religiosity, which suggests that simple affiliation, rather than religious importance or practice, is producing the association. Researchers have found evidence that social class is related to first sex and religious preference. Although my analysis included parental education, I could not control for income. A better measure of social class might account for the Conservative Protestant finding. Nevertheless, Conservative Protestants in the smaller saturated sample did not significantly differ from teens claiming a Mainline affiliation, and in the larger in-home sample this variable was one of the smallest (ranked 14th out of a possible 19 significant variables).

With regard to friends' religiosity, I found that friends' support increases consistency between personal religiosity and delinquency. This finding supports much previous research on religious contextual effects (Pescosolido 1990; Kelley and DeGraaf 1997; Jelen, O'Donnell and Wilcox 1998; Scheepers, Te Grotenhuis, and Van Der Slik 2002; Finke and Adamczyk 2003; Regnerus 2003; Pearce and Haynie, 2004), as well as social psychological literature on attitude-behavior consistency (Liska, 1974). For first sex, however, friends' religiosity does not moderate the link between personal religiosity and first sex, and it is minimally related to individual religiosity. Conversely, friends' religiosity appears to be directly associated with first sex, which previous research examining first sex has also found (Adamczyk and Felson, 2005).

In addition to religious friends, I found that school religiosity is related to first sex. Specifically, the interaction between percent Conservative Protestant and the level of school religiosity was inversely associated with first sex, even after accounting for personal and friends' religiosity, and several individual and school-level controls. In addition to the interaction, school type was related to first sex, after accounting for individual and school-level variables. Teens in public schools were more likely to have had first sex than adolescents in private protestant and private non-religiously affiliated schools. However, a nonsignificant relation was found between school type and first sex in the smaller sample, which includes friends' religiosity measures, but lacks any private non-religiously affiliated schools.

In both samples Catholic school students were more likely to participate in delinquency, which was not significantly associated with any other school-level religion variables. Although associated at the bivariate-level, state religiosity was not significantly related to first sex or delinquency when individual, micro, and meso variables were also considered.

Friends' Religiosity and Delinquency

The strength of my finding for illegal behaviors is that I use religious friends as the social support context to confirm the moral communities hypothesis. The moral communities hypothesis is based on the idea that social support can increase attitude-behavior consistency (Stark, 1996). If social support and attitudes are congruent, then the attitude-behavior relation is accentuated, but if they are incongruent, the relation is depressed (Liska, 1974). Almost all religious contextual research examining the link between personal religiosity and illegal behaviors has found that the relation depends on social support (Stark, Doyle, and Kent, 1980; Stark, Kent, and Doyle, 1982; Stark, 1996; Regnerus, 2004). However, the majority these

studies tend to focus on larger contexts like schools, regions, and nations. Few have taken religious friends as the social support context.

Because adolescents spend the majority of their unstructured time with friends, they can be an important source of regulation, norms, and opportunity for delinquency, which adds to our general understanding of religious contexts, and religious friends specifically. Because delinquency tends to take place within a group context, when adults are absent social control is reduced and a lack of structure leaves time available for delinquent behavior (Osgood et al., 1996; Marcus, 2002). Adolescents who are more religious and have religious friends will likely have fewer unstructured opportunities to participate in delinquency. When friends are similarly religious they can better monitor teens' behavior because there will be little norm ambiguity in what is acceptable behavior. Finally, when adolescents are both religious and have religious friends, they will receive less exposure to ideas and behaviors that violate religious precepts, supporting adherence to behaviors consistent with religious precepts.

Friends' Religiosity and First Sex

Whereas friends' support was associated with an increase in the personal religiosity-delinquency relation, friends' religiosity directly associated with first sex. Like delinquency, friends' religiosity was minimally related to individual religiosity, suggesting that religious socialization by religious friends is not primary for understanding the friends' religiosity-first sex link. The direct associated with friends' religiosity and first sex suggests that the relation may be due to opportunity limitations, internalization, and attitude compliance. Because few researchers have examined religious friendship effects, finding a direct link not only adds to our understanding of religious contexts, but also brings nuance to the friends' religiosity-first sex relation.

While delinquency tends to take place and is more rewarding in a group, other people are not necessary. Adolescents can steal, joy ride, and vandalize property without their friends. However, sex clearly requires a partner, which could be one reason why friends' religiosity is associated with the first sex of more secular and highly religious adolescents. Teens often take sexual partners from their friendship networks (Parks, Stan, and Eggert, 1983). When more secular adolescents have religious friends, they will have more difficulty finding a sex partner, as religious teens tend to delay first sex.

In addition to limited opportunities, teens with religious friends may internalize their friends' sex attitudes, even if the religious foundations do not resonate. Rather than a violation of religious precepts, adolescents may see premarital sex as a risk to their future or may want to wait until they find the right person (Blinn-Pike, 1999). Additionally, teens may choose to comply with religious precepts because they want their friends to react favorably to their behaviors (Kelman, 1958). Likewise, they may try to avoid jeopardizing valued relations by participating in behaviors of which friends may disapprove (Hirschi, 1969).

While friends' religiosity appears to be significant for both highly religious and more secular teens, friends' religiosity is related only to the delinquency participation of religious youth. In other words, religious friends' support is associated with an increase in consistency for the personal religiosity-delinquency link, but is noted associated with the relation between personal religiosity and first sex. These findings vary, in part, because of differences in opportunity and legality of these behaviors.

For more secular and religious teens, first sex requires a partner. Thus, even if teens are interested in it, religious friends would limit sex opportunities because more religious

adolescents tend to delay first sex. Delinquency often takes place within a group context, but does not by definition require a partner (Felson, 2002).

In addition to differences in the necessity of a partner, another explanation may have to do with differences in the extent to which sex and delinquency are uniformly sanctioned. Unlike first sex, delinquent acts (e.g. vandalism, stealing, etc.) are illegal. Thus, there is an authority system in place that formally condemns participation. Conversely, the legal system minimally regulates sexual intercourse, but religion is quite vocal about when and with whom it is appropriate. Although there is much variation in how this precept is understood and exercised, all of the major religions (Christianity, Judaism, Islam, Hinduism, and Buddhism) support it. If attitudes and behaviors are uniformly sanctioned, then religion simply reinforces beliefs that are already a strong part of people's collective conscience and actions that have other deterrents (Burkett & White 1974; Tittle & Welch 1983; Hadaway, Elifson, & Petersen 1984). As a result, religious teens may be the only ones influenced by religious contexts when illegal behaviors are examined.

The strength of religion for more secular individuals is found in behaviors that do not have legal guidelines because it is here that religion may be the most vocal deterrent (Finke & Adamczyk 2003). Even for more secular adolescents and their parents, the appropriate timing of first sex is ambiguous. Evangelical and Catholic groups have been particularly vocal about the appropriate standards for sex behaviors (e.g. homosexuality, abortion, intercourse, etc.). When more secular and religious teens regularly interact with people who are religious, they become aware of guidelines about sex, making them less likely than their counterparts without religious friends to have first sex.

School Religiosity

Like the association between friends and first sex, teens in highly religious and conservative schools, were less likely to have had sex than adolescents in more more secular schools.. Before accounting for schoolmates' religiosity, the virginity status of Private Protestant School students significantly differed from that of teens in other school types (e.g. public, Catholic). Further analysis showed that Private Protestant schools are associated with adolescents' first sex through conservative beliefs and high school levels of religious importance and participation, rather than through their private Protestant school administration. The associated between first sex and highly religious and conservative schoolmates remained even after I accounted for friends' religiosity and many other individual and school-level controls.

There are three main reasons why adolescents with highly religious and conservative schoolmates may be less likely than other teens to have had sex. Most importantly, teens, regardless of personal religiosity, may have difficulty finding a sex partner when their schoolmates are highly religious and conservative. As mentioned above, when teens have religious friends, they are less likely to take a partner from their friendship group because religious teens tend to delay first sex. Teens interested in sex may then turn to other schoolmates. If their schoolmates are also highly religious and conservative, they may have particular difficulty finding a sex partner.

In addition to limited opportunities, teens with highly religious and conservative schoolmates may experience more monitoring and sanctioning than teens in more secular schools. In schools with a lot of religious students, even more secular adolescents may comply with biblically supported norms because they do not want to endure punishment for norm violations. One way teens may be sanctioned is through gossip, which helps establish norms and punish

individuals who deviate (Coleman, 1990). Coleman (1990) points out that gossip flows most readily in highly connected morally homogeneous social networks. Schools that are homogenous and highly religious may, therefore, be particularly effective at sanctioning norm violators through mechanisms like gossip.

Finally, teens in highly religious and conservative schools should get clearer messages about premarital sex, regardless of personal religiosity. Although their religious beliefs and behaviors may not be effected, teens may internalize messages about first sex, ultimately delaying virginity loss. My research shows that by itself school percent conservative Protestant is positively associated with first sex, while highly religious schools, are negatively related to first sex. Because all major religions proscribe premarital sex, a high percentage of schoolmates that adhere to a conservative Protestant denomination may not be much of a deterrent. However, when schoolmates are both highly religious and conservative teens are less likely to have had first sex. Because conservative protestant tend to stress religious participation, their conservative beliefs may be full manifested only when regularly activated through participation and strength of beliefs (Stark and Finke 2001).

Whereas highly religious and conservative schoolmates appear to limit first sex, they are not associated with delinquency. Indeed, my research found that Catholic school students were disproportionately delinquent when compared to students in public, private protestant, and non-religiously affiliated private schools. Because this relation remains after accounting for students' beliefs and Catholic religious affiliation and their friends' religiosity, we know that something about Catholic schools in particular, is related to delinquency, rather than the religious beliefs and behaviors of Catholic teens.

Catholic schools have long been seen as an acceptable alternative to public schools, even when adolescents are not Catholic. If teens are asked to leave public school because of delinquent behaviors, many parents may find Catholic schools an acceptable alternative. Even if they are not expelled, parents may put their children in Catholic school to reform them, ultimately resulting in a disproportionate number of delinquent teens in Catholic school.

State Religiosity

After accounting for individual and school religiosity, state percent Conservative Protestant is not associated with delinquency or virginity loss. Within the U.S. 80% of people are Christians, and this percentage does not vary substantially (General Social Survey, 2002). Although the percentage of Conservative Protestants varies, much more variation tends to occur within states than between them, and like all the major religions, Christianity in general proscribes premarital sex and delinquency. Although the Bible Belt may have more religious imagery and give Evangelical stories and issues more media attention, this and other signs that a state is heavily Conservative Protestant simply does not appear strong enough to influence adolescents' risky behaviors, after accounting for personal religiosity and religious friends and schools.

Macro, Meso, and Micro

In addition to understanding the specific associated between religious contexts, first sex and delinquency, this research makes an important contribution to how we theoretically understand macro, meso, and micro effects. Collins' (1981; 1988) research on the macro-micro link posits that larger units of analysis consist of smaller units and thus, influences found at the aggregate level (e.g. schools, states, countries) should be micro-translated to best understand the process through which they are associated with the behavior being examined. Applying this

logic to my research, one would think that associations found at meso and macro levels like schools and states would be found at the level of friends. That is, before accounting for friends, significant findings at micro level would appear in school and state-level analyses, but disappear once friends were included.

Whereas, smaller contexts clearly mediated Bible Belt influences on first sex and delinquency, school religiosity could not be reduced to associations at the friendship level, suggesting that some contexts may not be micro-translated. When I examined the influence of religious friends for virginity loss I found that the exponentiated odds for religious friends changed minimally (0.820** to 0.827*) when significant school-level religion variables were included. Likewise, I looked at the mediating influence of religious friends for the significant relation between percent conservative protestant and school religiosity on first sex. Again, the coefficient for the interaction term changed only slightly (0.973+ to 0.971+). I ultimately found that virginity loss was influenced by friends and school religiosity, each explaining different variation.

My findings suggest that Durkheim's (1952) concept of *sui generis* influences may be more appropriate for understanding religious contextual effects than Collins' view that macro influences should be micro translated. In *The Elementary Forms of Religious Life*, Durkheim posited that "collective tendencies have an existence of their own," which cannot be reduced to micro-level forces (1952, p. 309). Collectives, in other words, have the power to influence individuals, beyond micro interactions and personal beliefs.

Figure 2.1
Processes through which Religious Contexts may have an influence

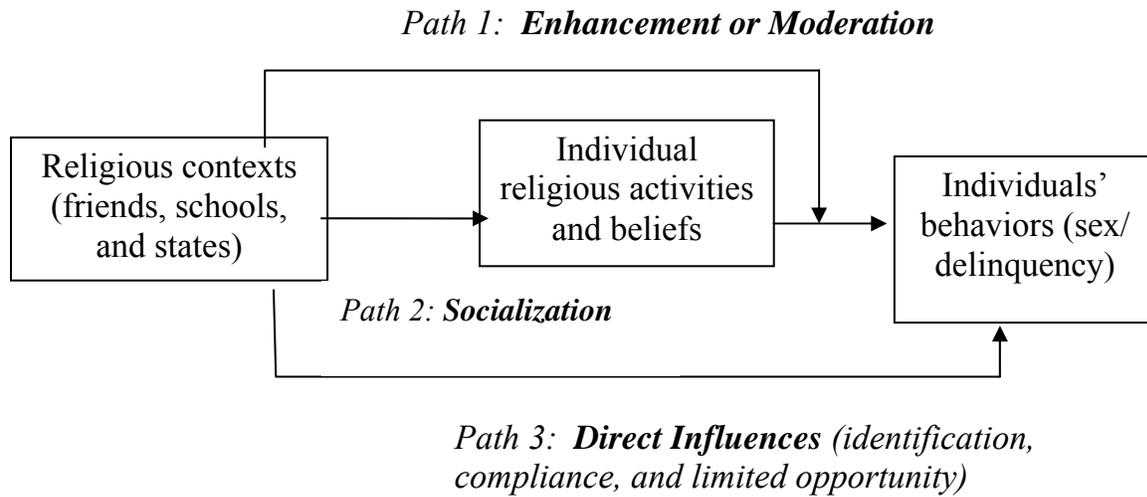


Table 2.1
Description of Variables Included in the Analysis

Note: All measures, except friends' religiosity and number of nominations, were calculated for both the in-home and saturated samples. Calculations (e.g. Cronbach alphas) shown are for the in-home sample.

	Definition	Calculation/ Value
Dependent variable		
Sexual Intercourse	Dummy variable indicating whether or not the respondent "ever had sexual intercourse? When we say sexual intercourse, we mean when a male inserts his penis into a female's vagina."	No=0, Yes=1
Delinquency	Mean value of participation in 11 minor delinquency items during the past 12 months	0=Never, Once or more=1 Cronbach's alpha=.77.
Key Independent Variables		
Individual religiosity	Mean of four measures from respondent: church attendance, religious youth activities, frequency of prayer and subjective religious importance	Church attendance and religious youth activities range from 1=never to 4=once a week or more; frequency of prayer ranges from 1=never to 5=at least once a day; and religious importance ranges from 1=not important at all to 4=very important. Cronbach's alpha=.86
Friends' religiosity	Mean of four individual religiosity measures for people who were nominated by the respondent: church attendance, religious youth activities, frequency of prayer and subjective religious importance	Same as individual religiosity Cronbach's alpha=.87
School Mean Religiosity	Overall mean of four measures from respondents in each school	Same as individual religiosity
School % Conservative Protestant	Percent of school that adheres to a Conservative Protestant Denomination	
School type	Public, Protestant affiliated, Catholic, Private nonreligiously affiliated	Public (reference category), Protestant affiliated, Catholic, Private nonreligiously affiliated
State % Conservative Protestant	Total number of individuals in a state affiliated with a conservative Protestant congregation divided by the total state population	

Individual Controls		
Age	Respondent's age at time of initial survey	
Two-parent family	Dummy variable indicating whether respondent lives at home with two parents.	0=Other arrangement 1=Two parent home
Gender	Dummy variable	Female=0, Male=1
Race	Set of dummy variables	White (reference category), Black, Asian, Hispanic, Other Race
Parent's education	Mean of mother, father, or parent's spouse's education on a 9-point scale, as reported by the respondent and one parent.	9-point scale: 0 = no schooling, 8=graduate degree Cronbach's alpha=.89.
Average Grades	Average of grades available in math, English, science, and history or social studies, as reported by the respondent.	1=D or lower 2=C, 3=B, 4=A Cronbach's alpha=.74.
Religious denominational categories	Dummy variables for five gross denominational categories. Black Protestant denominations were coded as conservative Protestants, because there were too few for a separate category.	Mainline Protestant=0 (reference category) Catholic, conservative Protestant, other (unspecified) Protestant, Other religion, no religion
Romantic relation	Whether or not the respondent has been in a romantic relationship.	
Parental attachment	Mean value of available score for five items: (1) feel close to mother, (2) feel close to father, (3) feel mother cares about you, (4) feel father cares about you, and (5) feel parents care about you (Cronbach alpha = .70)	Ranges from 1=Not at all to 5=Very much
Parental approval of premarital sex ^b	Mean value of available score on four items asked of a parent and the respondent. Items asked of the respondent for each parent: (1) how would your mother feel about you having sex at this time in your life and (2) how would she feel about you having sexual intercourse with someone you knew well and was special to you? Items asked of mother: (1) how much do you disapprove of your child having sexual intercourse at this time, and (2) if it was someone that was special and he or she knew well, you would not mind?	Ranges from 1=strongly disagree to 5=strongly agree Cronbach alpha=.79.
Out-of-School	Sum of instances of codes indicating out-of-school	

Nominations	nominations.	
School-level Controls		
Percent of students living with two parents	Percentage of students within each school that live in a two-parent household aggregated from respondent information	
Percent Black	Percentage of African American students within each school aggregated from respondent information.	
School metro location	Dummy variable of three metropolitan locations from administrator information	Suburban (reference category), Urban, and Rural
School mean of parents' education	Mean value of parents' education as reported by the respondents	
School size	Dummy variable of high school size from administrator information	125 or fewer students, 126-350 students, 351-775 students, and 776 or more students (reference category)
Regional-level Controls		
Percent of families below poverty	Percentage of total households below the poverty level	
Percent of females in the labor force	Percentage of females 16 and over that are in the labor force	
Percent with a BA degree	Percentage of the total population with at least a BA degree	
Percent white	Percentage of the total population considered White	
State median income	Household median income in 1998 (dollars)	
South	Dummy variable	0=Other region, 1=South

Table 2.2

Descriptive Statistics for Variables Included in the Analysis

Note: Except for friends' religiosity and out-of-school nominations, all statistics are presented for the in-home sample.

	N	Min	Max	Mean	S.D.
Dependent variable					
Sexual Intercourse	19959	0	1	0.40	0.49
Delinquency	19896	0	11	1.51	2.02
Key Independent Variables					
Individual religiosity	18623	-1.44	1.20	.0243	.82797
Friends' religiosity	2765	-1.36	2.13	0	0.85
School Mean Religiosity	132	-.88	.97	.0151	.34351
School % Conservative Protestant	132	0.83	95.92	32.02	24.06
Public	132	0	1	0.92	0.28
Catholic	132	0	1	0.04	0.19
Private Protestant affiliated	132	0	1	0.03	0.17
Private nonreligiously affiliated	132	0	1	0.02	0.12
State % Conservative Protestant	132	3.52	56.16	21.20	14.25
State Mean Religious Attendance					
Individual Controls					
Age	18623	137.00	255.00	193.25	20.34
Two-parent family	18623	0.00	1.00	0.65	0.48
Female	18623	0.00	1.00	0.50	0.50
Hispanic	18623	0.00	1.00	0.07	0.26
Black	18623	0.00	1.00	0.22	0.42
Asian	18623	0.00	1.00	0.07	0.26
Other race	18623	0.00	1.00	0.03	0.17
White	18623	0.00	1.00	0.61	0.49
Parent's education	18623	0.00	8.00	4.82	1.83
Average Grades	18623	1.00	4.00	2.75	0.77
Catholic	18623	0.00	1.00	0.26	0.44
Mainline	18623	0.00	1.00	0.21	0.40
Evangelical	18623	0.00	1.00	0.30	0.46
Other protestant religion	18623	0.00	1.00	0.06	0.23
Other religion	18623	0.00	1.00	0.06	0.23
None	18623	0.00	1.00	0.12	0.32
Parental attachment	18623	1.00	5.00	4.65	0.52
Parental approval of premarital sex ^b	18623	1.00	5.00	2.35	0.68
Romantic relation	18623	0.00	1.00	0.55	0.50
Out-of-School Nominations	3581	0	10	1.62	1.93
School-level Controls					
Percent of students living with two parents	132	0.27	0.97	0.64	0.15
Percent Black	132	0	1	0.22	0.28
Urban school location	132	0	1	0.30	0.46

Suburban school location	132	0	1	0.55	0.50
Rural school location	132	0	1	0.14	0.35
School mean of parents' education	132	2.83	7.19	4.88	0.81
Small school	132	0	1	0.03	0.17
Medium sized school	132	0	1	0.10	0.30
Large sized school	132	0	1	0.27	0.44
Extra large sized school	132	0	1	0.61	0.49
Regional-level Controls					
Percent of families below poverty	33	5.04	20.17	11	3.66
Percent of females in the labor force	33	42.63	63.36	56.09	4.08
Percent with a BA degree	33	12.30	27.20	19.49	3.93
Percent white	33	33.35	98.64	79.53	10.22
State median income	33	20136	41721	29219.96	5333.23
South	33	0	1	0.41	0.49

Table 2.3
Variance Components for School and State influences on First Sex
 Three-level model

Random Effects	Var. Comp.
<i>Level-one (Individual) Variance:</i> ^a $\sigma^2 = \text{var}(F_{ijk})$	0.240
<i>Level-two (School) Variance:</i> $t_0^2 = \text{var}(U_{ojk})$	0.871***
<i>Level-three (State) Variance:</i> $= \text{var}(V_{00k})$	0.003

^a The level-one variance reported here does not include the random component ($\sigma^2_r = \pi^2/3 = 3.29$).

***<.001

Table 2.4
Variance Components for School and State influences on Delinquency
 Three-level model

Random Effects	Var. Comp.
<i>Level-one (Individual) Variance:</i> $\sigma^2 = \text{var}(R_{ijk})$	2.601
<i>Level-two (School) Variance:</i> $t_0^2 = \text{var}(U_{ojk})$	0.029***
<i>Level-three (State) Variance:</i> $= \text{var}(V_{00k})$	0.014***

***<.001

Table 2.5
Hierarchical Linear Models of Religion on Virginity Loss
Using the Saturated sample
 Individual N=2,598, School N=15
 Exponentiated Odds

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Intercept	1.04	***	-8.16	***	-8.02	***	-8.04	***	-8.44	***	-6.13	***
Demographic Controls												
Age in Months	1.04	***	1.04	***	1.04	***	1.04	***	1.04	***	1.04	***
Hispanic	1.60	*	1.60	*	1.63	*	1.55	*	1.62	*	1.60	*
Black	3.42	***	3.56	***	3.56	***	3.53	***	3.49	***	3.32	***
Asian	1.19		1.31		1.36		1.36		1.36		1.31	
Other Race	1.48		1.55		1.60		1.60		1.62		1.54	
Female	0.92		0.95		0.96		0.96		0.96		0.96	
Additional Controls												
Parental Approval of Sex	1.57	***	1.51	***	1.51	***	1.51	***	1.51	***	1.51	***
Parent Educational Attainment	0.97		0.96		0.96		0.97		0.97		0.97	
Two-Parent Family	0.80	*	0.82	*	0.81	+	0.81	+	0.81		0.83	
Parental Closeness	0.79	*	0.81	*	0.82	*	0.82	*	0.82	*	0.82	*
Romantic Relation Grades	5.10	***	5.05	***	5.05	***	5.05	***	5.05	***	5.05	***
Out Nominations	1.17	***	1.19	***	1.17	***	1.17	***	1.17	***	1.17	***
Denomination												
Catholic	0.99		0.95		0.93		0.93		0.93		0.92	
Conservative Protestantism	1.16		1.23		1.25		1.25		1.22		1.23	
Other Protestant Religion	0.89		0.89		0.88		0.88		0.88		0.85	
Other Religion	0.94		0.84		0.83		0.83		0.83		0.81	
No religion	1.40	+	0.80		0.79		0.78		0.79		0.80	
Key Independent Variables												
<i>Individual religion variable</i>												
Individual religiosity			0.68	***	0.71	***	0.68	***	0.71	***	0.72	***
<i>Friends' religiosity</i>												
Friends' religiosity					0.82	**	0.83	*	0.83	*	0.83	*
Interaction between individual and friends' religiosity							1.04					
<i>School religion variables</i>												
School Religiosity									0.60		0.94	
School Percent Conservative									1.01		1.03	*

Protestant Catholic school ^a									1.75			
Private Protestant school									0.67			
Interaction between school religiosity and % Conservative Protestant										0.97	+	
Additional school- level controls^b												
Percent of students living with two parents										0.03	*	
Variance components	0.58	***	0.50	***	0.44	***	0.45	***	0.65	***	0.14	*

***<.001, **<.01, *<.05, +<.10

^aThere were no significant differences between individuals in Catholic versus private Protestant schools.

^bThe following school-level controls were also examined, but they did not significantly improve model fit nor were they significant when examined alone, and thus they were removed: percent Black, school location (e.g. urban), school mean of parents' education, and school size.

Table 2.6
Individual and Friends' Religiosity for First Sex by Gender
Using the Saturated Sample
 Exponentiated Odds

	Model 1		Model 2	
	Males only		Females only	
	(N=1,327)		(N=1,271)	
Intercept	-9.81	***	-6.33	***
Demographic Controls				
Age in Months	1.04	***	1.03	***
Hispanic	1.36		2.11	*
Black	5.33	***	2.67	***
Asian	1.20		1.64	+
Other Race	2.30	+	0.97	
Additional Controls				
Parental Approval of Sex	1.41	***	1.66	***
Parent Educational Attainment	0.88	***	1.05	
Two-Parent Family	0.86		0.70	*
Parental Closeness	1.01		0.68	***
Romantic Relation	4.48	***	5.98	***
Grades	0.70	***	0.65	***
Out Nominations	1.21	***	1.13	***
Denomination				
Catholic	0.90		1.02	
Conservative Protestantism	1.42		1.30	
Other Protestant Religion	0.67		1.27	
Other Religion	0.52	+	1.73	
No religion	0.64		1.06	
Key Independent Variables				
<i>Individual religion variable</i>				
Individual religiosity	0.71	***	0.70	***
<i>Friends' religiosity</i>				
Friends' religiosity	0.84	+	0.79	*
Variance components	0.41	*	0.43	***

***<.001, **<.01, *<.05, +<.10

Table 2.7
Hierarchical Linear Models of Religion on Virginity Loss
Using the In-home Sample
 Individual N= 18,510, School N=133
 Exponentiated Odds

	Model 1		Model 2		Model 3		Model 4	
Intercept	-7.86	***	-7.91	***	-8.32	***	-7.78	***
Demographic Controls								
Age in Months	1.04	***	1.04	***	1.04	***	1.04	***
Hispanic	1.21	*	1.26	***	1.27	***	1.22	*
Black	2.34	***	2.53	***	2.41	***	2.29	***
Asian	0.79	**	0.85	+	0.87		0.85	+
Other Race	1.21	+	1.27	*	1.28	*	1.25	*
Female	0.92	*	0.94		0.94		0.94	
Additional Controls								
Mother's Approval of Sex	1.79	***	1.72	***	1.72	***	1.72	***
Parent Educational Attainment	1.00		1.00		1.00		1.00	
Two-Parent Family	0.68	***	0.70	***	0.70	***	0.70	***
Parental Closeness	0.74	***	0.76	***	0.76	***	0.76	***
Romantic Relation	5.16	***	5.21	***	5.21	***	5.26	***
Grades	0.61	***	0.63	***	0.63	***	0.63	***
Denominational Affiliation								
Catholic	0.98		0.93		0.93		0.93	
Conservative Protestantism	1.20	***	1.26	***	1.19	***	1.20	***
Other Protestant Religion	0.80	*	0.84	*	0.84	*	0.84	+
Other Religion	0.92		0.77	**	0.76	***	0.76	**
No religion	1.40	***	0.78	***	0.76	***	0.76	***
Key Independent Variables								
<i>Individual religion variable</i>								
Individual religiosity			0.68	***	0.67	***	0.67	***
<i>School religion variables</i>								
School religiosity					0.70	*	1.19	
School percent conservative Protestant					1.01	***	1.01	***
Interaction between school religiosity and % Conservative Protestant Catholic school ^a							0.99	***
Private Protestant school					1.14		1.09	
Private nonreligiously affiliated school					0.53	**	0.70	+
					0.35	***	0.44	***

Additional School-level controls^b

Percent of students in two parent homes

0.46 **

Variance	0.15 ***	0.16 ***	0.07 ***	0.06 ***
----------	----------	----------	----------	----------

***<.001, **<.01, *<.05, +<.10

^aIn contrast to Catholic school students, adolescents in private and protestant schools were less likely to have had first sex. Adolescents in private nonreligiously affiliated schools were not significantly different than students in private protestant schools.

^bThe following school-level controls were also examined, but they did not significantly improve model fit nor were they significantly when examined alone, and thus they were removed: percent Black, school location (e.g. urban), school mean of parents' education, and school size. Additionally, South was also included, but was not significant.

Table 2.8
Hierarchical Linear Models of Religion on Delinquency
Using the Saturated sample
 Individual N=2,633, School N=15
 Exponentiated Odds

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6 ^b	
Intercept	4.56	***	4.56	***	4.57	***	4.59	***	4.47	***	4.44	***
Demographic Controls												
Age in Months	0.99	***	0.99	***	0.99	***	0.99	***	0.99	***	0.99	***
Hispanic	1.26	***	1.26	***	1.27	**	1.28	**	1.27	**	1.25	*
Black	1.13		1.14		1.14		1.15		1.16		1.13	
Asian	1.16	+	1.19	+	1.20	+	1.22	*	1.22	*	1.21	*
Other Race	1.16		1.15		1.16		1.15		1.14		1.13	
Female	0.51	***	0.51	***	0.51	***	0.51	***	0.52	***	0.52	***
Additional Controls												
Parent Educational Attainment	0.99		0.99		0.99		0.99		0.99		0.98	
Two-Parent Family	0.96		0.97		0.97		0.97		0.98		0.98	
Parental Closeness	0.75	***	0.74	***	0.75	***	0.76	***	0.76	***	0.76	***
Romantic Relation	1.38	***	1.38	***	1.38	***	1.38	***	1.38	***	1.38	***
Grades	0.73	***	0.73	***	0.74	***	0.73	***	0.73	***	0.73	***
Out Nominations	1.11	***	1.12	***	1.12	***	1.12	***	1.12	***	1.12	***
Denomination												
Catholic	1.00		0.98		0.98		0.98		0.97		0.96	
Conservative Protestantism	0.87	*	0.88	+	0.88	+	0.88	+	0.90	+	0.88	+
Other Protestant Religion	0.87		0.88		0.88		0.88		0.88		0.87	
Other Religion	0.85		0.82		0.82		0.84		0.84		0.84	
No religion	0.90		0.79	*	0.79	*	0.84	+	0.83	+	0.83	+
Key Independent Variables												
Individual religiosity			0.91	*	0.92	*	0.91	*	0.91	**	0.91	**
Friends' religiosity					0.97		0.95		0.96		0.95	
Interaction between individual and friends' religiosity							0.90	**	0.90	**	0.90	**
School religiosity									0.87			

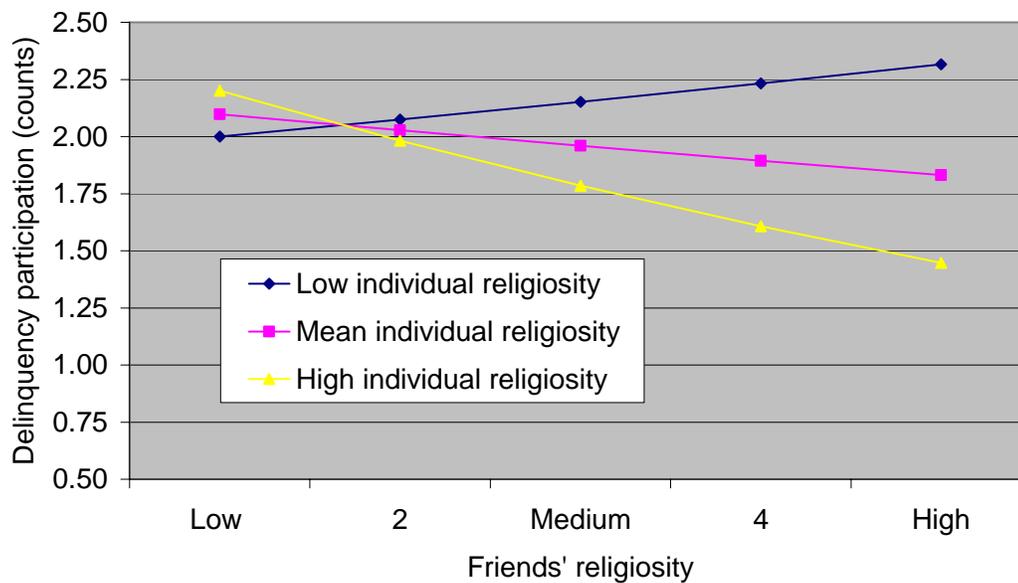
School Percent Conservative Protestant school									
Catholic school ^a								1.68 *	1.57 *
Private Protestant school								1.02	0.91
Variance Component Level 1			2.18		2.18		2.18	2.17	2.17
Variance Component Level 2	2.18 ***		0.02 ***		0.02 ***		0.02 **	0.11 *	0.01 *

***<.001, **<.01, *<.05, +<.10

^aIn contrast to Catholic school students, teens in private protestant schools have lower rates of delinquency.

^bThe following school-level controls were also examined, but they did not significantly improve model fit nor were they significant when examined alone, and thus they were removed: percent Black, school location (e.g. urban), percent of students in two parent families, school mean of parents' education, and school size.

Graph 1
Interaction between individual and friends' religiosity



Counts are shown for a 16 year-old White boy who has been assigned either the mean or reference category for all other variables.

Table 2.9
Hierarchical Linear Models of Religion on Delinquency
Using the In-Home Sample
 Individual N= 18,801, School N=132, State N=33
 Exponentiated Odds

	Model 1	Model 2	Model 3	Model 4
Intercept	4.08 ***	4.07 ***	4.11 ***	4.20 ***
Demographic Controls				
Age in Months	0.99 ***	0.99 ***	0.99 ***	0.99 ***
Hispanic	1.20 ***	1.21 ***	1.21 ***	1.20 ***
Black	1.07 **	1.09 ***	1.11 ***	1.07 **
Asian	1.07 +	1.09 *	1.08 *	1.08 *
Other Race	1.20 ***	1.20 ***	1.20 ***	1.20 ***
Female	0.58 ***	0.58 ***	0.58 ***	0.58 ***
Additional Controls				
Parent Educational Attainment	1.00	1.00	1.00	1.00
Two-Parent Family	0.85 ***	0.86 ***	0.86 ***	0.86 ***
Parental Closeness	0.75 ***	0.75 ***	0.75 ***	0.75 ***
Romantic Relation	1.45 ***	1.45 ***	1.45 ***	1.45 ***
Grades	0.73 ***	0.73 ***	0.73 ***	0.73 ***
Denomination				
Catholic	0.99	0.98	0.97	0.97
Conservative Protestantism	0.90 ***	0.91 ***	0.92 ***	0.91 ***
Other Protestant Religion	0.91 *	0.92 +	0.92 +	0.92 +
Other Religion	0.94	0.90 **	0.90 *	0.90 **
No religion	1.04	0.90 **	0.90 **	0.90 **
Key Independent Variables				
<i>Individual religion variable</i>				
Individual religiosity		0.90 ***	0.90 ***	0.90 ***
<i>School religion variables</i>				
School religiosity			0.98	
School Percent Conservative Protestant school				
Catholic school ^a			1.22 **	1.26 ***
Private Protestant school			1.05	1.04
Private nonreligiously affiliated schools			0.85	0.91
<i>State religion variable</i>				
State Percent of Evangelicals			1.00	
School-level control variable				
School percent of two-parent families				0.81 +
Variance component 1	2.1908	2.186	2.186	2.18518
Variance component 2	0.00891 ***	0.00924 ***	0.00868 ***	0.00777 ***
Variance component 3	0.00786 ***	0.00652 ***	0.00302 **	0.00574 ***

***<.001, **<.01, *<.05, +<.10

^aIn contrast to Catholic school students, individuals in Private nonreligiously affiliated schools (p=0.013) and private Protestant schools (p=0.092) have lower delinquency rates. There were no significant differences between private Protestant and unreligiously affiliated schools.

^bThe following school-level controls were also examined, but they did not significantly improve model fit nor were they significant when examined alone, and thus they were removed: percent Black, school location (e.g. urban), school mean of parents' education, and school size. Additionally, South was also included, but was not significant. I also examined the following state-level variables that were not significant: Percent of families below poverty, percent of females in the labor force, percent with a BA degree, percent white, state median income.

***<.001, **<.01, *<.05, +<.10

CHAPTER 3- UNRAVELING RELIGIOUS PEER ASSOCIATIONS

In the previous chapter I examined the influence of multiple religious contexts on teens' high risk behaviors. One context that was important for both delinquency and first sex was friends' religiosity. Although I found a relation between friends' religiosity and first sex, the process through which they are related was not clear. Like their friends, adolescents elect to spend time with their romantic partners. Because they choose their friends and partners, teens are more likely to listen to their opinions and feel attached to them, than people in less approximate contexts (e.g. schools, states), suggesting that the friendship/partner context may be the best one to begin examining the process through which religious contexts have an influence. In this chapter I look at whether religious friends influence first sex through socialization or social control and if they increase attitude-behavior consistency. I also look at whether romantic partners vs. friends have a greater religious influence on first sex. This analysis gives a template and comparison for future work on the process through which religious contexts influence behaviors.

Adolescents live within sets of interconnected social systems and structures that shape their life experiences (Bronfenbrenner, 1986). First sex is one highly relevant event that characterizes adolescents' transition to adulthood. By the time they are 19, the majority of adolescents will have sex and many will have it sooner (Alan Guttmacher Institute, 1998). With this developmental milestone come several risks, including pregnancy and disease. The potential consequences of teen sex have prompted interest in understanding which social and cultural factors influence first sex.

A number of researchers (Billy, Rodgers, and Udry, 1984; DiBlasio and Benda, 1990; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994) have found a relation between teen sex and their peers' sexual attitudes and behaviors. To explain this link, sociologists have suggested that peers may have a socializing influence, resulting in teens adopting their peers' attitudes. Alternatively, teens may comply with their peers' attitudes, even if they disagree. Social psychologists have further suggested that peer social support can increase attitude-behavior consistency. Few researchers, however, have looked at how these associations may be informed by friends' religiosity, whether religious friends increase attitude-behavior consistency, or how religious influences may vary by type of peer (e.g. friend, romantic partner, schoolmate, etc.).

Unlike other elements of culture, religion is grounded in systematic teachings, and traditions, which can help predict people's attitudes and behaviors (Finke and Adamczyk, 2005). Within the U.S. context, adolescents' adherence to Christianity explains, in part, why many teens delay first sex (Sheeran et al., 1993; Meier, 2003; Rostosky, Regnerus and Wright, 2003; Lefkowitz et al., 2004). However, we know little about how adolescents' behaviors are

associated with the religious practices and beliefs of the people with whom they choose to interact.

More so than anyone else, adolescents elect to spend time with their friends and romantic partners. These people have their own religious beliefs and practices, which can influence sexual attitudes and behaviors. To fully understand the religion and first sex relation, we need to examine not only personal religiosity, but also the religiosity of people who teens value and with whom they choose to spend their time.

In this chapter I use network data to investigate the association between first sex, and religious friends and romantic partners. In cross-sectional analyses, I find that friends' religiosity is related to first sex through social learning processes, but not through social control mechanisms. I then examine whether friends' religiosity is associated with an increase in attitude-behavior consistency, finding that this relation does not substantially increase our understanding of the first sex-friends' religiosity link. Finally, I look at the association between romantic partners' religiosity and first sex. In contrast to friends, partners' religiosity is not significantly related to first sex.

Religion and Sexual Behaviors

A plethora of research has found that teens who are involved in the church and value religion are more likely than more secular youth to delay having sex (Rohrbaugh and Jessor 1975; Studer and Thornton 1987; Thornton and Camburn 1989; Cochran and Beeghley 1991; Zaleski and Schiaffino 2000; Holder *et al.* 2000; Meier 2003). In this literature, religiosity is defined and measured broadly because it is assumed that most religions have proscriptions on premarital sex. In part, generic religiosity is related to the timing of first sex because people who pray and actively attend church tend to have more conservative religious beliefs – net of denominational

identity.¹³ Religious people may also be more likely to behave in ways that are consistent with their doctrinal beliefs.

Generic religiosity includes two similar, yet distinct dimensions –private and public religiosity. Because the two dimensions are associated with different motivations and social control mechanisms, it is useful to examine them separately. While public religiosity includes church attendance and youth group activities, private religiosity includes prayer frequency and subjective religious importance.

When adolescents actively participate in church, they are more likely to receive frequent religious messages concerning premarital sex, and their religious involvement may signal their acceptance of the religious institution's teachings. Even adolescents who only attend church at their parents' behest may absorb some of the moral teachings of the church. While teens' public expressions of religiosity may sometimes be involuntary, parents cannot easily control their children's feelings about religion or how often they pray outside of church. Whereas public religiosity may be associated with a higher degree of adult supervision, private religiosity is more likely related to internal inhibitions on proscribed behaviors like premarital sex.

¹³ A question arises about interactions between religiosity and denomination. For example, one might expect that among Unitarians, for whom premarital sex is a less important religious issue, church attendance and prayer would have little effect on first sex. But because liberal churches are relatively small, and generally consist of few people who would score highly on religiosity using conventional measures (e.g. frequency of church attendance and prayer), survey sample size would have to be quite large to detect such an interaction between denomination and religiosity. For the purposes of analyses using available data, I assume that generic religiosity has the same influence on first sex regardless of denomination.

Process of Friends' Religiosity

The literature on the influence of friends is quite large and several studies have found a relation between individuals and their friends' sexual attitudes and behaviors (Billy, Rodgers, and Udry 1984; Billy and Udry, 1985; DiBlasio and Benda, 1990; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994; Maxwell 2002; Adamczyk and Felson, 2005). Researchers usually posit that friends influence individuals' sexual behaviors and attitudes through processes of social control or socialization. Below I explain how friends' religiosity may be associated with first sex through these processes.

As teens spend time with their friends, they are likely to adopt their attitudes through social learning processes (Akers *et al.*, 1979; Akers, 1985, 1998). In the previous chapter I showed that friends' religiosity is not substantially associated with first sex through personal religiosity. Whereas religious friends may not socialize teens to be more religious and then delay sex, they could, nevertheless, influence their attitudes about sex, even if personal religiosity is not affected. Social psychological research refers to this type of influence as identification, which occurs when people adopt the induced attitude or behavior, even if they find the specific content irrelevant (Kelman, 1958). Religious friends may make salient why teens should delay sex by teaching them about the rewards and costs and showing them how to justify virginity. Although their friends' religious motivations may not resonate, teens could adopt sex attitudes that are consistent with their friends' pro-religion perspective.

In addition to social learning, religious friends may be associated with first sex through social control mechanisms where adolescents follow friendship group norms because they value their friends and want them to react favorably. As Kelman (1958) explains, people may comply with an induced behavior not because they believe in its content, but rather expect to gain

specific rewards or approval and avoid certain punishments or disapproval. With his original social control theory Hirschi (1969) explained that compliance largely depends on attachment strength. When individuals value their friendships, they will try to maintain reputations that are consistent with their friends' attitudes and behaviors because they do not want to jeopardize them. Because of potential negative group sanctions and a desire to receive approval, teens embedded in religious groups should be less likely than their counterparts with more secular friends to deviate from proreligion group norms.

Although researchers have found support for both processes, evidence for social learning is stronger than social control. In their study on sexually active peer association, DiBlasio and Benda (1994) found that social control elements were relevant to peer associations, but the nature of those associations was unclear. When they examined a factor of three types of sexual behaviors Benda and DiBlasio (1994) found that differential association with peers accounted for most of the variance, even though some social control influences were significant. Again, when they looked at adolescent sexual frequency, DiBlasio and Benda (1990) found that peer differential-association was the best predictor.

Based on these previous studies, the religious friends- first sex association is more likely mediated by attitudes and feelings about sex, such as guilt and embarrassment, which would indicate social learning processes. Conversely, the threat of losing friends' respect by having sex, which is a social control process, should have less of a mediating influence on the religious friends and first sex relation. Below I address which specific attitudes and feelings about sex (e.g. guilt, embarrassment, future plans, etc.) with which friends' religiosity is most likely associated.

Religion and Attitudes about Sex

Whereas religious values provide a perspective on a number of behaviors, attitudes about sex make proscriptions with reference specifically to sex, making an association more likely. In their longitudinal studies of first sex, Meier (2003) and Rostosky, Regnerus, and Wright (2003) specifically tested the relation between individual religiosity and sex, finding that it was mediated by sex attitudes. Below I review research on first sex, attitudes and individual religiosity to isolate the attitudes most likely associated with friends' religiosity.

In studies on the relation between first sex and attitudes, researchers typically find that perceived costs of having sex have a stronger relation with first sex than the benefits (e.g. physical pleasure; keeping a partner).¹⁴ Small, Silverberg, and Kerns (1993) and Blinn-Pike (1999), for example, found that concerns about disease and pregnancy were the most frequently given reasons for not having sex. Likewise, several researchers (Rindfuss, Bumpass, and St. John, 1980; Scott-Jones and White 1990; Benda and DiBlasio, 1991; Ramirez-Valles et al., 1998; Schvaneveldt, et al., 2001) have found that academic aspirations are negatively associated with the timing of sex and risky sexual behaviors. The idea here is that if teens are invested in plans for college, they will be less likely to risk a pregnancy, which could jeopardize their future plans (Schvaneveldt *et al.* 2001).

Many of these perceived costs (e.g. pregnancy, disease) are also related to personal religiosity, suggesting that they may also be influenced by friends' religiosity. In their longitudinal research on the role of religiosity and sex attitudes using Add Health data, Rostosky, Regnerus, and Wright (2003) found that religiosity indirectly influenced first sex through a

¹⁴ Because the benefits and costs of sex were combined in Meier's research it is not clear which had a greater influence. Blinn-Pike (1999) looked specifically at attitudes about the costs and benefits of sex and found that it is indeed the costs that have a greater influence.

sexual ideology based on anticipated negative consequences (e.g. guilt, loss of partner's respect) of having sex. Consistent with this research Rohrbaugh and Jessor (1975) hypothesized that religion embeds individuals in an "organizing sanctioning network." This network sensitizes individuals and reinforces conservative behavior through the creation of an "obedience orientation" to religious authority (p. 317). Several other studies have given support to this idea that religion influences sexual behaviors through this process (Thornton and Camburn, 1989; Sheeran et al., 1993; Lefkowitz, 2004).

Religious friends would likely have a stronger association with attitudes that could be specifically addressed by religion because they would have a higher level of correspondence with them. Thus, Biblical precepts would be more likely to inform feelings of guilt and embarrassment, and have less of an association future career plans.

Attitude-Behavior Consistency

Whereas friends' religiosity may relate to first sex through social control or socialization, they may also increase consistency between individuals' sex attitudes and behavior. Social psychological research has found evidence that social support can influence attitude-behavior consistency (Liska, 1974). If social support and attitudes are congruent, then the relation between attitudes and behavior is accentuated. But, if they are incongruent, the relation is depressed.

Sociologists have found that religious social support can increase consistency between individual religiosity and behaviors, which is referred to as the moral communities hypothesis (Stark 1984, 1996; Stark and Bainbridge 1996; Kelley and De Graaf, 1997; Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Finke and Adamczyk, 2005). As Stark (1996) explains, "when the majority of a teenager's friends are religious, then religion enters freely into everyday

interactions and becomes a valid part of the normative system” (164). Although much attention has been given to the personal religiosity-behavior relation, few researchers have examined whether religious social support increases consistency between behaviors and attitudes that are not religion specific.

In the previous chapter, I did not find that friends’ religiosity strengthened the link between personal religiosity and first sex. Nevertheless, through a similar process religious social support could increase consistency between attitudes about sex and first sex. In her research on communication with best friends about sex-related topics, Lefkowitz et al. (2004) found that teens’ virginity status was related to the frequency and type of conversations they had with their best friends about sex. In the context of conversations with friends, teens become aware of their attitudes and sex behaviors. In much the same way that religious values may enter conversations between religious people, sex standards become solidified in discussions about sex. Friends’ religiosity may not influence individual religiosity. However, if teens think they will feel guilt, embarrassment, or may risk their futures by having sex, religious friends’ support should increase consistency between these attitudes and first sex.

Romantic Partners verses Friends

In addition to friends, there are some reasons to think that the religiosity of romantic partners might also be associated with first sex, particularly because first sex occurs outside the purview of friends, and often with a romantic partner (Harris and Associates, 1986). To some extent romantic relations can be seen as growing out of friendships. Sullivan (1953) and Furman and Wehner (1994) suggest that the sense of intimacy experienced with a close same-sex friend serves as a model for intimacy with a romantic partner, which suggests that friends and romantic partners can exert similar influences. Furman and Wehner (1994) explain that romantic partners

can be major figures in the function of attachment and affiliation. Because romantic relations provide some of the same functions as friendships, they may be jeopardized in the same way through norm violations.

Unlike, friendships, however, adolescents' romantic relations are generally not very comfortable, settled, or of long duration (Giordano, 2003). Youniss and Smollar (1985) point out that a defining quality of friendship is "symmetrical reciprocity." But, because they tend to be unstable, short, and emotionally intense, youths' romantic relations have a greater potential for a mismatch of interests. This could limit the construction of shared interpersonal norms, rules, and world views, which characterize close relations (e.g. Morton and Douglas 1981). Carver and Udry's (1997) work on romantic partners makes clear the potentially unstable and unreciprocated nature of these relations. In their research on reciprocity in choosing a romantic partner (X nominates Y and Y nominates X) they found that in 38% of the cases adolescents were not even reciprocating the same nomination.

In contrast to adult romantic relations, adolescents' relations tend to be more superficial, which can also limit a partner's influence. In teens' romantic relations, according to Merton (1996), intimacy is inhibited because of adolescents' desire to put on a good "front." He concludes that going steady is a limited and limiting adolescent social ritual. Furman and Wehner (1994) similarly explain that in their early relations teens are not very concerned with sexual, attachment or care giving needs. Rather, they are focused on who they are, their level of attraction, how they should interact, and how it all looks to their peer group (for a similar account see Brown 1999).

Although romantic relations may be modeled on friendships, teens may not have had enough time to develop them so that their partners' religiosity has a salient influence. In addition,

many religious teens' parents may restrict dating, and disrupt romantic relations if they occur, particularly with a disapproved partner. Being in a romantic relation is one of the biggest predictors of first sex (Whitbeck et al., 1999; Rostosky et al., 2003; Adamczyk and Felson, 2005). As a result, more religious adolescents may not enter romantic relations. For all of these reasons, I expect that fist sex would have a stronger association with friends' religiosity, than the religiosity of romantic partners.

Additional Influences

In addition to attitudes about sex, religion, and friends, researchers have found several other factors related to first sex. One of the most important seems to be gender. There is much research (Billy, Rodgers and Udry 1984; Eder and Enke 1991; Whitbeck *et al.* 1999) suggesting that boys are more likely to report having sex than girls. They also report more positive feelings about initial intercourse (Guggino and Ponzetti 1997), experience less guilt and have more sexual satisfaction (Darling *et al.* 1992). They are also more likely to view the event as an achievement and rite of passage (Rubin 1990). Finally, female and male adolescents seem to differ in the extent to which their friends have had sex. In their study of adolescent sexual behavior and friendship choice, Billy, Rodgers, and Udry (1984) found that females, in contrast to males, tended to name friends whose sexual behavior was like their own. The researchers suggest that sex for females represents more of a departure from sex-appropriate norms and thus they either seek out or are influenced by supportive female friends.

The family context in which adolescents are embedded can also have an important effect on the timing of first sex. Because they receive more supervision, teens from two-parent families are more likely to delay first sex than teens in different family configurations (Lammers *et al.* 1999). Adolescents who view their parents as approving of their sexual behavior are more

likely to engage in sexual intercourse than are teens who perceive them as disapproving (Jessor and Jessor 1977; Thomson 1982; Treboux and Busch-Rossnagel 1990; DiBlasio and Benda 1994). Likewise, when adolescents have a close and warm relation with their parents, they are more likely to delay first sex, as precocious sex could threaten the relation (Benda and DiBlasio 1994).

Academic achievement, socioeconomic status (SES), and race are also associated with first sex. As mentioned above, teens who have lower expectations of upward mobility may see lower opportunity costs for pregnancy (Schvaneveldt *et al.* 2001). In contrast to Whites, African Americans tend to have first sex earlier. Parents from higher SES homes may also limit their children's sexual activities by emphasizing academics and more closely monitoring teens' activities. Finally, romantic partnerships typically hasten the transition to first intercourse.

Data and Measurement

To examine whether romantic partners are associated with first sex, whether friends' religiosity is associated with an increase in attitude-behavior consistency, and the process through which religious friends are associated with virginity loss, I use the National Longitudinal Study of Adolescent Health (Add Health), designed by the Carolina Population Center.¹⁵ Add Health is a three-wave school-based study on adolescents' (grades 7 to 12) health-related behaviors. Investigators sampled 80 schools from a complete database of all US high schools. High schools were selected using implicit stratification based on demographic characteristics such as ethnicity, size, and degree of urbanicity. Investigators also recruited primary schools linked to selected high schools, for a total of 132 schools.

¹⁵ For more information about the study, see the Add Health website at:

<http://www.cpc.unc.edu/projects/addhealth/design>.

Six months after in-school interviews, Add Health investigators randomly selected a subgroup of the original in-school sample for more extensive in-home interviews. My analysis relies on Wave 1 in-home interviews, which took place in 1994 and 1995. In the next chapter I will draw on the longitudinal component of Add Health to establish the ordering of friends' religiosity and first sex. In the current chapter I use a subset of the in-home sample known as the saturated sample, in which attempts were made to administer in-home questionnaires to all students on the school roster. The saturated sample is not a national probability sample of US high school students. However, it is the only available dataset that allows friends and partners' religiosity to be directly measured.

Add Health investigators included a diverse array of schools in the sample to reflect the range of adolescent experiences in the nation. The sample includes fourteen small schools (<300 students each) and two larger schools with enrollments of about 1,000 and 2,100 each. Of the two large schools comprising the majority of my sample, one is an ethnically diverse urban school in the western region, and the other is a mostly white suburban school in the Midwest. The saturated sample over-represents minorities and students from small schools. I eliminated one small special education school from the saturated sample. I also excluded people who did not nominate anyone else in their school. Finally, I deleted seven married respondents, because I was interested in premarital sex only.

For examining the association between religious friends and first sex my analytical sample was 2,143, after listwise deletion. Because only adolescents who had romantic partners' information and at least one friend could be included in my friends and partner analysis, the sample size dropped to 674, after listwise deletion.

Below I describe the measures used to assess the relation between religious friends and first sex. Table 1 provides information about how concepts are defined and corresponding measures calculated, and Table 2 presents descriptive statistics.

DEPENDENT MEASURE

The dependent measure is a dichotomous variable indicating whether or not the respondent has ever had sexual intercourse. Despite the question's sensitivity, social desirability bias is less of an issue because questions about sexual intercourse were asked via audio computer-assisted interview (audio CASI).

KEY INDEPENDENT VARIABLES

Individual private and public religiosity: Private religiosity consists of two questions that ask about prayer and subjective religious importance. One item, frequency of prayer, had five categories, while the other measure had only four. I standardized (subtract the mean and divide by their standard deviation) both measures before adding them together and dividing in half. The items generated an alpha of 0.85. Public religiosity consisted of two questions that asked about religious service attendance, and youth group participation. Each question had four response categories, which were standardized before obtaining a mean. Together the questions had an alpha of 0.72.

Friends' private and public religiosity: Using information based on friendship nominations collected by Add Health interviewers, I calculate friends' public and private religiosity. Respondents were asked to identify up to five male and five female friends. The majority of respondents did not nominate the maximum number of people and many nominated people

outside of their school. The average respondent nominated a total of 5.2 people. When unidentifiable friends are eliminated the average number of nominations drops to 3.2.

Although respondents could nominate people from inside or outside of their school, Add Health only contains information on school friends. Because friends outside of the school could provide an additional opportunity for sex, I controlled for the number of out-of school nominations. Respondents' information is linked to the survey responses of friends within the same school. The same survey questions were completed by both respondents and their nominated friends.

Friends include any students who the respondent nominated as friends. Adolescents who did not nominate any identifiable people were deleted from the sample, as friends' scores could not be calculated for them. Friends' private and public religiosity is calculated from the same religion questions as individual religiosity. The friends' private religiosity questions generate an alpha of 0.88. The friends' public religiosity measures produced an alpha of 0.76.

Romantic partners' private and public religiosity: In addition to friends, adolescents were asked to nominate past romantic partners. Specifically, the interviewer asked, "In the last 18 months have you had a special romantic relation with anyone?" Respondents could nominate up to three people. If the romantic nomination was included in the saturated sample, attended the same school, and completed the interview, Add Health linked the romantic nominations' information to that of the respondent. A small proportion (N=674) of respondents in the sample had relations with people Add Health could identify and on whom they collected religion information. Romantic partners' private and public religiosity is calculated in the same way as friends' religiosity, using measures from the girlfriends or boyfriends. The romantic partners'

private religiosity questions generate an alpha of 0.86, and the romantic partners' public religiosity measure generated an alpha of 0.74.

Mediators and Moderators¹⁶

To assess the extent to which friends' religiosity is related to first sex through a social control mechanism (e.g. fear of jeopardizing attachments to valued friends), I look at mediating social control variable. The variable is derived from a question which asks respondents the extent to which they think their friends would respect them more if they had sex. I reverse coded this question so that an increase means a loss of respect.

For examining the extent to which friends' religiosity is associated with first sex through social learning processes, I look at the mediating influence of guilt and embarrassment for first sex. The guilt variable assesses the extent to which after having sex, the respondent would feel guilty. The embarrassment variable measures the extent to which the respondent feels that getting pregnant or getting someone else pregnant would be embarrassing. The embarrassment question does not specify who the adolescent would embarrass, if he or she got pregnant or got someone else pregnant. Some could interpret this as embarrassing friends, suggesting a social control influence. To ascertain that embarrassment is measuring an aspect of social learning, rather than social control, I assess validity by examining the relative strength of the correlations

¹⁶ Ideally, I would have used data from two time points to show that friends' religiosity and the mediators at T1 are related to first sex at T2 for adolescents who were virgins at T1. In the next chapter you will see that friends' religiosity for virgins at T1 precedes first sex at T2. Unfortunately, a large proportion of cases were missing data on the mediators. Apparently, Add Health did not ask adolescents under a certain age questions about their sex attitudes. In addition, only an average of one year passed between the two data collections. Although I could assess the influence of friends' religiosity between the two waves for virgins at T1, friends' religiosity was no longer significant in the longitudinal analysis when I deleted respondents missing information on the mediators.

between embarrassment and friends' respect vs. guilt and friends' respect (Bollen, 1989). While the correlation between embarrassment and loss of friends' respect is 0.088, for embarrassment and guilt it is 0.325, suggesting that embarrassment has a closer correspondence with social learning mechanisms.

To see whether friends' religiosity is related to costs that religion does not specifically address, I examine the mediating factor of future goals on first sex. This variable assesses the extent to which respondents think that they would have to quit school, if they got someone pregnant or they got pregnant.

CONTROL VARIABLES

In addition to the key independent variables and mediators/moderators, I also controlled for several demographic characteristics and other variables that could be related to the main variables of interest. Academic achievement was measured as an average of self-reported grades from four academic subjects and race with five racial/ethnic categories. Because African Americans tend to have higher levels of religiosity, but also initiate first sex at an earlier age, I test for interactions between Black and personal religiosity. Males tend to report more sexual activity than females, and, therefore, I controlled for gender. Females are not only less likely to report sexual activity, they also tend to be more religious. I, therefore, looked for interactions between gender and personal religiosity. Although I control for parental education, I could not account for income because too much data (roughly one-third of the cases) were missing on the available measures. The absence of an income measure should not, however, be a major drawback. Similar research (Meier 2003) using Add Health data found that (logged) income was not significantly related to first sex. I also included a variable for dating status and three family context controls— closeness to parents, parental approval of premarital sex, and whether

adolescents are living in two-parent families. Finally, I controlled for respondents' denominational identity with dummy variables representing six religious groupings: Catholicism, Conservative Protestants, mainline Protestants, other Protestants, other religions, and no religion.¹⁷

METHODS AND PLAN OF ANALYSIS

Whereas social learning mechanisms are measured with guilt, embarrassment, and quitting school, social control is assessed with loss of friends' respect. Religious precepts are less relevant to quitting school, than guilt or embarrassment. Thus, I expect that quitting school will have less of a mediating influence on the relation between friends' religiosity and first sex, than guilt or embarrassment. As mentioned above, researchers have found more support for social learning influences, than social control. I, therefore, think that guilt and embarrassment will have a greater mediating influence than loss of friends' respect. Research on attitude-behavior consistency suggests that friends' religiosity should moderate or increase consistency between reasons for not having sex (e.g. guilt, embarrassment, and loss of friends' respect) and first sex.

¹⁷ Denominations coded conservative Protestant include: Adventist, African Methodist Episcopal, Assemblies of God, Baptist, National Baptist, Holiness, and Pentecostal. Mainline Protestants include: Disciples of Christ, Congregationalist, Episcopalian, Lutheran, Methodist, Presbyterian, United Church of Christ, and Quaker. Other Protestants were Protestants whose denomination was not ascertained. Other religions included: Christian Science, Jehovah's Witness, Mormon, Baha'i, Buddhist, Eastern Orthodox, Hindu, Muslim, Jew, Unitarian, and respondents with an unspecified other religion. Because sample size was small, disaggregating other religions was not practical. I followed Steensland *et al.*'s (2000) advice in choosing to classify Jehovah's Witness, Unitarian, and Christian Scientist as non-Protestant. Unfortunately, I could not make fine-grained distinctions about denomination among Add Health respondents because the in-home interviews did not include detailed denominational affiliations until wave 3.

Finally, in contrast to romantic partners' religiosity, I expect friends' religiosity to have a greater association with first sex.

Because the outcome variable (first sex) is dichotomous, I use logistic regression techniques. I begin by first developing a baseline model that includes all of the control variables and individuals' public and private religiosity. To see which religion measure has a stronger effect, I assess friends' private and public religiosity separately. Next, I add guilt, embarrassment, friends' respect, and quit school to the models to see whether they attenuate the relation between friends' religiosity and first sex. I then test for a series of interactions between the mediating variables and friends' religiosity. Finally, to see whether friends' religiosity has a stronger relation with first sex than romantic partners' religiosity, I examine the association for respondents who have friend and partner data.

Because Add Health respondents were chosen from select schools, there is an unequal probability of selection. As a result, sample observations are not independent within schools. I, therefore, use Stata (version 7.00) to adjust the standard errors using survey sampling design.

FRIENDS' RELIGIOSITY AND MEDIATING FACTORS

Model 1 in Table 3 presents a baseline model showing that sexual intercourse is less likely among adolescents who feel close to their parents, live in two-parent families, and report good grades. By contrast, sex is more common among adolescents who are African American, have dated in the last 18 months, are older, have more friends outside their school, and have parents who approve of premarital sex. In contrast to mainline Protestants, Catholics are less likely to have had sex. Consistent with much previous research (Rohrbaugh and Jessor 1975; Studer and Thornton 1987; Thornton and Camburn 1989; Cochran and Beeghley 1991; Zaleski

and Schiaffino 2000; Holder *et al.* 2000; Meier 2003) individual religiosity is related to first sex. As private and public religiosity increase, teens are less likely to have had first sex.

In the second model I include measures of both friends' private and public religiosity. In contrast to measures of individual religiosity, only friends' private religiosity is associated with first sex. With the inclusion of friends' religiosity, individual religiosity decreases slightly, suggesting that some of the deterring impact of individual religiosity may work through friends' religiosity, as religious adolescents are more likely to have religious friends. In Model 3 I remove friends' public religiosity because it is not significantly related to first sex, nor does it significantly increase the overall fit of the model. This model also gives the baseline for assessing the mediating influence of guilt, embarrassment, friends' respect, and quitting school on the relation between friends' private religiosity and first sex.

Before assessing the mediating variables, it is useful to gauge the relative strength of individuals' religiosity and friends' private religiosity. By multiplying logged coefficients by their standard deviations, I can compare the size of respondent and friends' religiosity (Pampel 2000:33). Applying this rule to model 3 in Table 3 I find that friends' private religiosity ($-0.21 = -0.22 * 0.94$) is similar in magnitude to individual private religiosity ($-0.24 = -0.25 * 0.94$) and greater than public religiosity ($-0.14 = -0.16 * .88$). By the same computation, friends' religiosity appears to have a stronger association than living in a two-parent family, or being close to one's parents. However, friends' religiosity is weaker than academic performance or dating status. In the next chapter I will boost confidence in the relation between first sex and friends' private religiosity by testing it with longitudinal data for respondents who were virgins at T1.

Now that a significant relation between first sex and friends' private religiosity has been established, I turn to the mediating factors of guilt, embarrassment, loss of respect, and quitting

school. I am interested in whether the coefficient for friends' private religiosity changes significantly when these other variables are entered, which, depending on the variable, would indicate that friends' religiosity is associated first sex through social control or social learning processes. In models 4 through 7 I introduce these variables and find that when entered alone, all are significant and negative. For every unit increase in guilt, the odds of having sex are reduced by over 100%. The odds decrease by 32% for every unit increase in embarrassment, they decrease by 39% for every unit increase in loss of respect, and they decrease by 20% for every unit increase in quitting school. When guilt is included in the model individual public religiosity ceases to be significant. This change suggests that individual public religiosity is primarily influencing first sex through potential feelings of guilt about having sex.

While embarrassment, loss of friends' respect and quitting school are significant and negatively associated with first sex, only guilt attenuates the relation between first sex and friends' private religiosity, showing that friends' religiosity is related, in part, to first sex through social learning processes. When guilt was entered into the model, the exponentiated odds for friends' private religiosity changed from 0.81 to 0.88, a 40% (log-odd difference $-0.08 = -0.21 - (-0.13) / -0.21$) decrease in the size of the coefficient. To test whether this decrease is statistically significant, I use a formula derived by Clogg et al. (1995) for determining the significance of mediating variables. This formula calculates the standard error for the difference in estimates between full and reduced models, which can then be used in a conventional t-test to discern significance (Felson, 2005).¹⁸ Using this technique, I find that when guilt is included friends' private religiosity decreases significantly. Religious friends are associated with first sex, in part,

¹⁸ I was not able to account for clustering in the survey sampling design when I tested for significance. The formula for the t-test is $t = (b^* - b) / s(b^* - b)$ where b^* is the beta coefficient for the reduced model, b is the beta coefficient for the full model, and $s(b^* - b)$ is the standard error of the difference.

by increasing teens' potential feelings of guilt after sex, which indicates social learning processes. As expected social control, as measured with loss of friends' respect, has less of a mediating influence on the relation between friends' religiosity and first sex. Likewise, quitting school did not substantially change the relation, which was also expected because religion is less relevant to this reason for maintaining virginity.

Model 8 includes only the mediating factors (guilt, embarrassment, and loss of friends' respect) that increase the overall model fit. Backward elimination shows that quit school did not significantly increase the fit when the other three variables were included, and I, therefore, removed it. In this model friends' public religiosity is significant at the 0.08 level and the coefficient is almost the same as it was when only the mediator guilt was included. Aside from having been in a dating relation, the relative size of guilt is larger than any of the other variables in the model. The relative size of loss of friends' respect is also quite large, trumping race, parental approval of sex, gender, out nominations, parental closeness, and living with two parents. Friends' private religiosity is one of the smaller coefficients in the model, trumping only other race, Hispanic, and Catholic.

The smaller size of friends' religiosity relative to guilt, embarrassment, and friends' respect should not be surprising, given that the latter variables speak specifically to issues related to sexual intercourse. Religion, in contrast, refers to a general worldview that includes proscriptions about premarital sex. Additionally, while the mediators are taken directly from the respondents' answers, friends' religiosity is calculated from a partial list of the respondents' friends, reducing the overall reliability of the measure.

Finally, previous research (Billy, Rodgers, and Udry, 1984; Meier, 2003; Rostosky, Regnerus, and Wright, 2003) has suggested that first sex, attitudes about sex, and friend

influences may differ according to gender. I tested these associations by looking at the interaction between gender and friends' religiosity, and gender and the mediating variables. None of the interactions were significant, suggesting that consistent with previous research (Adamczyk and Felson, 2005) using the Add Health saturated sample, the main results do not depend on gender. Likewise, I did not find any significant interactions between personal religiosity and being black versus white.

MODERATORS

Having established that guilt attenuates the relation between friends' private religiosity and first sex, I examine in Table 4 whether friends' religiosity enhances or moderates guilt, embarrassment and loss of friends' respect. The first model includes the significant and negative interaction between guilt and friends' religiosity. As shown in Chart 1, friends' religiosity appears to enhance medium and high levels of guilt for the first sex for white sixteen-year old males, who have been in a romantic relation. When they think that they will experience a lot of guilt after sex, they have a 23% chance of having lost their virginity. When they think they will feel a lot of guilt and have highly religious friends their probability of having first sex decreases to an additional 12%. A similar relation is found for males with a mean level of potential guilt.

The second model presents the interaction between embarrassment and friends' religiosity, which is negative, but not significant at the 0.10 level. Likewise, the interaction between friends' loss of respect and friends' religiosity in Model 3 is not significant. Although the interaction between guilt and friends' religiosity is significant, the model's log likelihood when the term is included decreases minimally (-1054.75 to -1054.57) from that in Model 8 of Table 3, suggesting that the interaction between guilt and friends' religiosity does not

significantly enhance the overall fit of the model. The results (not shown) for the influence of personal religiosity do not seem to depend on gender or being black versus white.

ROMANTIC PARTNER

In Table 5 I examine the association between first sex and romantic partners' religiosity relative to friends' religiosity. The first model can be used as a baseline from which the association between romantic partners and friends' religiosity can be gauged. Consistent with Model 1 in Table 3 individuals' private and public religiosity is significant and negatively associated with first sex. For the most part, the direction and magnitude of the control variables are similar.

In Model 2 I include romantic partners' private religiosity, which is not significant. In the third model I enter romantic partners' public religiosity, which is similarly insignificant ($p > .10$), but in the expected negative direction. These two findings indicate that romantic partners' religiosity is not specifically related to first sex. To confirm that friends' religiosity, in contrast to romantic partners' religiosity, is not due to a lack of power, I enter friends' private religiosity in the final model. This variable is significant and in the expected negative direction. For every unit increase in friends' private religiosity, the odds of first sex are reduced by 28%. Like previous analysis (see Model 3 in Table 3), the standardized size of friends' religiosity is located between individuals' public and private religiosity. The findings in Table 5 indicate that in contrast to romantic partners' private and public religiosity, friends' private religiosity is significantly associated to first sex.

Conclusion

Consistent with previous research, personal religiosity is negatively associated with first sex (Rohrbaugh and Jessor 1975; Studer and Thornton 1987; Thornton and Camburn 1989;

Cochran and Beeghley 1991; Sheeran *et al.* 1993; Zaleski and Schiaffino 2000; Holder *et al.* 2000; Meier 2003). While private religiosity appears to influence first sex, the relation is mediated by guilt. Teens who attend more religious services and activities, experience more guilt, and are less likely to have had first sex. In contrast to public religiosity, individual private religiosity is not mediated by any of the attitudes about sex. Indeed, private religiosity (prayer and religious importance) is significant in all of my models, suggesting that it is a robust and has an important association with first sex, even when considered in the context of other factors like living in a two-parent family or being close to one's parents.

Consistent with previous research (Adamczyk and Felson, 2005) and chapter 2, the findings presented here also show that friends' religiosity is associated with first sex. The association with friends' private religiosity is quite powerful, similar in magnitude to individuals' private religiosity and greater than individuals' public religiosity. In contrast, friends' public religiosity was not significantly related to first sex when included with friends' private religiosity. Friends who attend church or participate in youth groups, but pray infrequently or think religion is unimportant, do not seem to be pro-abstinence role models.

The analysis presented here also shows that friends' religiosity is associated with first sex through social learning processes. When individuals are involved in intimate social relations, they acquire attitudes or "definitions" toward behaviors (Sutherland, 1960; Akers *et al.*, 1979; Akers, 1985, 1998). As they receive more exposure to proreligion attitudes and behaviors, teens take them as their own, even if they are not persuaded by the religious basis of those proscriptions. Specifically, friends' religiosity seems to be associated with the potential guilt adolescents may experience after having sex. Although religious individuals may ground their guilt in biblical precepts and prospective retribution from a divine power, more secular

adolescents may feel guilty for other reasons (e.g. losing their virginity with someone with whom they are not very close). Whatever the source, religious friends are, in part, associated with first sex via guilt.

Religious friends are not associated with anticipated feelings of embarrassment over a potential pregnancy, loss of friends' respect, or the prospect of having to quit school, if they get pregnant. The former two reasons for not having sex are significantly associated with first sex. I included loss of friends' respect to specifically assess whether religious friends are associated with first sex through social control mechanisms. The idea here is that if individuals are attached to other teens who value religion, they will be less likely to participate in religiously proscribed behaviors because they wouldn't want to risk jeopardizing their friendships (Adamczyk and Felson, 2005). I found that as concern over loss of friends' respect for having sex increases, teens are less likely to have lost their virginity. However, loss of friends respect does not attenuate the friends' religiosity-first sex link. While social control mechanisms have an influence on first sex, they do not explain why friends' religiosity is related to first sex.

Previous research has suggested that social learning influences may have a greater influence on first sex, than social control, even though the latter is still important (DiBlasio and Benda, 1990; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994). In addition to supporting these findings, my research adds to our understanding of attachment by examining the bond to religious friends. Discussions of attachment in social control theory typically focus on the bond between adolescents and their parents. However, Hirschi's (1969) original social control theory and research (Kelman, 1958) on compliance does not specify to whom the attachment has to be. My research shows that friends' respect has an independent and significant association with first

sex, even after accounting for many another important variables including parental closeness and living with two parents.

Although guilt seems to mediate the link between friends' religiosity and first sex, it did not fully explain the association, suggesting that another process may be at work. In his research on delinquency Felson (2002) posits that many deviant acts require a partner and sufficient opportunity. Unlike delinquency, premarital sex is an act that must be completed with another person. When adolescents have religious friends, they may have more difficulty finding a partner with whom to have sex. In addition, active religious groups often provide their adherents with chances to interact and become involved with other members (Stark and Bainbridge, 1980; Iannaccone, 1994; Stark and Finke, 2000). If adolescents are involved with religious friends, they are more likely to participate in events where religious precepts are supported. These events may include structured activities and adult supervision, which could dissuade sex in the same way that it limits delinquency (Osgood et al., 1996; Felson 2002).

Researchers typically account for sex opportunities with a measure of whether teens have been in a romantic relation (Rostosky, Regnerus, and Wright, 2003; Meier, 2003). Like my research, these studies find that first sex is significantly related to having had a boyfriend or girlfriend. I did not, however, find that it mediated the relation between first sex and friends' religiosity. Although a boyfriend or girlfriend may provide sex opportunities, many adolescents may not have first sex with them. In her analysis of 1,320 interviews, Giordano et al. (2003) found that one-third of teens had sex with someone they considered a friend, rather than a dating partner, and another third had sex with a previous boyfriend or girlfriend.

A better indicator of sex opportunity might account for any remaining variation in the link between friends' religiosity and first sex. However, there may be additional significant

attitudinal variables for which I did not account that could also explain the link. In other words, it is possible that guilt, embarrassment, and loss of friends' respect are not sufficient indicators of social learning processes. Although a better measure might explain the association, friends' public religiosity was marginally significant ($p < .10$) once the other variables were added, and the inclusion of guilt decreased the influence of friends' religiosity for first sex by 40%. With such a powerful indicator of social learning, processes like opportunity may better explain remaining variation.

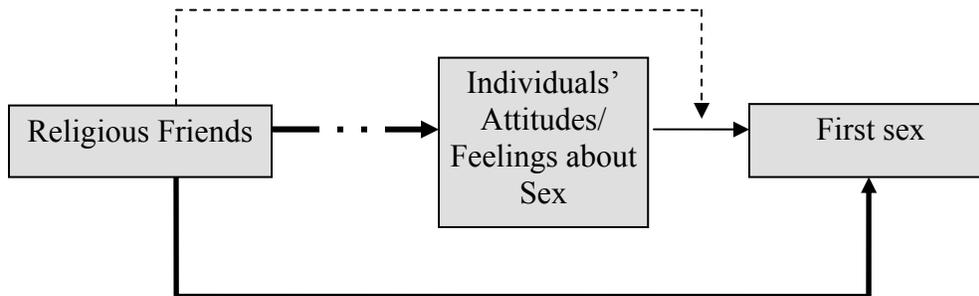
Scholars who study adolescents are increasingly recognizing the need to distinguish between different types of peer relations (Savin-Williams and Berndt, 1990; Giordano, 2003). My analysis supports this initiative, showing that the influence of religious peers depends on the type of relation. Whereas the religiosity of platonic friends matters much, the religiosity of romantic partners is not significantly associated with first sex. This result is ironic given that teens are more likely to have sex with a romantic partner than with a friend. Nevertheless, research on adolescents (Merton, 1996; Giordano, 2003) shows that their romantic relations tend to be short, unstable and superficial, all of which can limit the extent to which partners' religiosity has an effect. As adolescents mature, most develop deeper relations with their romantic partners, and as they spend more time with them, rather than friends, their partners' attitudes, values, and beliefs will have more of an effect (Warr, 1998; 2002).

The research presented here examined the influence of religious friends and romantic partners for first sex. However, friends' religiosity could also limit the number of sexual partners, intensity of sexual activities, and whether teens have sex again before marriage. Research has shown that individual religiosity influences the frequency of sexual activities and contraceptive use (Treboux and Busch-Rossnagel, 1990; DiBlasio and Benda, 1990; Benda and

DiBlasio, 1991). For many adolescents, premarital sex could be a one-time event after which guilt may delay sexual intercourse until marriage. Examining the number of partners, type of relation in which sex occurs, and variety of sexual activities would help us clarify the extent to which religious friends influence various aspects of teens' sexual relations.

In summary, these findings underscore the importance of social context in understanding the association between religion and individuals' behaviors. Group religiosity need not influence individual religiosity to be associated with first sex. Rather, through individuals' attitudes about the potential costs, the norms and values of religious friends can be associated first sex, even when the costs are not grounded in religion. In the previous chapter I showed that like religious friends, school religiosity is associated with first sex. The research presented here offers a template for examining and contrasting the process through which other religious contexts, like schools, are associated with people's behaviors.

Figure 3.1
Three Paths of Religious Friends' Influence



- Path 1: **Enhancement**
- . . - Path 2: **Social Learning**
- Path 3: **Social Control**

Table 3.1
Description of Variables Included in the Analysis

Variable name	Description
Dependent Variable	
Sexual Intercourse	Dummy variable indicating whether or not the respondent “ever had sexual intercourse? When we say sexual intercourse, we mean when a male inserts his penis into a female’s vagina.”
Key Independent Variables	
Individual Public religiosity	Mean of two standardized measures from respondent: church attendance and religious youth activities
Individual Private religiosity	Mean of two standardized measures from respondent: frequency of prayer and subjective religious importance
General religiosity	Mean of four standardized measures from respondent: church attendance, religious youth activities, frequency of prayer and subjective religious importance
Friends’ Private Religiosity	Mean private religiosity of friends who were nominated by respondent
Friends’ Public Religiosity	Mean public religiosity of friends who were nominated by respondent
Romantic Partners’ Private Religiosity	Mean private religiosity of past three romantic partners who were nominated by respondent
Romantic Partners’ Public Religiosity	Mean public religiosity of past three romantic partners who were nominated by respondent
Social Learning Variables	
Guilt	Five category question ranging from strongly agree to strongly disagree, which asked the respondent, “If you had sexual intercourse, afterward you would feel guilty?”
Embarrassment	Five category question ranging from strongly agree to strongly disagree, which asked the respondent, “If you got someone pregnant/ you got pregnant, it would be embarrassing for you?”
Friends’ respect	Five category question ranging from strongly agree to strongly disagree, which asked the respondent, “If you had sexual intercourse, your friends would respect you more?”
Social Control Variable	
Quit school	Five category question ranging from strongly agree to strongly disagree, which asked the respondent, “If you got someone pregnant/ you got pregnant, you would have to quit school?”
Demographic Variables	
Age	Respondent’s age at time of initial survey
Race	Set of dummy variables. White is the reference category.
Gender	Dummy variable
Additional Controls	
Parental approval of sex	Mean value of available score on four items asked of a parent and the respondent. Items asked of the respondent for each parent: (1) how would your mother feel about you having sex at this time in your life and (2) how would she feel about you having sexual intercourse with someone you

	knew well and was special to you? Items asked of mother: (1) how much do you disapprove of your child having sexual intercourse at this time, and (2) if it was someone that was special and he or she knew well, you would not mind?
Parents' education	Mean of mother, father, or parent's spouse's education on a 9-point scale, as reported by the respondent and one parent.
Living with two parents	Dummy variable indicating whether respondent lives at home with two parents.
Parental closeness	Mean value of available score for five items: (1) feel close to mother, (2) feel close to father, (3) feel mother cares about you, (4) feel father cares about you, and (5) feel parents care about you?
Romantic relation	Asks respondents if in the past 18 months they have had a special romantic relation with anyone.
Grades	Average of grades available in math, English, science, and history or social studies
Out nominations	Sum of instances of codes indicating out-of-school nominations.
Religious Affiliation	Dummy variables for five gross denominational categories. Reference category is mainline Protestant.

Table 3.2
Descriptive Statistics

	N	Mean	Minimum	Maximum	S.D.
Dependent variable					
Sex	2143	0.46	0.00	1.00	0.50
Demographic controls					
Age	2143	204.97	165.00	248.00	12.70
Hispanic	2143	0.11	0.00	1.00	0.32
Black	2143	0.12	0.00	1.00	0.33
Asian	2143	0.19	0.00	1.00	0.39
Other race	2143	0.02	0.00	1.00	0.15
Female	2143	0.47	0.00	1.00	0.50
Additional controls					
Parental approval of sex	2143	2.41	1.00	5.00	0.72
Parents education	2143	4.70	0.00	8.00	1.84
Living with two parents	2143	0.71	0.00	1.00	0.45
Parental closeness	2143	4.60	1.67	5.00	0.52
Romantic relation	2143	0.62	0.00	1.00	0.49
Grades	2143	2.67	1.00	4.00	0.79
Out nominations	2143	1.59	0.00	9.00	1.79
Religious affiliation					
Catholic	2143	0.39	0.00	1.00	0.49
Evangelical	2143	0.19	0.00	1.00	0.39
Other protestant religion	2143	0.05	0.00	1.00	0.21
Other religion	2143	0.04	0.00	1.00	0.19
No Religion	2143	0.11	0.00	1.00	0.31
Religiosity					
Individual private religiosity	2143	-0.06	-1.99	0.84	0.94
Individual public religiosity	2143	-0.06	-1.25	1.24	0.88
Friends private religiosity	2143	-0.06	-2.63	1.09	0.94
Friends public religiosity	2143	-0.08	-1.62	1.62	0.87
Romantic partners' private religiosity	804	-0.00	-1.98	0.96	0.94
Romantic partners' public religiosity	804	-0.00	-1.24	1.32	0.89
Mediators					
Guilt	2143	0.02	-1.66	1.52	1.00
Embarrassment	2143	0.06	-1.89	1.07	0.99
Loss of friends' respect	2143	0.01	-2.50	1.35	0.97
Quit School	2143	0.01	-1.19	2.07	1.00

Table 3.3
Mediating Influences of Attitudes on the Link between Religious Friends and First Sex
 Exponentiated Log Odds

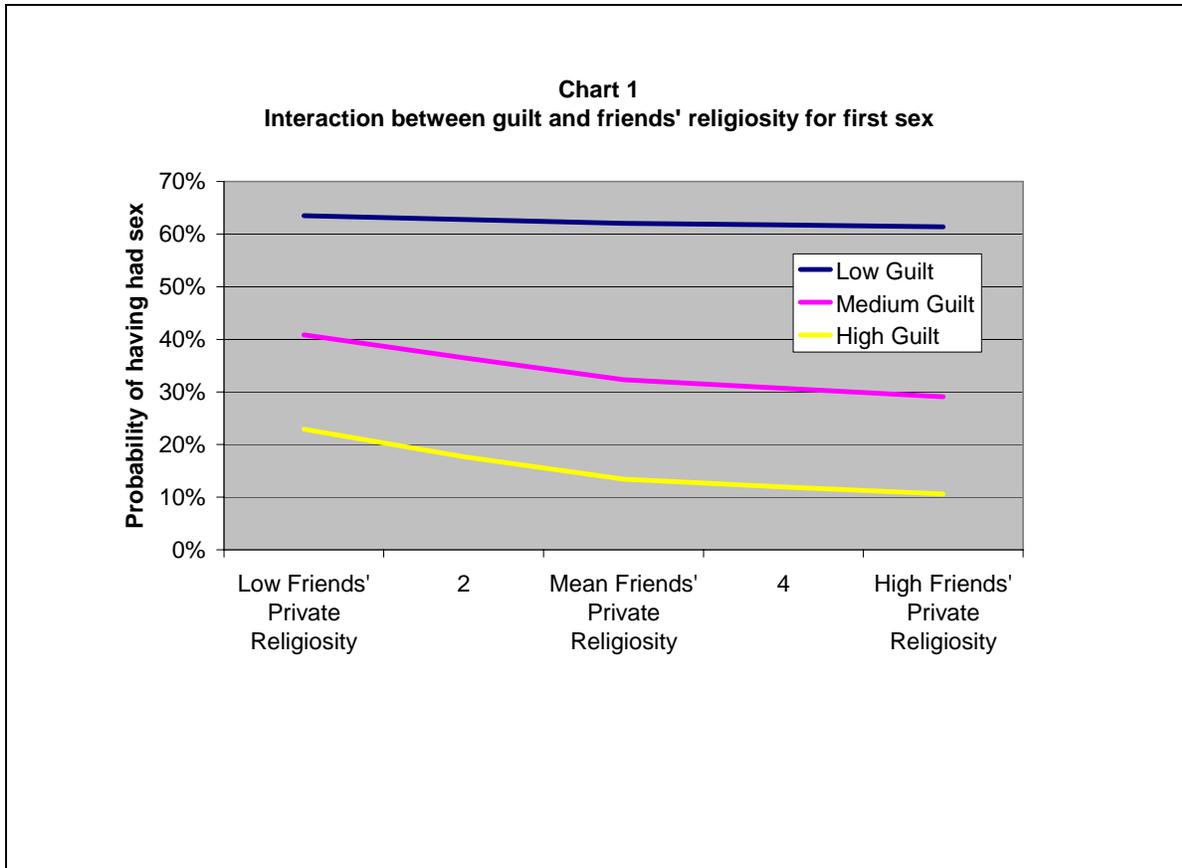
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Demographic controls								
Age	1.03**	1.03**	1.03**	1.03**	1.03**	1.04**	1.03**	1.03**
Hispanic	1.24	1.37*	1.37*	1.34+	1.28	1.42*	1.40*	1.36+
Black	2.74**	2.96**	3.01**	2.35**	2.65**	2.81**	2.77**	2.13**
Asian	1.09	1.24+	1.25	1.17	1.16	1.16	1.25+	1.06
Other race	1.40	1.56*	1.53*	1.57**	1.44+	1.39+	1.51*	1.42*
Female	0.97	0.98	0.98	1.26**	1.00	1.19+	0.97	1.51**
Additional controls								
Parental approval of sex	1.51**	1.49**	1.50**	1.35**	1.44**	1.44**	1.48**	1.29**
Parents education	0.96	0.96	0.96	0.97	0.98	0.97	0.97	0.98
Living with two parents	0.82**	0.80**	0.81**	0.82**	0.82**	0.81**	0.82**	0.83**
Parental closeness	0.81*	0.82*	0.82*	0.82**	0.85+	0.83*	0.82*	0.84*
Romantic relation	4.95**	4.92**	4.94**	4.56**	4.82**	4.96**	4.88**	4.55**
Grades	0.67**	0.68**	0.68**	0.71**	0.70**	0.70**	0.68**	0.74**
Out nominations	1.13**	1.13**	1.13**	1.12**	1.12**	1.13**	1.13**	1.12**
Religious affiliation								
Catholic	0.92**	0.90**	0.93*	0.91**	0.92**	0.88**	0.93*	0.87*
Evangelical	1.15	1.20	1.20	1.29	1.21	1.21	1.22	1.32
Other protestant religion	0.88	0.88	0.89	1.10	0.94	0.90	0.89	1.13
Other religion	0.78	0.79	0.79	0.91	0.78	0.80	0.79	0.90
No religion	0.75+	0.74+	0.74+	0.88	0.72*	0.77+	0.75+	0.87
Religiosity								
Individual private religiosity	0.75**	0.78**	0.78**	0.87**	0.78**	0.79**	0.78**	0.86*
Individual public religiosity	0.84**	0.87**	0.85**	0.94	0.86**	0.86**	0.86**	0.95
Friends' private religiosity		0.88*	0.81*	0.88+	0.81*	0.80*	0.82*	0.87+
Friends' public religiosity		0.87						
Mediating influences								
Guilt				0.47**				0.48**
Embarrassment					0.76**			0.87**
Loss of friends' respect						0.72**		0.75**

Quit school							0.83**	
Observations	2143	2143	2143	2143	2143	2143	2143	2143
Pseudo R-squared	0.22	0.22	0.22	0.28	0.23	0.23	0.22	0.29
Log likelihood	-1160.35	-1152.95	-1154.33	-1069.28	-1142.60	-1138.71	-1148.35	-1054.75
+ Significant at 10%; * Significant at 5%; ** Significant at 1%								

Table 3.4
Moderating Influences of Attitudes on the Link between Religious Friends and First Sex
 Exponentiated Log Odds

	Model 1	Model 2	Model 3
Demographic controls			
Age	1.03**	1.03**	1.03**
Hispanic	1.35+	1.35+	1.36+
Black	2.12**	2.13**	2.13**
Asian	1.06	1.06	1.06
Other race	1.42*	1.42*	1.44*
Female	1.51**	1.51**	1.52**
Additional controls			
Parental approval of sex	1.29**	1.29**	1.29**
Parents education	0.98	0.98	0.98
Living with two parents	0.83**	0.83**	0.83**
Parental closeness	0.84*	0.84*	0.84*
Romantic relation	4.57**	4.55**	4.54**
Grades	0.74**	0.74**	0.74**
Out nominations	1.12**	1.12**	1.12**
Religious affiliation			
Catholic	0.87**	0.87*	0.87*
Evangelical	1.32	1.32	1.31
Other protestant religion	1.13	1.13	1.13
Other religion	0.90	0.90	0.90
No religion	0.88	0.87	0.88
Religiosity			
Individual private religiosity	0.86*	0.86*	0.86*
Individual public religiosity	0.95	0.95	0.95
Friends' private religiosity	0.86*	0.87+	0.87+
Mediators			
Guilt	0.48**	0.48**	0.48**
Embarrassment	0.87**	0.87**	0.87**
Loss of friends' respect	0.75**	0.75**	0.75**
Moderators			
Interaction between guilt and friends religiosity	0.94*		
Interaction between embarrassment and friends' religiosity		0.99	
Interaction between loss of friends' respect and friends' religiosity			1.04
Observations	2143	2143	2143
Pseudo R-squared	0.29	0.29	0.29
Log likelihood	-1054.34	-1054.73	-1054.57

+ Significant at 10%; * Significant at 5%; ** Significant at 1%



Probabilities are shown for a white 16 year-old male, who has been in a romantic relation and has been assigned the mean or reference category for all other variables.

Table 3.5
Romantic Partners and Friends' Religiosity for First Sex
 Exponentiated Log Odds

	Model 1	Model 2	Model 3	Model 4
Demographic controls				
Age	1.04**	1.04**	1.04**	1.04**
Hispanic	1.69+	1.69+	1.73+	1.90**
Black	3.06**	3.05**	3.15**	3.47**
Asian	2.78**	2.77**	2.87**	3.28**
Other race	1.63	1.63	1.66	1.92
Female	0.91	0.91	0.90	0.91
Additional controls				
Parental approval of sex	1.59+	1.59+	1.58+	1.58+
Parents education	0.88*	0.88*	0.88*	0.87*
Living with two parents	0.89	0.89	0.90	0.88
Parental closeness	0.83	0.83	0.82	0.84
Grades	0.69*	0.69*	0.69*	0.71*
Out nominations	1.14**	1.14**	1.14**	1.14**
Religious affiliation				
Catholic	0.98	0.98	0.97	0.95
Evangelical	1.47+	1.47+	1.52*	1.52*
Other protestant religion	0.43**	0.43**	0.43**	0.42**
Other religion	0.95	0.95	0.94	1.00
No religion	0.42*	0.42*	0.41*	0.41*
Religiosity				
Individual private religiosity	0.68**	0.68**	0.68**	0.72**
Individual public religiosity	0.76*	0.76**	0.77*	0.79*
Romantic partners' private religiosity		1.00		
Romantic partners' public religiosity			0.91	
Friends private religiosity				0.78**
Observations	674	674	674	674
Pseudo R-squared	0.18	0.18	0.18	0.19
Log likelihood	-381.49	-381.49	-381.10	-379.02
+ Significant at 10%; * Significant at 5%; ** Significant at 1%				

CHAPTER 4- SOCIALIZATION VERSUS SELECTION

Like many researchers, I made the assumption in previous chapters that adolescents are influenced by their friends' religiosity, rather than select their friends on the basis of consistency between their sexual behaviors and their friends' level of religiosity. In this chapter I examine specifically the influence of socialization and selection in the link between first sex and friends' religiosity, finding evidence of both processes.

Until recently, the average age at which people first have sex has decreased. Today most youth report having had sex by the time they graduate from high school. The falling age has, understandably, generated much policy and research interest. One topic that has received a lot of attention is the influence of friends' attitudes and behaviors. Researchers (Treboux and Busch-Rossnagel, 1990; DiBlasio and Benda, 1990; Benda and DiBlasio, 1993, Thornberry et al., 1994; DiBlasio and Benda, 1994; Billy, Rodgers, and Udry, 1984) have found that sexually active or liberal teens tend to have similar friends. To explain the association social scientists have focused on the way friends influence teens. Much less attention has been given to how teens select, deselect, or are rejected by their peers.

Like these other researchers, sociologists of religion have become interested in how religious contexts, like nations, regions, schools and friendship groups, influence individual attitudes and behaviors (Pescosolido, 1990; Stark, 1996; Kelley and De Graaf, 1997; Moore and Vanneman, 2003; Regnerus, 2004; Finke and Adamczyk, 2005; Adamczyk and Felson, 2005). When a relation is found, they typically assume that the context has a socializing influence. Because people have limited choice in selecting macro-level environments like their nation or region of origin, this conclusion seems justified. However, individuals have considerably more choice over their friends, where they work and with which groups they volunteer.

Despite a growing interest in contextual effects, researchers have not examined the extent to which the relation between friends' religiosity and individual behavior is a function of socialization or selection, which may also include peer rejection and deselection. That is, to what extent does friends' religiosity influence individual behavior and to what extent do people choose or sort into friendship groups on the basis of behavior? To adequately understand the process by which context relates to behavior, we need to know whether people select or are

socialized by them. We cannot, for example, assume friendship normative influences, if individuals sort into groups on the basis of similarities.

In this paper I examine whether friendship group religiosity influences first sex and/or adolescents select their friends (or deselected/ are rejected by them) on the basis of consistency between religiosity and first sex. A number of researchers have confirmed an inverse relation between personal religiosity and first sex (Rohrbaugh and Jessor, 1975; Thornton and Camburn, 1989; Sheeran, 1993; Rostosky et al., 2003; Meier, 2003; Lefkowitz et al., 2004). However, few have examined the influence of religious friends (for an exception see Adamczyk and Felson, 2005).

In addition to an individual property, this study sees religion as a group characteristic, which can shape friendships and/or influence sexual behaviors. Additionally, this study envisions friendship groups as dynamic, which challenges the typically static understanding of contexts. Using information from adolescents and their friends at two time points, I find that net of individual religiosity the association between friends' religiosity and first sex is reciprocal effects operate in both directions.

Influence or Socialization

Literature on the connection between religious influences and sexual behaviors and attitudes has focused on socialization processes (Bock, Beeghley, and Mixon, 1983; Cochran and Beeghley, 1991). The assumption is that individuals are influenced by the attitudes, beliefs, and behaviors of people they value. Prior to adolescence, parents are the most important figures for children's evaluative definitions of behaviors and beliefs. But, during adolescence, teens spend the majority of their free-time with other youth who become a valuable source for behavioral directives and evaluation. A number of researchers (DiBlasio and Benda, 1990; Warr and

Stafford, 1991; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994; Warr, 2000; Maxwell 2002) have noted the important influence that friends can have in shaping teens' attitudes and behaviors. Social scientists like Sutherland (1960) and Akers (1985, 1998) have posited that through social interaction friends can transmit motives, rationalizations and attitudes to participate in certain behaviors.

Although few sociologists have examined religious friends, religion researchers have found an association between religious reference groups and individuals' attitudes about sex and illegal acts, suggesting that religious friends may have a similar effect (Bock, Beeghley, and Mixon, 1983; Cochran and Beeghley, 1991; Grasmick, et al., 1991). Characterizing religious denominations as reference groups, Cochran and Beeghley (1991) found that as the effect of denominational proscriptiveness increases, the effect of religiosity on nonmarital sexual permissiveness also increases. Similarly, Grasmick et al. (1991) see religion as a sanctioning system that can influence behavior through shame, which they characterize as an internal control process or embarrassment, which they see as socially imposed. Although they find that shame had a greater influence on taxpayers' inclination to cheat, embarrassment is also important. These studies suggest that teens may take the norms and attitudes emanating from a group of religious friends as an important reference for their own sexual behaviors.

Research on the mechanisms that enable groups to control their members suggests that there are two primary processes (normative and informational social influences) through which friends could influence teens' behaviors (Deutsch and Gerard, 1955). With normative influences, teens may comply with majority beliefs and attitudes for the purpose of group acceptance. Analogous to normative influences is Hirschi's (1969) initial concept of social control, which posits that when individuals have strong attachments to other people, they will try

to maintain reputations that are consistent with group attitudes. All major religions, including Christianity, maintain proscriptions on premarital sex. Because they do not want to jeopardize friendship attachments and want to receive a favorable group reaction, more secular and religious adolescents may delay first sex when they have religious friends.

In contrast to normative influences, adolescents may accept majority beliefs as evidence about reality; even though they may not have been convinced *per se*, which Deutsch and Gerard (1955) refer to as informational influence. Using Kelman's (1958) typology, informational influences can be further distinguished with identification and internalization. With identification teenagers may accept their religious friends' proscriptions about premarital sex because they want to maintain a satisfying self-defining relation to friendship group members. However, the religious basis of the proscription may be irrelevant. Because biblical precepts are not important, religious friends' may influence first sex, regardless of personal religiosity. Conversely, with internalization, adolescents will find not only the proscriptions, but also the religious content intrinsically rewarding. With internalization the influence of religious friends on first sex would work through teens' personal religiosity.

In addition to normative and informational influences, religious friends could affect first sex by limiting sexual partners and involving teens in conventional activities, such as religious gatherings (Felson, 2002; Adameczyk and Felson, 2005). Although friends could provide potential sex partners, religious adolescents are more likely to delay first sex than more secular teens (Rohrbaugh and Jessor, 1975; Thornton and Camburn, 1989; Sheeran, 1993; Rostosky et al., 2003; Meier, 2003). In addition to providing fewer potential sex partners, religious teens participate in more events where religious precepts are supported. Regardless of personal religiosity, if teens spend time with religious friends, they are more likely than more secular

adolescents to participate in these events. Religious sponsored activities are often structured and include adult supervision, which could dissuade sex in the same way that these things limit delinquency (Osgood et al., 1996; Felson 2002).

Longitudinal research on the relation between religiosity and first sex offers support for the idea that religious friends' may shape adolescents' behaviors. In one of the few studies to examine the relation between friends' religiosity and first sex, Adamczyk and Felson (2005) found that friends' religiosity among virgins was negatively associated with first sex during the following year. Their findings are consistent with longitudinal research on the link between personal religiosity and first sex. Using data from the National Longitudinal Study of Adolescent Health, Meier (2003) found that females' religiosity among virgins was negatively correlated with having sex during the next year. Rostosky et al. (2003) found the same relation for males and females.

As discussed above, there are several reasons why friends' religiosity may influence first sex. Less clear is whether adolescents switch to less religious friends after having first sex. Meier (2003) examined the influence of virginity loss on change in individual religiosity and did not find a significant relation. Her study suggests that individuals are able to manage inconsistencies between personal religiosity and first sex. That is, even though they may see themselves as religious and presumably adhering to religious precepts, having sex does not change their religious beliefs or participation. However, there are several reasons why this same pattern may not exist for friends' religiosity and first sex. In the following section I explain why adolescents may acquire friends whose religiosity is consistent with their virginity status and may sort into another friendship group when they differ.

Acquisition, Deselection, and Peer Rejection

In contrast to socialization, researchers have given much less attention to the selection processes. Nevertheless, when two friends have similar sexual behaviors and levels of religiosity, either socialization or selection processes may be at work. Indeed, social psychologists tend to account for interpersonal attraction in terms of similarity in attitudes, values and behaviors (Smith-Lovin, and Cook, 2001). In their summary of this literature, Hallinan and Tuma (1978) present four major social-psychological arguments to explain similarity in friendship maintenance, formation, and dissolution. First, similarity makes the interaction more rewarding because it increases the members' approval of each other and the probability of liking in the future (Huston and Levinger, 1978). Secondly, hostility between two people is minimized when they are similar because there are fewer potential points of conflict. Third, psychological discomfort resulting from cognitive inconsistency is reduced and esteem and comfort increase when individuals are alike. Finally, similar people can reinforce each other's identity.

If virginity status and religion are salient aspects of adolescents' lives then the above explanations could explain why teens may develop relations with other youth on the basis of sexual behavior and religion. Research (Billy and Udry, 1985) examining similarity in teens' sexual behaviors has found that both white males and females acquire friends, whose sexual behavior is like their own. Likewise, religious homophily¹⁹ seems to exist in all societies that have religious diversity, suggesting that religion may be an organizing characteristic of relations (Huston and Levinger, 1978). In his review of the literature on differences in churches and sects, Iannaccone (1988) found that sect members tended to have a large proportion of friends from

¹⁹ Lazarsfeld and Merton (1954) define homophily as the tendency for persons who associate with one another to be similar in a variety of ways.

their same religious group. Similarly, Bainbridge and Stark (1981) found that Christian fundamentalist students were particularly likely to make religion a keystone of their relations.

Whereas religious affiliation is typically considered a dimension of status homophily, sexual behaviors are characterized as value or attitudinal homophily (Lazarsfeld and Merton, 1954; McPherson, Smith-Lovin, and Cook, 2001). Nevertheless, religion presents a worldview that addresses the morality of sexual behaviors. Thus, the degree of consistency between sexual behaviors and religiosity could be an important organizing characteristic of relations.

Adolescents who think their religion is important should take it more seriously. When teens choose their friends, they may opt for people whose behaviors are consistent with their religious beliefs.

In the same way that they may choose friends on the basis of consistency between religion and sexual behaviors, teens may deselect friends using the same criterion. Research (Kandel, 1978; Burt, 2001) has found that homophily is an important predictor of not only selection, but also tie dissolution or decay. In their review of homophily McPherson, Smith-Lovin, and Cook (2001) explain that patterns of tie dissolution tend to mimic those of tie formation. Their conclusion is consistent with Hallinan and Williams' (1989) research finding that schoolchildren's cross-sex and cross-race ties are more likely to be dropped than ties among demographically similar friends. In work on group membership and ties, Popielarz and McPherson (1995) similarly found that the less like a member was to other people in the group, the more likely he or she was to leave the group. For teens who have religious friends, but, nevertheless, have sex, the status change could make interaction with religious friends psychologically uncomfortable and reduce many of the rewards of spending time with friends

who were similar. Their friends may feel the same way, rejecting the individual when he or she has first sex.

Social psychological arguments for similarity and interpersonal attraction suggest that acquisition and deselection may explain the correlation between friends' religious beliefs and first sex. If adolescents choose their friends on the basis of consistency between religiosity and virginity status, however, how do they find these people? Sexual acts tend to take place outside the purview of friends. Likewise, prayer often takes place in private, and church attendance and youth group participation usually occur after school and on Sundays when potential friends may not witness the behavior. Adolescents increase the probability of discovering similar friends through clique membership and discussions with other teens about religion and sex.

Regardless of virginity status, researchers (Reiss, 1970) have found that adolescents tend to talk openly about their sexual attitudes. In their work on communication with best friends about sex-related topics, Lefkowitz, Boone and Shearer (2004) found that while sexually active youth tended to discuss sex issues more frequently than abstinent youth, virgins were more likely to discuss abstinence than their sexually active counterparts. In his formation of the moral communities hypothesis, Stark and colleagues (Stark, Doyle and Kent 1980; Stark, Kent and Doyle 1982; Stark 1996) similarly posit that in conversations with religious friends, religious considerations enter discussions about right and wrong.

In addition to talking about religion and sex, teens can gauge each others' opinions about these issues and meet others like themselves through their social group (e.g. jocks, burnouts, nerds, etc.). In their study of transition-prone behaviors Jessor and Jessor (1975) found a correlation between sexual intercourse and risk taking behaviors such as smoking and drinking. Likewise, sex and minor delinquency are negatively associated with religious beliefs and

behaviors (Baier and Wright, 2001; Johnson *et al.*, 2002; Rostosky *et al.*, 1993; Meier, 1993). Participation in behaviors, like smoking and drinking may determine the type of social group in which teens find themselves (e.g. “fast crowd” vs. “slow crowd”). Proximity to members in a particular group heightens the probability of interaction with similar teens, and interaction can enhance familiarity and liking, which in turn increases proximity (Huston and Levinger, 1978). Once teens enter a certain social group (e.g. jocks, burnouts, nerds, etc.), they are not only more likely to meet similar adolescents, but similarities should make them comfortable enough to disclose personal information, like religious convictions and sexual behaviors, giving others a sense of their attitudes, beliefs, and behaviors.

Although researchers have not yet examined the socializing versus the selection influence of religious friends, social scientists have looked at these processes for other attitudes and behaviors. They typically find that both selection and socialization are involved. In his analysis of homophily, Kandel (1978) found, for example, that socialization and selection processes had an equal influence on current marijuana use, level of educational aspirations, political orientation, and participation in minor delinquency. Likewise, in their analysis of delinquent peers, beliefs, and delinquent behaviors, Thornberry *et al.* (1994) found that associating with delinquent peers leads to increases in delinquency and engaging in delinquency, in turn, increases association with delinquent peers. These previous studies suggest that friends religiosity should influence virginity loss, and first sex should effect whether teens switch to a less religious friendship group. Although I am not able to discern the relative influence of socialization and selection (deselection or peer rejection) for the relation between friends’ religiosity and first sex, I can assess which process or whether both explain the association.

By using data at two time points, this study also improves on previous research that has examined the respondent and peer link. Much of the research (Treboux and Busch-Rossnagel, 1990; DiBlasio and Benda, 1990; Benda and DiBlasio, 1993, Thornberry et al., 1994; DiBlasio and Benda, 1994) on the respondent and peer link has relied on cross-sectional data. However, data at two different times is necessary to determine the unique contribution of selection and socialization processes, and make sound theoretical conclusions about the association.

Likewise, information from respondents' friends is needed to adequately assess whether friends have a socializing influence. Much research (Treboux and Busch-Rossnagel, 1990; DiBlasio and Benda, 1990; Benda and DiBlasio, 1994; DiBlasio and Benda, 1994) on the relation between individuals and their friends relies on respondents' reports of their friends' attitudes and behaviors. However, researchers (Iannotti and Bush, 1992; Kandel, 1996; Haynie and Osgood, 2002; Ackerman, 2003) have criticized respondent reports because people tend to overestimate behavioral similarity shared with friends. In their examination of influence and similarity, for example, Jussim and Osgood (1989) found little evidence of interpersonal influence from friends primarily because respondents did not perceive their friends' attitudes accurately. Perceptions may be important for understanding friendship influences. However, if they are disconnected from friends' actual attitudes and behaviors, then they should not be treated as a normative product of the friendship group (Bill, Rodgers, and Udry, 1984). Because this study is concerned with normative group influences, as well as selection processes, I use information from friends and longitudinal data.

Data and Measurement

To test the relation between religious friends and adolescents' first sex, I use the first two waves of the National Longitudinal Study of Adolescent Health (Add Health), designed by the

Carolina Population Center.²⁰ Started in 1995, this survey was part of a three-wave school-based study on adolescents' (grades 7 to 12) health-related behaviors. Add Health was designed to explore the causes of these behaviors, with an emphasis on social contextual influences (e.g. family, friends, schools, communities). Investigators initially sampled 80 high schools from a complete database of all US high schools. High schools were selected using implicit stratification based on demographic characteristics (e.g. ethnicity, size, degree of urbanicity). Investigators also recruited primary schools linked to selected high schools, for a total of 132 schools.

A subgroup of the original in-school sample was randomly drawn for more extensive in-home interviews six months later. I use a subset of this in-home sample known as the saturated sample, in which attempts were made to administer in-home questionnaires to all students on the school roster. The saturated sample includes fourteen small schools (<300 students each) and two larger schools with enrollments of about 1,000 and 2,100 each. I eliminated one small special education school from the sample, leaving a sample of 15 schools and a total sample size of 3,657 students at the first wave. The number of respondents is drastically reduced when the following respondents are eliminated: nonvirgins at T1, respondents' without identifiable friends, or respondents who did not complete both Wave 1 and 2 surveys.

The saturated sample is not a national probability sample of US high school students; however it is the best available dataset with ample religion measures that allows assessment of friends' religiosity. Although the sample is not nationally representative, Add Health investigators included a diverse array of schools in the saturated sample to reflect the range of adolescent experience in the US. Of the two large schools comprising the majority of my sample,

²⁰ For more information about the study, see the "Research Design" section of the Add Health website:

<http://www.cpc.unc.edu/projects/addhealth/focus.html#design4>

one is an ethnically diverse urban school in the western region, and the other is a mostly white suburban school in the Midwest. The saturated sample over-represents students from small schools and minorities.

Below I describe the measures used to assess the selection and socialization processes in the relation between friends' religiosity and first sex. Table 1 provides information about how concepts are defined and corresponding measures calculated, and table 2 gives descriptive statistics.

DEPENDENT VARIABLES

For assessing the influence of friends' religiosity on first sex, I use a dichotomous dependent variable indicating whether or not a respondent who was a virgin during the first data collection had sex by the second wave. About one year passed between the first two waves. Although questions about sex are sensitive, Add Health investigators tried to limit social desirability bias by asking these questions using audio computer-assisted interview (audio CASI).

To examine selection, I use a dependent variable that assesses a change in friends' private religiosity between the first two waves of data collection. The score is computed from information about the respondents' friends. Respondents were asked to nominate up to a maximum of their five closest female and five closest male friends. Although respondents could nominate people from inside or outside of their school, Add Health only contains information on friends within the school. Adolescents who did not nominate any identifiable friends were deleted from the sample, as friends' scores could not be calculated.

Previous research (Billy, Rodgers, and Udry, 1984; Maxwell, 2002) on friend influences has relied on information from a random friend or a same-sex best friend. However, I use information from all available friends, which increases the reliability of the religious friends'

measure and maintains the paper's focus on *friendship groups*. However, friendship group religiosity could change without any new friends leaving or entering the group. Thus, for example, instead of individuals switching to less religious friends after having sex, their virginity loss could through socialization processes lower their current friends' religiosity, resulting in an overall decrease in the friendship group's religiosity. However, because less than 12 months on average passed between data collections and I use information from multiple friends (regression to the mean), major internal changes in the friendship group's overall religiosity should be minimized. In other words, it is unlikely that within one year many teens in the same friendship group will experience drastic changes to their religiosity.

Because almost all of the people within the school completed the survey, I have the same information on the available respondents' friends as I have on the respondents themselves. On average, respondents nominated a total of 5.2 people. When identifiable friends were eliminated the number of nominations dropped to 3.2. Because friends nominated outside of the school could provide an additional opportunity for sex, I control for the number of out-of-school nominations.

Preliminary analysis and previous research (Adamczyk and Felson, 2005, see also chapter 3) have shown that friends' public religiosity (religious attendance and youth group attendance) is not significantly related to first sex when private religiosity is also examined. Although friends who attend church or participate in youth groups may influence first sex, they do not seem to be inspiring pro-abstinence role models, unless they also pray and find religion important (Adamczyk and Felson, 2005). Thus, I rely on a measure of change in friends' private religiosity.

Private religiosity consists of two questions that ask about prayer and subjective religious importance at Waves 1 and 2. The frequency of prayer question has five categories, while religious importance had only four. Both measures were standardized before being added together and a mean calculated. To calculate the change score I subtract the Wave 2 friends' private religiosity measure from the Wave 1 measure. While zero indicates no change, positive numbers suggest a change to a more religious friendship group, and negative numbers mean a change to less religious friends.

KEY INDEPENDENT VARIABLES

The key independent variable that I use for examining socialization is friends' private religiosity, as measured at the first wave of data collection. The variable is developed, as discussed above, from questions about prayer frequency and religious importance. Together the items generate an alpha of 0.88. The key independent variable for assessing the selection process is first sex, as measured at the second wave of data collection for respondents who were virgins during the first wave.

CONTROL VARIABLES

Because adolescents who have religious friends are likely to be religious themselves, I control for individual private and public religiosity, and religious group affiliation. Like friends' private religiosity, individual private religiosity consists of prayer and subjective religious importance. Both measures were standardized before the mean was produced. Together they generate an alpha of 0.72. Public religiosity consisted of religious service attendance and youth group participation, which were each standardized before being added together and divided by two. Their alpha was 0.85. I controlled for respondents' denominational identity with dummy variables representing six religious groupings: Catholicism, Conservative Protestants, Mainline

Protestants, other Protestants, other religions, and no religion.²¹ Mainline Protestants is the reference category.

In addition to the key independent variables and individual religion measures, I also included in the models several demographic and control variables that could be related to either first sex or change in friends' religiosity. Academic achievement tends to be negatively correlated with premarital sexual relations (Schvaneveldt *et al.*, 2001), but positively associated with religiosity. I, therefore, include an average of self-reported grades from four academic subjects. Because males tend to report more sexual activity than females, I control for gender (Billy, Rodgers, and Udry, 1984; Eder and Enke, 1991; Whitbeck *et al.*, 1999). Likewise, males tend to report lower levels of religiosity than females and, therefore, I looked at an interaction between gender and individual religiosity. Older adolescents are more likely to have sex than younger teens and, therefore, I include age in my models.

Previous research has found that age of first sexual activity (Ford and Kadushin, 2002) varies by race. Thus, I include five racial/ethnic categories: Black, Hispanic, Asian, White, and Other. Because African Americans tend to report higher levels of religiosity, I wanted to look at

²¹ Denominations coded conservative Protestant include: Adventist, African Methodist Episcopal, Assemblies of God, Baptist, National Baptist, Holiness, and Pentecostal. Mainline Protestants include: Disciples of Christ, Congregationalist, Episcopalian, Lutheran, Methodist, Presbyterian, United Church of Christ, and Quaker. Other Protestants were Protestants whose denomination was not ascertained. Other religions included: Christian Science, Jehovah's Witness, Mormon, Baha'i, Buddhist, Eastern Orthodox, Hindu, Muslim, Jew, Unitarian, and respondents with an unspecified other religion. Because sample size was small, disaggregating other religions was not practical. I followed Steensland *et al.*'s (2000) advice in choosing to classify Jehovah's Witness, Unitarian, and Christian Scientist as non-Protestant. Unfortunately, I could not make fine-grained distinctions about denomination among Add Health respondents because the W1 in-home interviews do not include detailed information on denominational affiliations.

the interaction between Black and personal religiosity. However, the sample for examining socializing influences included only 130 African American teens and 112 for selection processes. Because there are so few African American adolescents, I didn't examine the interaction. However, cross-sectional research in the previous chapter suggests that Whites and Blacks do not substantially differ in the relation between personal religiosity and first sex.

As mentioned above, virginity status tends to be correlated with smoking, drinking, and other forms of delinquency. Jessor and Jessor (1975) refer to the joint occurrence of these behaviors as transition-proneness, a status change that occurs when behaviors start to depart from the regulatory norms that define what is appropriate for a particular age or stage of life. Today, most adolescents participate in some nonage specific illegal behaviors and drinking or smoking. Out of 11 possible nonage specific illegal acts (e.g. stealing, graffiti, selling drugs), adolescents in my sample participated in 1.19 activities and half of them tried drinking or smoking (see Table 2). Although minor delinquency may be normative, I include measures of illegal acts and whether adolescents have tried drinking or smoking, as teens who have frequently participated in these behaviors are more likely to be in a social group that condones these behaviors. The alpha value for the scale of 11 nonage-specific delinquent acts is .77. For smoking and drinking it is .63.

Although I control for parental education, I could not account for income because too much data (roughly one-third of the cases) was missing on the available measures. The absence of an income measure should not, however, be a major drawback. Similar research (Meier 2003) using Add Health data found that (logged) income was not significantly related to first sex. In addition to parental education, I control for three other family context controls -closeness to parents, parental approval of premarital sex, and whether adolescents are living in two-parent families- which previous research (Miller and Bingham, 1989; Treboux and Busch-Rossnagel,

1990; DiBlasio and Benda, 1990; Benda and DiBlasio, 1994; DiBlasio and Benda, 1994; Lammers *et al.*, 1999; Little and Rankin, 2001) suggests may be related to either religion or first sex. Finally, adolescents in a dating relation are more likely to have sex than teens without a partner, and, therefore, I control for dating status (Adamczyk and Felson, 2005; Rostosky et al., 2003).

METHODS

To examine the socializing influence of friends' religiosity on first sex, I employ logistic regression models, as the dependent variable, sexual intercourse, is dichotomous. Specifically, I look at the influence of friends' private religiosity measured at T1 on first sex at T2 for adolescents who are virgins at T1. Although I am not able to assess whether friends' religiosity actually causes a change in virginity status, I can establish whether the causal ordering is correct and then make the argument that friends' religiosity influences first sex. Drawing the conclusion that friends influence first sex on the basis of causal ordering is consistent with the reasoning of many other social science studies (see for example Meier, 2003 and Rostosky et al., 2003).

For analyzing selection effects, I employ OLS regression analysis techniques because the dependent variable, change in friends' religiosity, is considered a continuous variable. When only two waves of data are used to assess change, researchers typically use either the *regressor-variable method* or the *change-score method* (Allison, 1990). If I used the regressor-variable method, I would regress friends' religiosity at T2 on first sex, controlling for friends' religiosity at T1²². However, adolescents self-select into first sex, and it is not clear how they might differ

²² The equation for the regressor-variable methods would be:

$$FR_{i2} = B_0 + B_1(Sex) + B_2(FR_{i1}) + r,$$

where

$$FR_{i2} = \text{Friends' religiosity at Time 2}$$

from teens who do not have first sex. When there is unmeasured selectivity bias, Allison (1990) advocates using the change score modeling approach, which studies (see Meier, 2003) similar to mine have also used. For this analysis, the difference between friends' religiosity at the two time points are subtracted and regressed on whether virgins at T1 had sex by T2, using the following equation:

$$\Delta FR_{t2-t1} = B_0 + B_1(\text{Sex}) + r,$$

where

ΔFR_{t2-t1} = Change in friends' religiosity from time 1 to time2

Sex = First Sex at Time 2

r = error

The coefficient for sex is the effect of first sex on a change in friends' religiosity relative to the change experienced by teens who didn't have sex.

About a year passed between the two waves of data collection, which should produce conservative model estimates. The short recall window should minimize recall error associated with duration from the event, and the possibility of violating temporal stability assumptions. Add Health respondents were chosen from selected schools, and thus sample observations are not independent within schools. I, therefore, run my analyses in Stata 7.0 with standard errors adjusted for survey sample design.

SOCIALIZATION

In table 3 I present the results for the analysis of friends' religiosity on the probability of experiencing first sex. The first model shows the effects of demographic and other control

Sex = First Sex at Time 2

FR_{t1} = Friends' religiosity at Time 1

r = error

variables on the odds of adolescents having first sex. This model is the baseline for assessing the influence of individual and friends' religiosity. Consistent with previous research, many of the control variables are significant and in the expected direction. Older adolescents are more likely to have sex than younger teens, and African Americans are more likely to have had first sex than white adolescents. Parental approval of sex, having been in a romantic relation, delinquency participation and having tried smoking and/or drinking are positively associated with first sex. Better grades and living with two parents are negatively associated with first sex. None of the religious affiliation variables are significantly related to first sex, at the .05 level. Because all major religions have proscriptions about premarital sex, this finding is not surprising.

In the second and third models I examine individual private and public religiosity separately to see whether they have a unique influence on first sex. Surprisingly, private religiosity is not significantly related to first sex. When I included all the control variables, except whether adolescents had tried smoking and/or drinking, private religiosity was significant and positively related to first sex (model not shown). This finding suggests that private religiosity may be measuring, in part, general personal inhibitions against behaviors that deviate from religious norms.

Private religiosity is not significantly related to first sex, but individual public religiosity is significant and negative. For every increase in individual public religiosity, the odds of first sex between 1995 and 1996 decrease by 16%. When individual public religiosity is included in the model, the control variables change little from those in the baseline model. To determine whether the inclusion of individual public religiosity improves the overall model fit, I use a Chi-square distribution to look up the significance of the difference between the baseline model and this model, after multiplying their corresponding log likelihoods by -2, $((-536.68 * -2) - (-535.38 * -$

2)=2.6). Although individual public religiosity is significantly related to first sex, the inclusion of this variable does not significantly improve the overall model fit, even at the .10 level.²³ In this analysis (model not shown), I tested for the interaction between gender and personal religiosity, finding that it is not significant.

Because they do not improve the overall model fit, private and public individual religiosity are excluded in the final model where I examine the influence of friends' private religiosity. Model 4 shows that friends' private religiosity is negative and significantly related to first sex. For every increase in friends' private religiosity, the odds of having first sex between 1995 and 1996 decrease by 22%. Unlike individual public religiosity, friends' private religiosity significantly increases the overall model fit at the .05 level $((-536.68*-2)-(-534.60*-2)=4.2)$.²⁴ As the difference in log likelihoods suggested, the coefficient for individual public religiosity when included with friends' private religiosity is no longer significant, even at the .10 level (model not shown). Other variables in this model change little from the baseline model. The significance of the coefficient and improvement in model fit with the inclusion of friends' private religiosity suggests that friends' private religiosity influences teens' first sex.

Before examining selection effects, it is useful to gauge the strength of friends' private religiosity relative to other variables in the model. By multiplying logged coefficients by their standard deviations, I can compare the size of friends' private religiosity to other variables in the model (Pampel 2000:33). Applying this rule to model 4 in table 3 I find that friends' private religiosity $(-0.08=-0.09*0.88)$ is a stronger predictor than parental approval of sex $(0.07=0.10*0.64)$. It is similar in magnitude to delinquency participation and grades. And it is

²³ The critical value in a chi-square distribution with 1 degree of freedom at the .10 level is >2.71.

²⁴ The critical value in a chi-square distribution with 1 degree of freedom at the .05 level is > 3.84.

smaller than having been in a dating relation, tried smoking and/or drinking, age, Black, and living with two parents.

SELECTION

In table 4 I examine selection effects by gauging the influence of having had first sex between 1995 and 1996 on a change in friends' religiosity during this same period. The first model is the baseline against which the influence of key variables can be examined. Only a few control variables are significant. Other race and delinquency participation are positively related to a change in friends' religiosity. Tried smoking and/or drinking and no religion are negatively associated with it. When individual religiosity is included in models 3 and 4, the significance of no religion is eliminated. Teens who have tried either smoking and/or drinking are more likely to switch to a less religious friendship group. Because smoking and drinking are negatively correlated with individual religiosity, then teens who participate in these behaviors should not only be less religious, but also have friends with similar levels of religiosity. Less clear is why delinquency participation is positively related with a change in friends' religiosity.

In the second model I include the key independent variable, had sex. It is significant and in the expected negative direction. In contrast to virgins, individuals who had sex are more likely to have less religious friends. Additionally, the private religiosity of virgins' friends appears to have increased between 1995 and 1996. When the sex variable is included in the model the r-squared increases by over a third, and relative to other variables in the model, first sex is explaining the most variance.

In models 3 and 4 I include individual public and private religiosity. Neither is significantly related to a change in friends' religiosity. Likewise, neither variable appears to mediate the relation between first sex and a change in friends' private religiosity, which is

consistent with Meier's (2003) research finding that having first sex is not significantly related to a later change in individual religiosity. As in the socialization analysis, the interaction between gender and personal religiosity was not significant.

In figure 1 I visually display the predicted change in friends' private religiosity by virginity status. While zero indicates no change in friends' private religiosity between 1995 and 1996, virgins experienced an increase of .08 in their friends' private religiosity. Conversely, non-virgins had a .11 unit decrease in friends' private religiosity.

The coefficient for had sex in model 2 of table 4 is significant, suggesting that friends' private religiosity differs for virgins and non-virgins. However, this result does not tell us whether friends' private religiosity differs significantly from zero (or no change in friends' private religiosity) for the two groups. I am able to determine that they differ significantly from zero at the .001 level and in the predicted direction by getting the predicted values of change in friends' religiosity for the two different groups. I then used a t-test to determine that the predicted change differs significantly from zero.

Discussion and Conclusion

A number of researchers (Treboux, 1990; DiBlasio and Benda, 1990; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994; Maxwell, 2001) have emphasized the influence of friends, and several explanations have been offered for how peers affect teens. Although my study does not isolate the specific mechanism, my findings support research on friendship influences. Specifically, I found that friends' religiosity directly influences first sex, rather than working through personal religiosity. Indeed, personal religiosity was minimally related to virginity loss. This relation suggests that friends have an influence on first sex through social control processes, limited opportunities, and identification with premarital sex proscriptions.

Because so many researchers (Rohrbaugh and Jessor, 1975; Thornton and Camburn, 1989; Sheeran, 1993; Rostosky et al., 2003; Meier, 2003; Lefkowitz, Gillen, and Shearer, 2004; Adamczyk and Felson, 2005) have found a significant relation between first sex and personal religiosity, my finding that individual religiosity was minimally related to virginity loss is surprising. When they examine the religion and first sex relation, however, social scientists typically do not include measures of behaviors, like underage drinking or smoking. When I included all variables, except drinking and/or smoking, both private and public religiosity were significant at the .05 level and positively related to first sex. This finding suggests that individual religiosity may be measuring, in part, personal inhibitions against behaviors that deviate from religious norms.

In their study of religion and deviance, Rohrbaugh and Jessor (1975) posit that the salient characteristic of the religious personality is general conventionality: “a relative acceptance of social institutions as worth conserving as they are, a set of values that sustain conformity and eschew self-assertion and autonomy...” (151). Smoking and/or drinking may be behaviors in which adolescents with strong internal prohibitions simply do not participate. Because these behaviors are correlated with sex, controlling for them, to some extent, also accounts for the influence of personal religiosity.

To adequately assess the existence of friendship group norms, information from friends is needed. Some symbolic interactionists (Cooley, 1902; Thomas and Thomas, 1928; Mead, 1934) have argued that perceptions of friends may be more important for understanding individuals' behaviors, than friends' actual behaviors and beliefs. For example, Cooley (1902) uses the concept of looking-glass-self to explain that people create an identity, present it to the world, and then adjust it in response to the perceived reaction of others. Although perceptions may help us

understand teens' behaviors, they should not be used to assess friends' normative influences, as the perceptions may be unreflective of group norms. Nevertheless, several studies (Treboux and Busch-Rossnagel, 1990; DiBlasio and Benda, 1990; Benda and DiBlasio, 1994; DiBlasio and Benda, 1994) have used perceptions to assess socializing or social control influences. Because I use friend reports, this study significantly improves on past research that has assessed normative influences.

In addition to perceptions, researchers (Treboux and Busch-Rossnagel, 1990; DiBlasio and Benda, 1990; Benda and DiBlasio, 1993, Thornberry et al., 1994; DiBlasio and Benda, 1994) often use cross-sectional data to assess the relation between teens and their friends. With cross-sectional data, however, we do not know whether peer influences precede the behavior under examination. Likewise, data at more than one time point is necessary to examine selection effects. By using longitudinal data to establish the correct causal ordering and testing whether teens change to less religious friendship groups after having sex, my study improves on previous research examining friendship groups.

In contrast to the friends' socializing perspective, researchers have given less attention to peer selection, deselection, and rejection processes. Nevertheless, when researchers find similarities between individuals and their friends using cross-sectional data, any of these processes may be working. I found that when adolescents have first sex their friendship group changes to one that is less religious. Likewise, for teens who maintain virginity, the level of religiosity within their friendship group increased between the two time periods. This finding suggests that in the process of non-virgins connecting with less religious friends, teens who are still virgins may sort into relations with adolescents who are more religious.

Although selection, de-selection, or peer rejection are clearly involved in the relation between friends' religiosity and first sex, less apparent is which process produces the change. Previous research suggests that deselection and peer rejection either do not add to our understanding of group homogeneity (Billy and Udry, 1985; Fisher and Bauman, 1988) or contribute minimally and conditionally (Ennett and Bauman, 1994). These studies suggest that selection may be the primary process, nevertheless, I was unable to test for this. Teens may prefer friends whose religious beliefs are consistent with their sexual behaviors. However, they may not have much choice. Adolescents who either have sex or choose to wait may be ostracized by their friendship group and forced to develop new relations. In this case, sorting, rather than selection may be the appropriate term to describe the development of adolescents' friendships. Amongst teenagers, gossip may be particularly effective in establishing norms and sanctioning teens who deviate from group standards (Coleman, 1990). Likewise, if the religious parents of religious teens discover the sexual behaviors of their children's friends, they may limit their interaction. Because proximity is important for interpersonal attraction, less contact could push teens to find other friends (Huston and Levinger, 1978).

Finally, my findings suggest that religion should be studied as a group characteristic. Recent empirical work in the sociology of religion has found support for the Durkheimian idea that religious contexts influence moral standards over and above individual religiosity (Stark, Doyle, and Kent, 1980; Stark, Kent, and Doyle, 1982; Bainbridge, 1989; Pettersson, 1991; Stark, 1996; Jelen, O'Donnell, and Wilcox, 1998; Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Moore and Vanneman, 2003; Regnerus, 2003; Finke and Adamczyk, 2005). In this study, I found that the religiosity of other people, such as friends, appears to be an important organizing element of groups. Likewise, I found that the influence of religious friends remained, even after

several other variables were included. Indeed, in contrast to friends' religiosity, personal religiosity did not significantly improve the overall fit of the models examined. These findings give strong support to the idea that when examining its constraining influence, religion should be understood as a group property.

Table 4.1
Description of Variables Included in the Analysis

Key Variables	Description
Had sex	Dummy variable indicating whether or not the respondent “ever had sexual intercourse? When we say sexual intercourse, we mean when a male inserts his penis into a female’s vagina.”
Friends’ private religiosity	Mean private religiosity of friends who were nominated by respondent
Change in friends’ private religiosity	Change in mean friends’ private religiosity between W1 and W2
Individual Religion Measures	
Individual public religiosity	Mean of two standardized measures from respondent: church attendance and religious youth activities
Individual private religiosity	Mean of two standardized measures from respondent: frequency of prayer and subjective religious importance
Religious affiliation	Dummy variables for five gross denominational categories. Reference category is mainline Protestant.
Demographic Variables	
Age	Respondent’s age at time of initial survey
Race	Set of dummy variables. White is the reference category.
Gender	Dummy variable
Additional Variables	
Parental approval of sex	Mean value of available score on four items asked of a parent and the respondent. Items asked of the respondent for each parent: (1) how would your mother feel about you having sex at this time in your life and (2) how would she feel about you having sexual intercourse with someone you knew well and was special to you? Items asked of mother: (1) how much do you disapprove of your child having sexual intercourse at this time, and (2) if it was someone that was special and he or she knew well, you would not mind?
Parents’ education	Mean of mother, father, or parent’s spouse’s education on a 9-point scale, as reported by the respondent and one parent.
Living with two parents	Dummy variable indicating whether respondent lives at home with two parents.
Parental closeness	Mean value of available score for five items: (1) feel close to mother, (2) feel close to father, (3) feel mother cares about you, (4) feel father cares about you, and (5) feel parents care about you?
Romantic relation	Asks respondents if in the past 18 months they have had a special romantic relation with anyone.
Grades	Average of grades available in math, English, science, and history or social studies
Delinquency participation	Mean value of participation in 11 minor delinquency items during the past 12 months
Tried smoking and/or drinking	Mean value of two questions asking whether teens have ever tried smoking (even just 1 or 2 puffs) or drinking (not just a sip or taste of someone else’s drink) more than 2 or 3 times in their life.
Out-of-school nominations	Sum of instances of codes indicating out-of-school nominations.

Table 4.2
Descriptive Statistics for Variables Included in the Analysis
 N=1,077

	Mean	S.D.	Min	Max
Key variables				
Had sex	0.19	0.39	0.00	1.00
Friends' private religiosity	0.12	0.88	-2.63	1.09
Change in friends' private religiosity	0.05	0.81	-3.73	3.39
Demographic variables				
Age	189.68	17.56	152.00	241.00
White	0.67	0.47	0.00	1.00
Hispanic	0.07	0.25	0.00	1.00
Black	0.10	0.31	0.00	1.00
Asian	0.14	0.34	0.00	1.00
Other race	0.02	0.14	0.00	1.00
Female	0.52	0.50	0.00	1.00
Additional variables				
Parental approval of sex	2.20	0.64	1.00	5.00
Parents education	5.01	1.74	0.50	8.00
Living with two parents	0.77	0.42	0.00	1.00
Parental closeness	4.72	0.44	1.67	5.00
Romantic relation	0.41	0.49	0.00	1.00
Grades	2.93	0.74	1.00	4.00
Out nominations	1.01	1.42	0.00	9.00
Delinquency participation	1.19	1.75	0.00	11.00
Tried smoking and/or drinking	0.92	0.84	0.00	2.00
Individual religion measures				
Mainline	0.26	0.44	0.00	1.00
Catholic	0.37	0.48	0.00	1.00
Evangelical	0.21	0.41	0.00	1.00
Other protestant religion	0.04	0.21	0.00	1.00
Other religion	0.03	0.18	0.00	1.00
No religion	0.08	0.26	0.00	1.00
Individual private religiosity	0.13	0.88	-1.99	0.84
Individual public religiosity	0.14	0.89	-1.25	1.24

Table 4.3
Longitudinal Analysis of Friends' Religiosity on the
Probability of Experiencing First Sex between 1995 and 1996
 Exponentiated odds are reported

	Model 1	Model 2	Model 3	Model 4
Demographic variables				
Age	1.02**	1.02**	1.02**	1.02**
Hispanic	1.27	1.32+	1.29	1.37+
Black	2.07*	2.21*	2.14*	2.24*
Asian	0.94	1.00	0.98	1.07
Other race	0.82	0.85	0.81	0.90
Female	0.95	0.97	0.95	0.98
Additional variables				
Parental approval of sex	1.28**	1.26**	1.25**	1.27**
Parents education	0.91	0.91	0.91	0.91
Living with two parents	0.62**	0.62**	0.62**	0.61**
Parental closeness	0.95	0.97	0.96	0.97
Romantic relation	2.89**	2.89**	2.93**	2.89**
Grades	0.76**	0.77**	0.77**	0.78**
Out nominations	0.98	0.98	0.99	0.98
Delinquency participation	1.11**	1.10**	1.11**	1.11**
Tried smoking and/or drinking	1.67**	1.64**	1.64**	1.64**
Religious affiliation				
Catholic	0.92	0.92	0.91	0.91
Evangelical	0.93	0.93	0.98	0.96
Other protestant religion	0.97	0.96	0.96	0.97
Other religion	1.03	0.93	0.96	1.01
No religion	1.33+	0.93	1.07	1.14
Religiosity				
Individual private religiosity		0.84		
Individual public religiosity			0.84*	
Friends' private religiosity				0.82*
Observations	1,270	1,270	1,270	1,270
Pseudo R-squared	0.17	0.17	0.17	0.17
Log likelihood	-536.68	-535.76	-535.38	-534.60

+Significant at 10%; *significant at 5%; ** significant at 1%

Table 4.4
Effects of First Sex on
Subsequent Friends' Religiosity Using Change Scores
 Unstandardized OLS Regression Coefficients

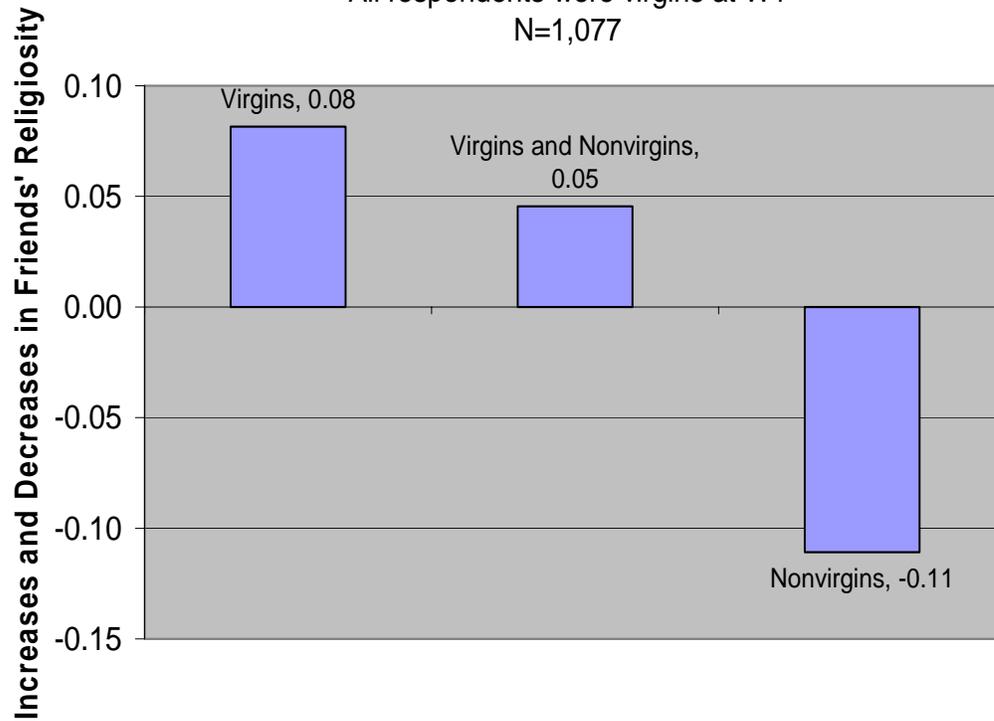
	Model 1	Model 2	Model 3	Model 4
Demographic variables				
Age	0.00	0.00	0.00	0.00
Hispanic	0.02	0.02	0.01	0.02
Black	-0.14	-0.12	-0.13	-0.12
Asian	-0.04	-0.05	-0.05	-0.05
Other race	0.30*	0.29*	0.29*	0.29*
Female	0.06	0.06	0.06	0.06
Additional variables				
Parental approval of sex	0.00	0.01	0.01	0.01
Parents education	0.02	0.02	0.01	0.02
Living with two parents	-0.11	-0.13+	-0.13+	-0.13+
Parental closeness	0.03	0.03	0.03	0.03
Romantic relation	-0.07	-0.04	-0.04	-0.04
Grades	0.00	-0.00	-0.00	-0.00
Out nominations	-0.03	-0.03	-0.03	-0.03
Delinquency participation	0.04*	0.04*	0.04*	0.04*
Tried smoking and/or drinking	-0.04**	-0.02*	-0.02+	-0.02+
Religious affiliation				
Catholic	-0.04	-0.04	-0.04	-0.04
Evangelical	-0.00	-0.00	-0.01	-0.00
Other protestant religion	0.08	0.08	0.08	0.08
Other religion	0.06	0.06	0.08	0.07
No religion	-0.10*	-0.09*	-0.04	-0.06
Had Sex		-0.20*	-0.20*	-0.20*
Individual religiosity				
Individual public religiosity			0.03	
Individual private religiosity				0.01
Constant	-0.31	-0.32	-0.32	-0.31
Observations	1,077	1,077	1,077	1,077
R-squared	0.02	0.03	0.03	0.03

+ Significant at 10%; * significant at 5%; ** significant at 1%

Figure 4.1**Predicted Change in Friends' Religiosity by Virginitly Status at W2**

All respondents were virgins at W1

N=1,077



^a 0.00 = No change in friends' religiosity between W1 and W2

^b The changes in friends' religiosity by virginity status (nonvirgins vs. virgins) differ significantly from zero (no change).

CHAPTER 5- CONCLUSION

I began this project with an interest in examining the simultaneous relation between three overlapping religious contexts and teens' risky behaviors. In the course of this research, I tackled a number of important theoretical and methodological issues related to religion, adolescence, and risky behaviors. Below I summarize my contributions. As with any study, my research has led to additional questions and there are some important limitations that future work should try to address. In the latter part of this chapter, I discuss these issues.

Rigorously Theorizing and Examining Multiple Contexts

In my research on first sex, I found that both school and friendship group religiosity had independent relations. These findings suggest that one influence is not reducible to the other. Indeed, when I included school religiosity in my analysis, the coefficient for the association between friends and first sex changed minimally. This finding makes an important contribution to how we theorize and examine contexts because it suggests that larger contexts may have influences that cannot be reduced to more proximate and intimate contexts like friendship groups. On the other hand, I found that state religiosity could be explained with friends' and school religiosity, which shows the importance of accounting for these other contexts.

My research theorized school and friendship influences and empirically confirmed their independent association by accounting for more proximate contexts, which improves on previous studies. Much contextual research has mismatched data and theory. Influences would be theorized at one level (e.g. friendship groups), but tested at another (e.g. schools) (for example see Stark, 1996). Likewise, when more macro contexts were hypothesized and empirically examined, researchers have not known the extent of overlap between effects at different levels. When more macro relations were found, they couldn't be sure if more proximate associations

were included in the finding.²⁵ My research improves on past studies by specifically theorizing for each level of context and then rigorously testing the simultaneous association between teens' risky behaviors and three overlapping contexts.

Religious Contextual Effects for First Sex versus Delinquency

I found that friends and schoolmates' religiosity is associated with the first sex of highly religious and secular adolescents. However, only the delinquency of more religious teens is related to friends' religiosity. These findings show that religious contextual associations differ according to the behavior being examined.

Social scientists have hypothesized that the influence of religious contexts may depend on whether the behavior under examination has legal code support. However, they have not tested for the influence of multiple religious contexts. Thus, we haven't known whether the context or the behavior was responsible for various associations. My research shows that after accounting for more inclusive contexts, religious friends are differentially associated with delinquency and first sex. Whereas religious friends are directly related to first sex, only the delinquency of teens who are somewhat religious is associated with friends' religiosity. With over 80% of Americans adhering to Christianity and all of the world's religions proscribing premarital sex, religion clearly has a powerful influence on behaviors that are specifically within its domain, even for people who aren't particularly religious (General Social Survey, 2002).

²⁵ A good example of this can be found in the research of Moore and Vanneman (2003), who suggest that one way state religiosity may influence gender attitudes is through day-to-day interaction with coworkers and neighbors, while another is through major institutions such as the media, education and politics (Moore and Vanneman, 2003, p. 119). The former process suggests work place or neighborhood effects, while the latter suggests state (e.g. laws and public education standards) or regional level (media outlets) influences.

Attitude-Behavior Consistency

In my examination of delinquency I found that religious friends increase consistency between personal religiosity and delinquency. Aside from international research²⁶, every American contextual study that examines illegal or delinquent behaviors finds that religious contexts increase personal religiosity and behavior consistency (Stark, Doyle, and Kent, 1980; Stark, Kent, and Doyle, 1982; Stark, 1996; Regnerus, 2004). However, researchers have not tested multiple contexts, and thus we have not known which context is most likely to increase consistency between religious attitudes and behaviors. My research shows that for teens' delinquency, friends' religiosity increases consistency. Conversely, neither schoolmates' religiosity nor living in the Bible Belt increase consistency between individual religiosity and delinquency.

How Friends' Religiosity Is Related to First Sex

My research also found that religious friends are associated with first sex through feelings of guilt, rather than through personal religiosity, social control processes, or other socializing influences. Although guilt clearly mediated the link between friends' religiosity and first sex, it did not fully explain it, suggesting that sex opportunities may also account for the relation. To test for friends' religiosity, I used data taken directly from respondents' friends, which improves on previous studies relying on perceptions of attitudes and behaviors.

²⁶ A number of international studies (Jelen, O'Donnell, and Wilcox, 1998; Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Adamczyk and Finke, 2005) find that national religiosity enhances individual religiosity to influence attitudes and behaviors that are not illegal. One reason for this is that levels of religiosity and cultural norms vary considerably across nations. However, the United States is generally very religious, the influence of which has an effect on highly religious and secular people. When religion is not as prevalent, differences at the national level are more likely to be found.

My study is one of the first to hypothesize and test the process through which religious contexts, specifically friendship groups, are associated with sex and delinquency. A number of studies have found support for the influence of religious contexts (Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Moore and Vanneman, 2003; Regnerus, 2004; Finke and Adamczyk, 2005; Adamczyk and Felson, 2005). Likewise, much research has examined the link between friends and individuals' behaviors finding that they are related (Billy, Rodgers, and Udry; 1984; DiBlasio and Benda, 1990; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994; Haynie 2001; 2002). However, no one has specifically examined how religious contexts, like religious friends, relate to teens' behaviors. Because so many Americans actively practice and adhere to religious beliefs, understanding the process through which friends' religiosity are related to them, regardless of personal religiosity, is important.

Because I use data from friends to examine how they are associated with first sex, I can accurately describe my findings as friendship group associations, which improves on studies relying on perceptions. Much of the research examining religious friendship effects uses perceptions of friends' attitudes and behaviors (DiBlasio and Benda, 1990; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994). Yet, several studies (Ross et al., 1977; Jussim and Osgood, 1989; Bauman and Ennett, 1994) have found that people overestimate attitude and behavioral similarity with their friends. This research suggests that unless we use information from friends, we cannot maintain group normative influences. Rather, correlations may result from a process like projection. Additionally, researchers tend to find higher correlations when they use perceptions of friends' behaviors. By using information from friends, my study more rigorously tests friendship group associations.

Religious Friends versus Romantic Partner Influences

In addition to friends' religiosity, I also tested for an association between first sex and romantic partners' religiosity and found that they are not significantly related to first sex.

Although it is rarely done, social scientists who specialize in research on adolescents strongly advocate that we distinguish between different types of peer relations, as their effect may vary (Savin-Williams and Berndt, 1990; Giordano, 2003). My research confirms this viewpoint.

While religious friends had a significant and robust association with first sex, the religiosity of romantic partners –people with whom adolescents would presumably have sex – was unrelated to first sex. Because so little attention has been given to understanding different peer relations, my research makes an important contribution to what we currently know about the peer and first sex association.

Selection versus Socialization Influences

Using longitudinal data, my research found that both socialization and selection (deselection/ peer rejection) influences are involved in the link between religious friends and first sex. Researchers (DiBlasio and Benda, 1990; DiBlasio and Benda, 1994; Benda and DiBlasio, 1994) often assume that when there is a relation between an individual behavior and group attribute (e.g. friends' religiosity) socialization processes are involved. Of course when a link is discovered, particularly with cross-sectional data, either socialization or selection may be at work. Adolescents may be influenced by their friends, but they may also sort into groups on the basis of preexisting similarities. To adequately assess the direction of the relation between peer attributes and individual behaviors, we need data at two points. My research improves on past studies and our understanding of the link between individuals and their friends by using

longitudinal data to examine the mechanisms producing homophily between religious friends and teens' sexual behaviors

LIMITATIONS AND FUTURE RESEARCH

My dissertation has made some important contributions to research on religious contextual influences. However, there are limitations with my study that extend more generally to problems with research in this area. Macro-level religious influences could be better assessed using international data, rather than state-level data. For understanding school religiosity, I did not examine the process through which they have an influence or test for socialization and selection processes at the school level. Finally, I did not, like other research in the area, sufficiently examine the role of opportunity for the relation between religious peers and first sex. In addition to addressing these limitations, future research should give more consideration to friends' sexual behaviors, parents' religiosity, and test for similar relations in older age-groups. Below I discuss these issues and offer suggestions on how to address them.

Data Problems with Macro Contexts

At the state-level, I hypothesized that religion would inform laws, media, and the area's topography, resulting in a regional religious effect on first sex. Once I accounted for more proximate contexts, however, I did not find any state religious effects. I may not have found an influence because state laws do not differ tremendously and many pro-choice adolescents interested in sex may not know how their state's abortion laws could make terminating a pregnancy difficult. I examined state religiosity because I wanted to investigate a macro religious influence and state-level data was available. I would have preferred to examine country differences, where legal and media influences are more pronounced and researchers have found significant national religious influences (Kelley and De Graaf, 1997; Jelen, O'Donnell, and

Wilcox, 1998; Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Finke and Adameczyk, 2005). However, there are currently no international datasets that also include information from friends and schoolmates.

The data problem I encountered is not unique to my study. Researchers who examine contextual influences have long had trouble determining and testing which contexts are most useful for understanding group or area effects and most likely to produce significant results. Within criminology, neighborhoods have long been used to study individuals' attitudes and behaviors (Sampson, 1988; Sampson, 1991; Small and Luster, 1994; Upchurch et al., 1999; Browning and Olinger-Wilbon, 2003). Before changes in transportation and communication, neighborhoods, as a unit of analysis, seemed appropriate. Census data has supported this perspective by dividing areas into tracts that can be distinguished along neighborhood dimensions. With mass transportation and changes in communication (e.g. internet), however, other units may be more meaningful and result in stronger effects. Teitler and Weiss's (2000) study of neighborhood and school influences, which is one of the few on multiple contextual influences, found that neighborhoods were important for first sex only to the extent that they determined the schools adolescents attended. Their findings suggest that although neighborhoods are important, school-level effects may be more central for understanding teens' sexual behaviors.

My research shares the same data problems that other social scientists have encountered. National probability surveys make it difficult to examine contextual influences, because there often are not enough people in a certain context to estimate effects (Liska, 1990). Likewise, information taken from people's friends is difficult to obtain because it differs by respondent. With school saturation sampling and the linking of friends' ids, Add Health investigators have

made a major data contribution to understanding contextual effects at the school and friendship levels. Nevertheless, our understanding of contexts would be improved with saturation sampling of work places, information about adults' peer relations, and more data and research on which contexts are most relevant for understanding people's behaviors.

How Schoolmates' Religiosity Influence First Sex

To better understand the process through which schoolmates influence first sex, future research should examine whether school religiosity affects first sex through social control processes or attitudes about sex. My research found that although it was related to first sex, schoolmates' religiosity did not substantially mediate the personal religiosity and first sex link. However, I did not examine any of the other processes through which religious schoolmates may have an effect. We would further our current understanding of contextual influences by understanding better how schoolmates are related to first sex. My analysis of friends' religiosity in the third chapter offers a template for how this research could proceed.

Selection and Socialization by Schoolmates

Future research should also examine selection processes at the school level. In contrast to other contexts, teens have considerably more choice over their friends. However, adolescents and their parents may still have a lot of autonomy in choosing their school, particularly if they live in large metropolitan areas. I found a relation between schoolmates' religiosity and first sex using cross-sectional data, which suggests that either socialization or selection processes may be working. I posited that religious schoolmates may influence first sex. However, teens could also select, deselect or be rejected by their schoolmates. If teens' precocious sex becomes known, they may not only leave their more religious friendship group, but also switch to a less religious school to avoid stigma. School administrators might also encourage them to leave, upon hearing

about their sexual activities. Likewise, the parents of adolescents who have sex early may change their school as a strategy to keep them from having sex in the future. Research on school selection processes would improve our understanding of the link between religious schoolmates and adolescents' behaviors.

Measuring Sex Opportunity

Researchers would improve their understanding of the process through which religious friends and schoolmates are associated with first sex by finding other ways to specifically gauge sex opportunities. When I examined the processes through which friends' religiosity was related to first sex, I found that guilt about having sex, in part, mediated the link. However, it did not fully explain it. One process that may also account for the relation is the limited opportunities for sex that come with having religious friends. Sex is an act that must occur with another person. Regardless of personal religiosity, if teens are not able to select partners from their friendship group, then they will have fewer opportunities for sex than teens with more secular friends.

Research on first sex and personal religiosity has noted the possible influence of sex opportunities (Rostosky, Regnerus, and Wright, 2003; Meier, 2003). These studies account for sex opportunity with a measure of whether teens have been in a romantic relation. Although usually significant, no one has specifically examined whether having a boyfriend or girlfriend mediates the relation between first sex and personal religiosity. At the very least, we know it does not fully account for it, which my research also confirmed.

Although a boyfriend or girlfriend may provide sex opportunities, many adolescents may not have first sex with them. Indeed, in her analysis of 1,320 interviews, Giordano et al. (2003) found that one-third of teens had sex with someone they considered a friend, rather than a dating

partner, and another third had sex with a previous boyfriend or girlfriend. Future research on virginity loss would really benefit from better techniques for measuring sex opportunity.

Friends' Sexual Behaviors

I did not directly test the influence of friends' sexual behaviors on virginity loss, which future studies should also investigate. Research (Billy, Rodgers, and Udry 1984; Billy and Udry, 1985) has shown that sexual experience is one dimension on which teens sort into friendship groups. Likewise, researchers (Sheeran et al., 1993; Meier, 2003; Rostosky, Regnerus and Wright, 2003; Lefkowitz, 2004) have found that religious adolescents are more likely to delay their sexual debut than more secular teens. From these findings, I hypothesized that friends' religiosity and first sex would be linked. However, the influence of friends' sexual behaviors, versus their religious beliefs on first sex is not clear. Despite friends' sexual behaviors, friends' religious beliefs may still influence first sex. Likewise, when friends' sexual behaviors and religious beliefs are consistent, their combined impact may have an even greater effect on first sex, than the single influence of friends' religiosity. Path analysis that could account for moderation and estimate dichotomous variables would aid our understanding of the course through which friends' religiosity influences first sex.²⁷

Parents' Religiosity

One strength of my research is that I examined two different peer contexts (romantic partners and friends). Nevertheless, I did not specifically address one of the most important

²⁷ My research focused on first sex, which makes path analysis very difficult because the variable of interest is dichotomous. But sex behaviors more generally could be measured with a categorical or continuous variable. Future research might look at number of sex partners and types of sexual activities, and age at first sex.

contexts –parents’ religiosity, which future research should investigate. A plethora of studies (see review in Sherkat and Ellison, 1999) have found a link between individual and family religiosity. Indeed, the relation has been described as religious inheritance, where religion is transmitted in the same way that individuals inherit social status (Myers, 1996). Previous studies (Meier, 2003, Pearce and Haynie, 2004) examining this link suggest that parents’ religiosity works through individual religiosity to influence behaviors. Thus, for my study, parents’ religiosity may not have had much of a direct influence on first sex.

Nevertheless, parents’ religiosity may mediate the relation between friends’ religiosity and virginity loss. Highly religious parents may try to isolate their children from anti-religion influences, like secular friends. By limiting contact with less religious people and encouraging relations with religious teens, parents could indirectly influence their children’s sexual behaviors. Indeed, in his study of network closure between parents, teens, teens’ friends, the friends’ parents, and teachers, Smith (2003) found that religious participation increased network closure amongst these individuals. He suggested that interaction in church-related activities could lead to more effective monitoring, supervision, support for parents in their child rearing techniques, and communication with other parents about expectations and behaviors. Future research might specifically examine the influence of parents’ religiosity for the link between first sex and religious peers.

Adolescents versus Adults

Finally, additional research is needed to determine the extent to which my findings can be generalized to older age groups. Adolescents are unique from other people in the population. They are required to attend school, still live with their parents, are undergoing major identity shifts, and have not had experiences that come with age. Likewise, the behaviors I studied are

largely exclusive to teenagers. The overwhelming majority of adults have had first sex, and in contrast to adolescents, few adults participate in the illegal activities (e.g. vandalism, joy riding, etc.) I examined.

Research (Jelen, O'Donnell, and Wilcox, 1998; Scheepers, Te Grotenhuis, and Van Der Slik, 2002; Finke and Adamczyk, 2005) on adults shows that personal religiosity has a significant influence on behaviors like cheating on taxes, avoiding a fare, and attitudes about abortion and extramarital relations. However, to date no study has examined the influence of adult religious friends. Indeed, I do not know of any project that has data on adults' friends. However, religious community and affiliation studies suggest that the religiosity of peers would likely influence adults' behaviors (Bock, Beeghley, and Mixon, 1983; Cochran and Beeghley, 1991; Grasmick, Kinsey, and Cochran, 1991; Welch, Tittle, and Petee, 1991).

Religion has often been thought of and studied as an individual characteristic, but we do not, of course, live in isolation. Other people's beliefs and level of religiosity are related to our own religiosity and behaviors. By characterizing religion as a group characteristic, this study examined the relation between multiple religious contexts and adolescents' risky behaviors. I found that on a number of different dimensions, group religiosity is important for understanding teenagers' actions. Relative to personal religiosity, religious context is just as valuable for understanding behaviors, which makes salient the strength of developing and testing theories that see religion as a group property.

References

- Ackerman, Jeffrey M. 2003. *Delinquents and Their Friends: The Role of Peer Effects and Self-Selection*. Dissertation at the Pennsylvania State University: State College, PA
- Adamczyk, Amy and Jacob Felson, 2005. "Running with the Right Crowd: Peer Religiosity and Sexual Intercourse," *Social Science Research*, T.B.A.
- Akers, Ronald. 1998. *Social Learning and Social Structure: A General Theory of Crime and Deviance*. Northeastern University Press.
- Akers, Ronald. 1985. *Deviant Behavior: A Social Learning Approach*, 3d ed. Belmont, CA: Wadsworth.
- Akers, Ronald L., Marvin D. Krohn, Lon Lanza-Kaduce, and Marcia Radosevich. 1979. "Social Learning and Deviant Behavior: A Specific Test of a General Theory." *American Sociological Review* 44: 635-655.
- Singh, S. and J.E. Darroch. 1999. Trends in Sexual Activity among Adolescent American Women: 1982- 1995, *Family Planning Perspectives* 31: 211- 219
- Albrecht, Stan L., Bruce A. Chadwick, and David S. Alcorn. 1977. "Religiosity and Deviance: Application of an Attitude-Behavior Contingent Consistency Model." *Journal for the Scientific Study of Religion* 16: 263-274.
- Allison, Paul D. 1990. "Change Scores as Dependent Variables in Regression Analysis." Pp. 93-114 in *Sociological Methodology*, vol. 20, edited by C. C. Clogg. Oxford: Basil Blackwell.
- Baier, Colin J. and Bradley R. E. Wright. 2001. "'If You Love Me, Keep My Commandments': A Meta-Analysis of the Effect of Religion on Crime." *Journal of Research in Crime and Delinquency* 38: 3-21.
- Bainbridge, William Sims. 1989. "The Religious Ecology of Deviance." *American Sociological Review* 54: 288-295.
- Bainbridge, William Sims and Rodney Stark. 1981. "The 'consciousness Reformation' Reconsidered", *Journal for the Scientific Study of Religion*, 20: 1- 16.
- Bauman, K. E., & Ennett, S. T. 1994. "Peer Influence on Adolescent Drug Use. *American Psychologist* 49:820-822.
- Benda, Brent B. 1997. "An Examination Of A Reciprocal Relationship Between Religiosity And Different Forms Of Delinquency Within A Theoretical Model." *Journal of Research on Crime and Delinquency* 34: 163-186.

- Benda, Brent B. 1995. "The Effect Of Religion On Adolescent Delinquency Revisited." *Journal of Research in Crime and Delinquency* 32: 446-466.
- Benda, Brent B. and Frederick A. DiBlasio. 1994. "An Integration of Theory: Adolescent Sexual Contacts." *Journal of Youth and Adolescence* 23; 403-420.
- Billy, John O.G. and Richard Udry. 1985. "Patterns of Adolescent Friendship and Effects on Sexual Behavior." *Social Psychology Quarterly* 48: 27-41.
- Billy, John O.G., Joseph Lee Rodgers, and Richard Udry. 1984. "Adolescent Sexual Behavior and Friendship Choice." *Social Forces* 62: 653-678.
- Blinn-Pike, L. 1999. "Why Abstinent Adolescents Report They Have Not Had Sex: Understanding Sexually Resilient Youth." *Family Relations* 48: 295-301.
- Bock, E. W., Beeghley, L., & Mixon, A. J. 1983. "Religion, Socioeconomic Status, and Sexual Morality: An Application of Reference Group Theory." *Sociological Quarterly*, 24, 545 - 559.
- Bollen, K.A. 1989. *Structural Equations with Latent Variables*. New York: John Wiley & Sons.
- Breslow, N. E. and Clayton, D. G. 1993. Approximate inference in generalized linear mixed models. *Journal American Statistical Association*, 88, 9-25.
- Brinton, Crane. 1959. *A History of Western Morals*. Paragon House Publishers.
- Bronfenbrenner, Urie and Ann C. Crouter, 1983. "The Evolution of Environmental Models in Developmental Research." In Ed. Paul H. Mussen, *Handbook of Child Psychology* V. 1, 357-414.
- Bronfenbrenner, Urie. 1986. "Ecology of the Family as a Context for Human Development: Research Perspectives." *Developmental Psychology*, 22, 723-742.
- Bronfenbrenner, Urie. (1979). *The Ecology of Human Development*. Cambridge, MA: Harvard University Press.
- Brown, B. B. 1999. "You're Going Out With Who?!": Peer Group Influences On Adolescent Romantic Relationships. In W. Furman, B. B. Brown, & C. Feiring (Eds.). *The Development of Romantic Relationships In Adolescence* (pp. 291-329). Cambridge, UK: Cambridge University Press.
- Browning, Christopher R. and Matisa Olinger-Wilbon. 2003. "Neighborhood Structural Disadvantage, Social Organization, and Number of Short-Term Sexual Partnerships." *Journal of Marriage and the Family* 65(3):730-45.

- Bryk, Anthony S. and Stephen W. Raudenbush 1992. *Hierarchical Linear Models*. Newbury Park, Calif: Sage.
- Bryk, Anthony S., Valerie E. Lee, and Peter B. Holland. 1993. *Catholic Schools and the Common Good*. Harvard University Press: Cambridge, MA.
- Burkett, Steven R. and Mervin White. 1974. "Hellfire and Delinquency: Another Look." *Journal for the Scientific Study of Religion* 13: 455-462.
- Burt, 2001. "Bandwidth and Echo: Trust, Information, and Gossip in Social Networks," in Ed. Alessandra Casella and James E. Rauch. *Networks and Markets: Contributions from Economics and Sociology*. Russell Sage Foundation.
- Carver, Karen, Kara Joyner, and J. Richard Udry. 2003. "National Estimates of Adolescent Romantic Relationships," pp. 23-56 in P. Florsheim (ed.) *Adolescent Romantic Relations and Sexual Behavior: Theory, Research, and Practical Implications*. Mahwah, NJ: Lawrence Erlbaum and Associates.
- Clogg, C.C., Petkova, E., and Haritou, A. 1995. "Statistical Models for Comparing Regression Coefficients Between Models." *American Journal of Sociology* 100:1261-1293.
- Cochran, John K and Ronald L. Akers. 1989. "Beyond Hellfire: An Exploration Of The Variable Effects Of Religiosity On Adolescent Marijuana And Alcohol Use." *Journal of Research in Crime and Delinquency* 26: 198-225.
- Cochran, John K. and Leonard Beeghley. 1991. "The Influence Of Religion On Attitudes Toward Nonmarital Sexuality: A Preliminary Assessment Of Reference Group Theory." *Journal for the Scientific Study of Religion* 30: 45-62.
- Coleman, James. 1986. "Social Theory, Social Research and a Theory of Action." *American Journal of Sociology* 91: 1309-35.
- Coleman, James. 1990. *Foundations of Social Theory*. Harvard University Press
- Collins, Randall. 1988. "The Micro Contribution to Macro Sociology." *Sociological Theory* 6: 242-253.
- Collins, Randall. 1986. "Is 1980's Sociology in the Doldrums?" *American Journal of Sociology* 91: 1336-1355.
- Collins, Randall. 1981. "On the Microfoundations of Macrosociology." *American Journal of Sociology* 86: 984-1014.
- Collins, Randall. 1981. "Micro-Translation as a Theory-Building Strategy." Edited by Karin D. Knorr-Cetina and Aaron V. Cicourel in *Advances in Social Theory and Methodology*:

- Toward an Integration of Micro- and Macro-Sociologies*. Boston: Routledge & Kegan Paul. 81-108.
- Cooley, Charles H. 1902. *Human Nature and the Social Order*. New York: C. Scribner's sons.
- Darling C., J. Davidson and L. Passarello. 1992. "The Mystique Of Sexual Intercourse Among College Youth: The Role Of Partners, Contraceptive Practices, and Psychological Reactions." *Journal of Youth and Adolescence* 21: 97-117.
- Deutsch, Morton and Harold B. Gerard. 1955. "A Study of Normative and Informational Social Influences on individual Judgment." *Journal of Abnormal and Social Psychology* 51: 629-636.
- DiBlasio, Frederick A. and Brent B. Benda. 1990. "Adolescent Sexual Behavior: Multivariate Analysis of a Social Learning Model." *Journal of Adolescent Research* 5: 449-466.
- DiBlasio, Frederick A. and Brent B. Benda 1994. "A Conceptual Model of Sexually Active Peer Association." *Youth and Society* 25: 351-367.
- Durkheim, Emile. 1955, 1912. *The Elementary Forms of Religious Life*. New York: The Free Press.
- Durkheim, Emile. 1951. *Suicide*. Glencoe, Il.: Free Press.
- Eder, D., & Enke, J.L. 1991. "The Structure of Gossip: Opportunities and Constraints on Collective Expression Among Adolescents." *American Sociological Review*, 56, 494-508.
- Ellison, Christopher G. and Marc A. Musick. "Southern Intolerance: A Fundamentalist Effect?" *Social Forces* 72: 379-398.
- Ellison, Christopher G., Jeffrey A. Burr, and Patricia L. McCall. 1997. "Religious Homogeneity and Metropolitan Suicide Rates." *Social Forces* 76: 273-299.
- Ellison, Christopher G. and Darren E. Sherkat. 1993. "Obedience and Autonomy: Religion and Parental Values Reconsidered." *Journal for the Scientific Study of Religion* 32: 313-329.
- Ennett, Susan T. and Karl E. Bauman. 1994. "The Contribution of Influence and Selection in Peer Homogeneity." *Journal of Personality and Social Psychology* 67: 653-663.
- Felson, Jacob. 2005. Personal Correspondence on March 22, 2005.
- Felson, Richard B., Alan E. Liska, Scott J. South, and Thomas L. McNulty. 1994. "The Subculture of Violence and Delinquency: Individual vs. School Context Effects." *Social Forces* 73: 155-173.
- Felson, Marcus. 2002. *Crime and Everyday Life*. California: Sage Publications.

- Roger Finke and Amy Adamczyk. 2005. "Explaining Morality: Using International Data to Reestablish the Macro/Micro Link." (unpublished manuscript).
- Fisher, Lynn A. and Karl E. Bauman. 1988. "Influence and Selection in the Friend-Adolescent Relationship: Findings from Studies of Adolescent smoking and Drinking." *Journal of Applied Social Psychology* 18: 289-314.
- Furman W., & Wehner, E.A. 1994. "Romantic Views: Toward a Theory of Adolescent Romantic Relationships." In R. Montemayor, G.R. Adams, & G.P. Gullota (Eds.) *Advances in Adolescent Development, Volume 6, Relationships During Adolescence*, (pp. 168-175). Thousand Oaks, CA: Sage.
- General Social Survey, 2002 (Machine-readable data file). Principal Investigator, James A. Davis; Director and Co-Principal Investigator, Tom W. Smith; Co-Principal Investigator, Peter V. Marsden, NORC ed. Chicago: National Opinion Research Center, producer, 2002; Storrs, CT: The Roper Center for Public Opinion Research, University of Connecticut, distributor. Micro-computer format and codebook prepared and distributed by MicroCase Corporation.
- Grasmick, Harold G., Robert J. Bursik, Jr., and John K. Cochran. 1991. "Render unto Caesar What is Caesar's: Religiosity and Taxpayers' Inclinations to Cheat." *Sociological Quarterly* 32: 251-266.
- Giordano, Peggy C. 2003. "Relationships in Adolescence." *Annual Review of Sociology* 29: 257-281.
- Grasmick, Harold G., Karly Kinsey, and John K. Cochran. 1991. "Denomination, Religiosity And Compliance With The Law: A Study Of Adults." *Journal for the Scientific Study of Religion* 30: 99-107.
- Guggino, J., & Ponzetti, J. 1997. "Gender Differences in Affective Reactions to First Coitus." *Journal of Adolescence*, 20, 189-200.
- Hadaway, C. Kirk, Kirk W. Elifson, and David M. Petersen. 1984. "Religious Involvement and Drug Use among Urban Adolescents." *Journal for the Scientific Study of Religion* 23: 109-128.
- Hallinan, Maureen T. and Nancy B. Tuma. 1978. "Classroom Effects on Change in Children's Friendships." *Sociology of Education* 51: 270-282.
- Hallinan, Maureen T., and Richard A. Williams. 1989. "Interracial Friendship Choices in Secondary Schools." *American Sociological Review* 54:67-78.
- Harris and Associates, 1986. "American Teens Speak: Sex, Myths, TV and Birth Control".

- Haynie, Dana L. 2001. "Delinquent Peers Revisited: Does Network Structure Matter?" *American Journal of Sociology* 106: 1013-1057.
- Haynie, Dana L. and D. Wayne Osgood. (Forthcoming) "Peers and delinquency Reconsidered: How Do Peers Matter for Delinquency?" *Social Forces*.
- Hirschi, Travis. 1969. *Causes of Delinquency*. Berkeley: University of California Press.
- Hoffmann, John P. 2002. "A Contextual Analysis of Differential Association, Social Control, and Strain Theories of Delinquency." *Social Forces* 81: 753-785.
- Holder, David W. *et al.*, 2000. "The Association Between Adolescent Spirituality and Voluntary Sexual Activity." *Journal of Adolescent Health* 26: 295-302.
- Huston, T. L., & Levinger, G. 1978. "Interpersonal Attraction and Relationships." In M. R. Rosenzweig and L. W. Porter (Eds.), *Annual Review of Psychology*, 29.
- Iannaccone, Laurence R. (1994) "Why Strict Churches are Strong." *American Journal of Sociology* 99: 1180-1211
- Iannaccone Laurence R. (1988) "A Formal Model of Church and Sect." *American Journal of Sociology*, 94: supplement, S241-S268
- Iannaccone, Laurence R; Olson, Daniel V A; Stark, Rodney. 1995. "Religious Resources and Church Growth." *Social Forces* 74: 705-731
- Iannotti, Ronald J. and Patricia J. Bush. 1992. "Perceived vs. Actual Friends' Use of Alcohol, Cigarettes, Marijuana, and Cocaine: Which Has the Most Influence?" *Journal of Youth and Adolescence* 21: 375-389.
- Jelen, Ted G., John O'Donnell, and Clyde Wilcox. 1993. "A Contextual Analysis Of Catholicism And Abortion Attitudes In Western Europe." *Sociology of Religion* 54: 375-383.
- Jessor, S. L., & Jessor, R. 1975. "Transition from Virginity to Nonvirginity Among Youth: A Social-Psychological Study Over Time." *Developmental Psychology*, 11, 473-484.
- Johnson, Byron R., Spencer De Li, David B. Larson, and Michael McCullough. 2000. "A Systematic Review of the Religiosity and Delinquency Literature." *Journal of Contemporary Criminal Justice* 16: 32-52.
- Jussim, Lee and D. Wayne Osgood. 1989. "Influence and Similarity Among Friends: An Integrative Model Applied to Incarcerated Adolescents." *Social Psychology Quarterly* 52: 98-112.
- Kandel, Denise B. 1996. "The Parental and Peer Contexts of Adolescent Deviance: An Algebra of Interpersonal Influences." *Journal of Drug Issues* 26: 289-315.

- Kandel, Denise B. 1978. "Homophily, Selection, and Socialization in Adolescent Friendships." *American Journal of Sociology* 84: 427-436.
- Kathan, B. W. 1989. "Prayer and the public schools: The issue in historical perspective and implications for religious education today." *Religious Education* 84(2): 232-48.
- Kelman, Herbert C. 1958. Compliance, Identification, and Internalization: Three Processes of Attitude Change." *Journal of Conflict Resolution* 2: 51-60.
- Kelley, Jonathan and Nan Dirk De Graaf. 1997. "National Context, Parental Socialization, and Religious Belief: Results from 15 Nations." *American Sociological Review* 62: 639-659.
- Knorr-Cetina, Karin D. 1981. "Introduction: The Micro-Sociological Challenge of Macro-Sociology: Towards a Reconstruction of Social Theory and Methodology." Edited by Karin D. Knorr-Cetina and Aaron V. Cicourel in *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies*. Boston: Routledge & Kegan Paul. 1-48.
- Karin D. Knorr-Cetina and Aaron V. Cicourel. 1981. *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies*. Boston: Routledge & Kegan Paul.
- Lammers, Cristina, Marjorie Ireland, Michael Resnick, and Robert Blum. 1999. "Influences on Adolescents' Decision to Postpone Onset of Sexual Intercourse: A Survival Analysis of Virginity Among Youths Aged 13 to 18 Years." *Journal of Adolescent Health* 26: 42-48.
- Lazarsfeld, Paul and Robert K. Merton. 1954. "Friendship as a Social Process." Pp. 18-66 in *Freedom and Control in Modern Society*, edited by M. Berger, T. Abel, and C. H. Page. Princeton, NJ: Van Nostrand.
- Lefkowitz, E. S., Gillen, M. M., Shearer, C. L., & Boone, T. L. 2004. Religiosity, Sexual Behaviors, and Sexual Attitudes during Emerging Adulthood. *Journal of Sex Research*, 41.
- Lefkowitz, E. S., Boone, T. L., & Shearer, C. L. 2004. Communication with Best Friends about Sex-Related Topics during Emerging Adulthood. *Journal of Youth and Adolescence*, 33, 339-351.
- Liska, Allen E. 1990. "The Significance of Aggregate Dependent Variables and Contextual Independent Variables for Linking Macro and Micro Theories." *Sociology Psychology Quarterly* 53:292-301.
- Little, Craig B. and Andrea Rankin. 2001. "Why Do They Start It? Explaining Reported Early-Teen Sexual Activity." *Sociological Forum* 16: 703-729.

- Malinowski, Bronislaw. 1935. *Coral Gardens and Their Magic: A Study of the Methods of Tilling the Soil and of Agricultural Rites in the Trobriand Islands*. London: Allen & Unwin.
- Maxwell, Kimberly A., 2002. "Friends: The Role of Peer Influence across Adolescent Risk Behaviors." *Journal of Youth and Adolescence* 31: 267-277.
- McPherson, J. Miller, Lynn Smith-Lovin, and James M. Cook, 2001. "Birds of a feather: Homophily in Social Networks." *Annual Review of Sociology* 27: 415-444.
- Mead, George H. 1934. *Mind, Self, and Society from the Standpoint of a Social Behaviorist*. Chicago: University of Chicago Press.
- Meier, Ann M. 2003. "Adolescents' Transition to First Intercourse, Religiosity and Attitudes about Sex." *Social Forces* 81: 1031-1052.
- Merton, D. E. 1996. "Going-with: The Role of Social Form in Early Romance." *Journal of Contemporary Ethnography* 24: 462-484.
- Miller, B. C., & Bingham, C. R. 1989. Family Configuration in Relation to the Sexual Behavior of Female Adolescents. *Journal of Marriage and the Family*, 51, 499-506.
- Moore, Laura M. and Reeve Vanneman. 2003. "Context Matters: Effects of the Proportion Fundamentalists on Gender Attitudes." *Social Forces* 82: 115-139.
- Morton, T L & Douglas, M A. 1981. "Growth of Relationships." In Eds. Duck, S & Gilmour, R. *Personal Relationships 2: Studying Personal Relationships*. Academic Press: London.
- Myers, Scott M. 1996. "An Interactive Model of Religiosity Inheritance: The Importance of Family Context." *American Sociological Review* 61: 858+.
- Osgood, D. Wayne and Jeff M. Chambers. 2000. "Social Disorganization Outside the Metropolis: An Analysis of Rural Youth Violence." *Criminology* 38: 81-115.
- Osgood, D. Wayne, Janet K. Wilson, Patrick M. O'Malley, Jerald G. Bachman, and Lloyd D. Johnston. 1996. "Routine Activities and Individual Deviant Behavior." *American Sociological Review* 61: 653-655.
- Pampel, Fred C. (2000). *Logistic Regression: A Primer*. Thousand Oaks: Sage.
- Parks, Malcolm R., Charlotte M. Stan, and Leona L. Eggert. 1983. "Romantic Involvement and Social Network Involvement." *Social Psychology Quarterly* 83:116-31.
- Pearce, Lisa D. and Dana L. Haynie. 2004. "Intergenerational Religious Dynamics and Adolescent Delinquency," *Social Forces* 82: 1553-1572

- Pescosolido, Bernice A. 1990. "The Social Context of Religious Integration and Suicide: Pursuing The Network Explanation." *Sociological Quarterly* 31: 337-357.
- Pescosolido, Bernice A. and Sharon Georgianna. 1989. "Durkheim, Suicide, and Religion." *American Sociological Review* 54: 33-48.
- Pettersson, Thorleif. 1991. "Religion and Criminality: Structural Relationships between Church Involvement and Crime Rates in Contemporary Sweden." *Journal for the Scientific Study of Religion* 30: 279-291.
- Popielarz, Pamela A. and J. Miller McPherson. 1995. "On the Edge or In Between: Niche Position, Niche Overlap, and the Duration of Voluntary Association Memberships." *American Journal of Sociology* 101: 698-720.
- Ramirez-Valles, Jesus, *et al.* 1998. "Sexual Risk Behavior Among Youth: Modeling the Influence of Prosocial Activities and Socioeconomic Factors." *Journal of Health and Social Behavior*, 39(3), 237-253.
- Regnerus, Mark D. 2002. "Friends' Influence on Adolescent Theft and Minor Delinquency: A Developmental Test of Peer-Reported Effects." *Social Science Research* 31: 681-705.
- Regnerus, Mark D. 2004. "Moral Communities and Adolescent Delinquency: Religious Contexts and Community Social Control." Forthcoming. *Sociological Quarterly* (44): 4 T.B.A.
- Reiss, Ira L. 1970. "Premarital Sex as Deviant Behavior: An Application of Current Approaches to Deviance." *American Sociological Review* 35:78-87.
- Rindfuss, R. R., Bumpass, L., & St. John, C. 1980. Education and Fertility: Implications for the Roles Women Occupy. *American Sociological Review* 45, 431-447.
- Rohrbaugh, J., & Jessor, R. 1975. "Religiosity in Youth: A Personal Control Against Deviant Behavior." *Journal of Personality*, 43, 136-155.
- Ross, Lee, David Greene, and Pamela Hourse. 1977. "The False Consensus Effect: An Egocentric Bias in Social Perception." *Journal of Experimental Social Psychology* 13: 279-301.
- Rostosky, S. S., Wilcox, B. L., Wright, M. L. C., & Randall, B. A. in press. "The Impact of Religiosity on Adolescent Sexual Behavior." *Journal of Adolescent Research*.
- Sampson, Robert J. 1988. "Local Friendship Ties and Community Attachment in Mass Society: A Multilevel Systemic Model." *American Sociological Review* 53: 766-779.
- Sampson, Robert J. 1991. "Linking the Microlevel and Macrolevel: Dimensions of Community Social Organization." *Social Forces* 70: 43-64.

- Savin-Williams, R. C., & Berndt, T. J. 1990. "Friendship and Peer Relations." In Ed. S. S. Feldman & G. R. Elliot, *At The Threshold: The Developing Adolescent*, 277-307. Cambridge: Harvard University Press.
- Scheepers, Peer, Manfred Te Grotenhuis, and Frans Van Der Slik. 2002. "Education, Religiosity and Moral Attitudes: Explaining Cross-National Effect Differences." *Sociology of Religion* 63: 157-176.
- Schvaneveldt, Paul L., Brent c. Miller, E. Helen Berry, and Thomas R. Lee. 2001. "Academic Goals, Achievement, and Age at First Sexual Intercourse: Longitudinal, Bidirectional Influences." *Adolescence* 36: 767-787.
- Scott-Jones, D., & White, A. B. 1990. Correlates of Sexual Activity in Early Adolescence. *Journal of Early Adolescence*, 10, 221-238.
- Sheeran, P., Abrams, D., Abraham, C., & Spears, R. 1993. "Religiosity and Adolescents' Premarital Sexual Attitudes and Behaviour: An Empirical Study of Conceptual Issues." *European Journal of Social Psychology*, 23, 39-52.
- Sherkat, Darren E. and Christopher G. Ellison. 1999. "Recent Developments and Current Controversies in the Sociology of Religion." *Annual Review of Sociology* 25: 363-394.
- Small, S. A., & Luster, T. 1994. "Adolescent Sexual Activity: An Ecological, Risk-Factor Approach." *Journal of Marriage and the Family* 56:181-192.
- Small, S. A., Silverberg, S. B., & Kerns, D. 1993. "Adolescents' Perceptions of the Costs and Benefits of Engaging in Health-Compromising Behaviors." *Journal of Youth and Adolescence* 22:73-87.
- Smith, Christian. 2003. "Religious Participation and Network Closure among American Adolescents." *Journal for the Scientific Study of Religion* 42: 259-267.
- Smith, Christian, Melinda Lundquist Denton, Robert Faris, and Mark Regnerus. 2002. "Mapping American Adolescent Religious Participation." *Journal for the Scientific Study of Religion* 41: 397-612.
- Stark, Rodney. 2002. "Physiology and Faith: Addressing the 'Universal' Gender Difference in Religious Commitment." *Journal for the Scientific Study of Religion* 41: 495-507.
- Stark, Rodney. 1984. "Religion and Conformity: Reaffirming a Sociology of Religion." *Sociological Analysis* 45: 473-282.
- Stark, Rodney. 1996. "Religion as Context: Hellfire and Delinquency One More Time." *Sociology of Religion*, 57: 163-173.

- Stark, Rodney. 2001. "Gods, Rituals and the Moral Order." *Journal of the Scientific Study of Religion* 40: 619-636.
- Stark, Rodney and Roger Finke. 2000. *Acts of Faith: Explaining the Human Side of Religion*. Berkeley: University of California Press.
- Stark, Rodney, Daniel P. Doyle, and Lori Kent. 1980. "Rediscovering Moral Communities: Church Membership and Crime." Pp. 43-52. in *Understanding Crime: Current Theory and Research*, edited by Travis Hirschi and Michael Gottfredson. Sage Publications.
- Stark, Rodney, Lori Kent, and Daniel P. Doyle. 1982. "Religion and Delinquency: The Ecology of a 'Lost' Relationship." *Journal of Research in Crime and Delinquency* 18: 4-24.
- Stark, Rodney and William Sims Bainbridge. 1996. *Religion, Deviance, and Social Control*. New York: Routledge Press.
- Stensland, Jerry Park, Mark Regnerus, Lynn Robinson, Bradford Wilcox, and Robert Woodberry. 2000. "The Measure of American Religion: Toward Improving the State of the Art." *Social Forces* 79: 291-318).
- Studer, M., & Thornton, A. 1987. "Adolescent Religiosity and Contraceptive Usage." *Journal of Marriage and the Family*, 49, 117-128.
- Sullivan, H. S. 1953. *The Interpersonal Theory of Psychiatry*. New York, NY: W.W. Norton & Co., Inc.
- Sutherland, Edwin Hardin. 1960. *Principles of Criminology*, 4th ed. Philadelphia: J.B. Lippincott.
- Teitler, Julien O. and Christopher C. Weiss. 2000. "Effects of Neighborhood and School Environments on Transitions to First Sexual Intercourse." *Sociology of Education* 73: 112-132.
- Tittle, Charles R. and Michael R. Welch. 1983. "Religiosity and Deviance: Toward a Contingency Theory of Constraining Effects." *Social Forces* 61: 653-682.
- Thomas, William I. and Dorothy S. Thomas. 1928. *The Child in America: Behavior Problems and Programs*. New York: A. A. Knopf.
- Thornberry, Terence P., Alan J. Lizotte, Marvin D. Krohn, Margaret Farnworth, and Sung Joon Jang. "Delinquent Peers, beliefs, and Delinquent Behavior: A Longitudinal Test of Interactional Theory." *Criminology* 32: 47+
- Thornton, Arland and Donald Camburn. 1989. "Religious Participation and Adolescent Sexual Behavior and Attitudes." *Journal of Marriage and the Family* 51: 641-653.

- Tittle, Charles R. and Michael R. Welch. 1983. "Religiosity and Deviance: Toward a Contingency Theory of Constraining Effects." *Social Forces* 61: 653-682.
- Treboux, Dominique and Nancy A. Busch-Rossnagel. 1990. "Social Network Influences on Adolescent Sexual Attitudes and Behaviors." *Journal of Adolescent Research* 5: 175-189.
- Upchurch, Dawn, Carol S. Aneshensel, Clea A. Sucoff, and Lene Levy-Storms. "Neighborhood and Family Contexts of Adolescent Sexual Activity." *Journal of Marriage and the Family* 61: 920-33.
- Warr, Mark. 1998. "Life-Course Transitions and Desistance from Crime." *Criminology* 36: 183-216.
- Warr, 2002. *Companions in Crime*. Cambridge: Cambridge University Press.
- Warr, Mark and Mark C. Stafford. 1991. "The Influence of Delinquent Peers: what They Think or What They Do?" *Criminology* 29: 851-865.
- Welch, Michael R., Charles R. Tittle, Thomas Petee. 1991. "Religion and Deviance among Adult Catholics: A Test of the 'Moral Communities' Hypothesis." *Journal for the Scientific Study of Religion* 30: 159-172.
- Whitbeck, Les B., Kevin A. Yoder, Dan R. Hoyt, and Rand D. Conger. 1999. "Early Adolescent Sexual Activity: A Developmental Study." *Journal of Marriage and the Family* 61: 934-946.
- Youniss, J., and J. Smollar. 1985. *Adolescent Relations with Mothers, Fathers, and Friends*. Chicago: University of Chicago Press.
- Zaleski, E. H. & Schiaffino, K. M. 2000. "Religiosity and Sexual Risk-Taking Behavior During the Transition to College." *Journal of Adolescence*, 23, 223-227.

Amy Adamczyk
Vita

419 West 34th Street
New York City, NY 10001
ALA169@psu.edu; Home #: (646) 234-9338

EDUCATION

Ph.D.	<i>Pennsylvania State University, Sociology</i>	August 2001-August 2005.
M.A.	<i>Graduate School, City University of New York (CUNY), Sociology</i>	September 2001.
M.A.	<i>University of Chicago, Social Sciences</i>	December 2000.
B.A.	<i>Hunter College, CUNY, Sociology</i>	January 1998.
A.A.S.	<i>Fashion Institute of Technology, State University of New York (SUNY) Fashion Design,</i>	August 1997.

FELLOWSHIPS, HONORS, and AWARDS (total \$45,872)

2004	Crawford Fellowship in Ethical Inquiry, Pennsylvania State University (\$16,000).
2004	Student paper award, American Sociological Association (ASA) section, Children and Youth.
2001	Summer Program in Berlin <i>Humboldt University and Graduate School, CUNY</i> (accommodations and program funded).
2001	University Fellowship, <i>Graduate School, CUNY</i> (\$3,000).
1999	National Science Foundation Traineeship, <i>Graduate School, CUNY</i> (\$18,000).
1998	University of Chicago Institutional Scholarship, <i>University of Chicago</i> (\$7,872).
1998	<i>Hunter College, CUNY, summa cum laude.</i>
1997	<i>Fashion Institute of Technology, SUNY, cum laude.</i>

REFEREED PUBLICATIONS

Amy Adamczyk and Jacob Felson, 2005. "Running with the Right Crowd: Peer Religiosity and Sexual Intercourse," *Social Science Research*, T.B.A.
*Received student paper award, ASA section, Children and Youth

Amy Adamczyk. 2005. "Frankl, Bettelheim and the Camps," *Genocide Research*, 7: 1-17.

Amy Adamczyk, 2004. "Religious Switching: Does Parents' Education Matter?" *Research in the Social Scientific Study of Religion*, 15: 51-70.

Amy Adamczyk, John Wybraniec, and Roger Finke, 2004. "Religious Regulation and the Courts: Documenting the Effects of Smith and RFRA," *Journal of Church and State*, 46: 237-262.

Amy Adamczyk, 2002. "On Thanksgiving and Collective Memory: Constructing the American Tradition," *Journal of Historical Sociology*, 15: 343-356.

ADDITIONAL PUBLICATIONS

Amy Adamczyk, Book review of Mark Chaves, *Congregations in America, Contemporary Sociology*, T.B.A.

Amy Adamczyk, Book review of James T. Richardson, *Regulating Religion*; Michael McMullen *The Bahai*; and David G. Bromley and J. Gordon Melton, *Cults, Religion & Violence, Current Sociology*, T.B.A.

Chris Scheitle and Amy Adamczyk. 2005. "Campus Crusade for Christ International," in *Encyclopedia of Youth Activism*. Greenwood Publishing: 2005.