

THE CONTEXTUAL EFFECT OF SECULAR NORMS ON RELIGIOSITY AS MODERATOR OF STUDENT ALCOHOL AND OTHER DRUG USE

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ABSTRACT

Previous studies suggest that religiosity's effect in moderating youthful drug use is salient only because wider secular and peer norms do not already provide clear normative proscriptions. Yet variations in the secular norms surrounding drug use among students have been largely ignored in testing this claim. If the lack of secular controls is what contextually enables religiosity's restrictive impact, then normative secular constraints on drug use in a particular setting through both *actual* and *perceived* peer norms should be important factors limiting the degree of religious influence. This prediction is tested with survey data collected on drug use, attitudes, and perceptions of peer norms for alcohol, marijuana, cocaine, and hallucinogens in an undergraduate population in two distinct time periods (1982, N = 1,514 and 1989-91, N = 1,510). Support for a contextual effect of secular norms on the association between religiosity and drug use/attitudes is found for males but not females. Implications of this gender difference are discussed.

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INTRODUCTION

Religious influences upon alcohol and other drug use have been a persistent topic of theory and research in the literature on drug abuse for several decades. Such influences have frequently been uncovered in research on the attitudes and behaviors of general populations and teenagers. Even among some college populations of late adolescents and young adults from recent decades, where religiosity is traditionally a less prominent aspect of one's life and where peer influences typically overshadow most other personal background characteristics in these peer intensive environments, an impact of religiosity has been occasionally noted (cf. Hanson and Engs 1987; Humphrey, Leslie, and Brittain 1989; Perkins 1985; Turner and Willis 1979; Wechsler and McFadden 1979).

The expectation that religious commitment within the Judeo-Christian traditions should moderate or restrain youthful alcohol and other drug use may be derived from several factors. Traditions that proscribe abstinence provide an obvious potential deterrent to use for their adherents. More broadly, the basic emphasis on the human body as God's creation or as an "earthly temple" in Judeo-Christian perspectives, in general, may encourage an aversion to physically destructive abuse of drugs. Furthermore, the effects of personal religiosity on young persons may be reinforced through multiple intergenerational linkages by the influences of parental religiosity and drug use behavior (Perkins 1987).

It is frequently argued, moreover, that all major religious traditions serve, at least in part, as social control mechanisms that maintain social order by discouraging delinquent or deviant activity (cf. Rohrbaugh and Jessor 1975). Thus, youth who adhere more closely to dominant religious traditions are expected to exhibit greater conformity to the behavioral norms of society. This notion has been challenged, however, by some research revealing little relationship between religiosity and juvenile delinquency (Hirschi and Stark 1969) and a review of the literature on religiosity and deviance has found inconclusive results (Knudten and Knudten 1971). Subsequent research has refined the hypothesis by suggesting that the degree of social control by other institutions and wider cultural norms is a critical intervening factor (Burkett and White 1974; Elifson, Petersen, and Hadaway 1983; Hadaway, Elifson, and Petersen 1984; Linden and Currie 1977; Tittle and Welch 1983). If society in general strongly opposes and punitively responds to certain behaviors, then any additional emphasis of a religious tradition is not likely to be significant. In contrast, religious prescriptions or prohibitions may be more important when society has otherwise relaxed its restrictive controls or provides only ambiguous normative expectations. Thus, religiosity has a distinct ascetic effect and is salient, it is argued, only in contexts where wider secular and peer norms do not already provide relatively strong normative proscriptions.¹

This theoretical perspective about the contextual limitation of religiosity's effect on deviant behavior and specifically on drug use has not been fully tested with adequate assessments of contextual variation within a youthful population, however. If the lack of secular controls is what contextually enables religiosity to have a restrictive impact on drug use, then the degree of normative secular constraint on drug use in a particular setting should be an important determinant of the degree of religious influence. First, if variation in the permissiveness of secular norms exists for different types of drug use, then the deterring effect of religiosity on use or heavy use might vary directly with the particular type of drug examined.² Second, for any specific drug, if the cultural climate of acceptance or restriction becomes more (or less) restrictive over time then the moderating effect of religiosity should become correspondingly less (or greater). Third, a distinction between the actual and perceived social norms surrounding alcohol and other drug use among students in various contexts may be important. This distinction has been largely ignored in testing the effects of religiosity, even though perceptions of the secular norms will typically not match the actual behaviors and expectations of peers and not all students in the same campus environment will perceive the same degree of permissiveness in secular norms (Perkins 1991; Perkins and Berkowitz 1986). Thus it may be that any contextual limitations on the effect of religiosity are enhanced or diminished through the subjective perceptions of the secular context by the actor.

Lastly, gender may be an additionally important factor to consider. Peek-Lowe, and Williams (1991, p. 1216) point out that "a healthy dose of gender sensitivity seems much needed generally in sociological theories of religion. These theories need to seriously consider the sociological principle that people in different structural locations behave and think differently, and apply this principle to explaining gender variations in the impact of religion, rather than generating explanations that apply across-the-board." Potential differences in religious participation and the salience of religious commitment may suggest at least the need to control for gender in empirical analyses. Certainly gender differences in student alcohol use have been well-documented, although some gender-related differences may be declining (Berkowitz and Perkins 1987; Engs and Hanson 1989; Perkins 1992). If socially acceptable secular norms for alcohol and other drug behavior are not the same for men and women or if men and women tend to perceive different community norms for drug use regardless of the actual norms, then any contextual effects of religiosity may vary by gender.

Thus, three hypotheses about secular context are tested controlling for gender with data collected in campus-wide surveys of an undergraduate population between 1982 and 1991. First, given substantial differences in use and normative support for use of various drugs, the religious impact should be relatively stronger on the more widely used (more socially acceptable and

less secularly controlled) drugs. Clearly alcohol is the drug of choice in virtually all college contexts, with marijuana use less prevalent and cocaine and hallucinogens even less prevalent. Variations in legal restrictions and penalties for use of these substances reflect this pattern of use as well. Thus, the greatest moderating effect of religiosity should occur for the use of alcohol, followed by marijuana, in turn, followed by cocaine and hallucinogens.

Second, to the extent that there have been declines in use and social acceptability of some drugs on campus across the last decade, there should be a corresponding decrease in the relative impact of religiosity in controlling the use of these drugs. Increased minimum ages for alcohol consumption, greater campus control of drinking locations and expanding liability and tougher drunken driver laws have all placed greater secular restrictions on drinking through the 1980s. Declines in students' use of marijuana and even greater declines in the use of cocaine have occurred across this period largely associated with growing perceptions of risk involved with use of illicit drugs and increasing personal disapproval (Bachman, Johnston, and O'Malley 1990; Bachman, Johnston, O'Malley, and Humphrey 1988; Johnston, O'Malley, and Bachman 1991). Thus the moderating effect of religiosity should be greater in the more open period of the early 1980s as compared with the secularly more restrictive end of the decade.

Third, if there are differences among students in what they perceive as the socially acceptable secular norm with some perceiving (regardless of accuracy) a more permissive campus environment than others do, then religiosity ought to have a stronger negative effect on use among students who believe the general campus norm is relatively permissive (i.e., perceive less secular constraint) in contrast with students who perceive peers in general as more moderate (i.e. perceive greater secular control).

METHODS

Samples

The data are drawn from three surveys conducted at an undergraduate liberal arts institution of higher education in New York State with a predominantly Northeastern and upper-middle class student body. Almost all of the approximately 1900 students who attend this institution are between the ages of 17 and 23 and most reside in campus housing including residence halls, small cooperative houses, and fraternities.

The surveys were conducted in 1982, 1989 and 1991 during the latter part of the academic year. Each survey concentrated heavily on questions about alcohol and other drug use in relation to well-being on campus. In 1982 all students were surveyed (N of respondents = 1514, 86% response). In 1989, due

to more limited research staff time and resources, a stratified (by gender and class year) random sample of half of the student body was selected and surveyed (N of respondents = 584, 61% response). In 1991, all students were again surveyed, but follow-up of nonresponders was more limited (N of respondent = 926, 50% response).

All questionnaires were completed and returned anonymously for each survey. The variation in response rates essentially reflects the difference in time and resources that could be devoted to follow-up procedures for obtaining responses from initial non-responders. In each survey, however, the large resulting sample was highly representative of the student population in terms of demographic characteristics provided by administrative sources such as class year, academic interests, and type of housing. Moreover, in a detailed analysis of data from 1982 (the year when resources permitted the greatest amount of follow-up and thus the highest response rate), no significant differences were found when alcohol and drug use responses for students who initially responded were compared (controlling for gender) with the responses of those who returned the survey only after being contacted and prompted by repeated follow-up requests. Thus it appears unlikely that non-responders reflect a significantly distinct group of students with regard to the interests of this study or that differences in response rates will distort the time comparisons presented here (i.e., the first 50% and 61% of the 1982 data that responded—response rates that would have been equal to the 1991 and 1989 responses—show essentially the same pattern of use as all 86% that responded that year).

In controlling for and comparing historical periods, the relatively recent data from the 1989 and 1991 surveys are combined and contrasted with the earlier 1982 data. The 1989 and 1991 data do not significantly differ on the measure examined in this study and thus combining these data provided a sample size (N = 1510 for 1989-91) matching that of the earlier and distinct time period (N = 1514 for 1982).

Comparing early 1980s data with late 1980s/1990s provides a particularly useful contrast of historical periods in the examination of contextual effects. In addition to the national trends toward more conservative drug policies and actual reductions in illicit drug use from the early to late 1980s as previously noted, significant state and local changes had occurred altering the context of drug use for the college population under study. At the time of the 1982 survey the minimum legal drinking age in New York State had been historically constant for almost half a century. (From the early 1930s until the end of 1982 a minimum age of 18 was the mandate.) In December of 1982 (the middle of the academic year following the first survey) the minimum age was raised to 19. In 1985 the legal age was further raised to 21. Thus the age 21 requirement had been in effect in New York for more than three years at the time of the second survey in this study. Furthermore, spurred by growing concerns about campus drug abuse and by increasing legal risks of institutional liability

nationwide, administrators on this campus in the mid-1980s began introducing more controls on campus alcohol consumption (e.g., banning kegs and other large alcohol sources and mandating provisions for alternative refreshments at campus parties, monitoring fraternity alcohol use more closely, and increasing disciplinary responses to abuse).

The percentage of females in the 1989-91 sample (56%) is notably higher than that of the 1982 sample (44%). This difference reflects two factors. First, the institution admitted more women during the latter 1980s in order to create a closer gender balance in the student body. Second, women generally tended to respond more readily to these surveys on health related behaviors. In the later years when less follow-up was possible, a higher response rate from women emerged. Nevertheless, gender is controlled throughout this study with separate analyses for men and women. Thus, the differing proportions of women between time periods does not distort the basic analysis of alcohol and other drug use with religiosity.

Protestants in the sample accounted for 40/38 percent (1982/1989-91),³ 33/36 percent were Roman Catholic, 17/10 percent were Jewish, 7/11 percent claimed no religious tradition, and 4/6 percent indicated a faith other than Judaism or Christianity. For the purposes of this study about the effects of Judeo-Christian religiosity, the small percentage of respondents who reported a faith outside the Judeo-Christian tradition were excluded from subsequent analyses.

Measures

Religiosity

Respondents were asked to indicate the strength of their religious faith commitment by choosing from a continuum of response categories provided on the questionnaire.⁴ Students who responded with "I have no religious faith," "It is not important to me at all," or "It is not very strong" were initially classified as low religiosity for the purposes of this study. Alternatively, respondents who indicated that "It is fairly strong," "It is very strong," or "It is the most important aspect of my life" were subsequently categorized as high religiosity. High religiosity based on this dichotomy was noted by 43 percent of males and 48 percent of females in 1982 and by 30 percent of males and 39 percent of females in 1989-91.

Drug Use

Alcohol consumption. Individuals who indicated that they "never drink alcoholic beverages" comprised a very small percentage (less than 5% of males and females in each time period).⁵ Thus, the virtually ubiquitous prevalence of alcohol consumption does not provide a usefully discriminating measure

for the purposes of this study. The frequency of alcohol consumption was measured in each survey year by asking students to report how many days during the past two weeks beer, wine, or liquor were consumed. Frequent drinkers were defined as those students drinking on more than seven of the last 14 days. A quantity measure asked respondents to provide a specific estimate of the total number of drinks consumed during the past two weeks (a "drink" was defined in the survey as a beer, a glass of wine, a shot of liquor or a mixed drink). Heavy drinkers were defined as those students who drank more than two drinks each day on average across the two week period (i.e. reported having more than 28 drinks in the last 14 days). Because the basic patterns of alcohol use and religiosity were essentially the same for the measure of frequent use and the measure of heavy consumption, these measures were combined in the tabular data of this report as a single measure including frequent or heavy drinkers.

Other drug use. The frequencies of marijuana use, cocaine use, and hallucinogen use were measured in the surveys by asking students to report approximately how often they used each drug type with the following seven response categories: 1) never, 2) tried it one or two times, 3) a few times a year, 4) once or twice a month, 5) about once a week, 6) several times a week and 7) almost every day. If a respondent had never used the drug or had only ever tried it once or twice, she or he was considered a nonuser. Thus respondents who indicated that they used the drug a few times a year or more often were classified as users.

Drug Attitudes and Perceived Norms

Personal attitudes concerning alcohol use were assessed by asking the respondent to select the statement that best represented his or her own opinion about drinking from the following: (1) "drinking is never a good thing to do" (2) "drinking is all right but a student should never get 'smashed'," (3) "an occasional 'drunk' is okay as long as it doesn't interfere with academics or other responsibilities", (4) "an occasional 'drunk' is okay even if it does occasionally interfere with academics or other responsibilities", and (5) a frequent 'drunk' is okay if that's what the individual wants to do." While students expressed personal attitudes ranging across each of these possibilities, the majority of men and women chose item three (the relatively moderate position) as most reflective of their own attitude in each time period with smaller percentages taking a more conservative or more permissive stance.

Respondents were also asked to give their perception of what they thought was the most common attitude of students in general on campus using the same five response categories provided for personal attitudes. A range of perceived campus norms was also expressed with only about one-third accurately perceiving the norm to be the relatively moderate response (item

three). Almost all other students perceived the norm to be more permissive than was actually the case (response items four or five) in both time periods. For both personal attitudes and perceived campus norms, respondents' positions were subsequently dichotomized for initial analyses into a conservative to moderate category (response items one through three) and a highly permissive category (response items four and five). The distinction in this dichotomy is between attitudes and perceived norms that involve at least some degree of responsibility in avoiding negative consequences and some moderation in frequency/amount of consumption versus those attitudes and perceived norms involving very little restraint.

Each survey respondent was also asked to indicate his or her own personal attitude and then his or her perception of the most common attitude on campus concerning the use of marijuana, cocaine, and hallucinogens. (Hallucinogens were not included in the questionnaire items on attitudes and perceptions in 1989-91, however). Response choices were: (1) "it is never a good thing to use", (2) "occasional use is okay as long as it doesn't interfere with academic or other responsibilities", (3) "occasional use is okay even if it does interfere with academic or other responsibilities", or (4) "frequent use is okay if that's what the individual wants to do." Most students chose item one or two as their own position, but, similar to the pattern with alcohol, often perceived the campus as more permissive. For initial analyses presented here these responses on both attitudes and perceptions were also dichotomized between indications of at least a degree of moderation (response items one and two) and essentially unrestricted positions (items three and four).

FINDINGS

The data on drug use and attitudes inclusive of all sample years are presented first by the categories of low and high religiosity for male and female students (Table 1). Here the basic claim that high religiosity is associated with less use and more moderate attitudes is given clear empirical support. Use of all drugs is lower among highly religious students and significantly so in each instance except cocaine use among males where the percentage difference is quite small.⁶ Likewise, unrestricted attitudes are less prevalent in the high religiosity category in every instance with significant differences in the expected direction for alcohol attitudes among females and for marijuana attitudes across both genders. Examination of the gamma coefficients reveals that the association between religiosity and use/attitudes is notably higher for females than for males in most instances. Comparing the gamma associations across drug categories, there is no consistent pattern in moving from the less restricted and more pervasive drugs to the more tightly controlled and less popular drugs.

Table 1. Drug Use and Unrestricted Attitude Percentages Among Male and Female College Students (1982-1991) By Religiosity

	Males			Females		
	Religiosity		(Gamma)	Religiosity		(Gamma)
	Low	High		Low	High	
Use						
Frequent/Heavy Alcohol	54.6	45.7***	(-.18)	29.1	23.0**	(-.16)
Marijuana	69.0	64.3*	(-.10)	59.6	45.5***	(-.28)
Cocaine	31.2	28.3	(-.07)	20.5	13.4***	(-.25)
Hallucinogens	23.9	18.4*	(-.16)	14.2	6.9***	(-.38)
Unrestricted Attitude^a						
Alcohol	23.3	20.4	(-.09)	13.9	9.6*	(-.20)
Marijuana	23.0	16.3*	(-.21)	12.3	7.1**	(-.30)
Cocaine	12.4	11.5	(-.04)	5.7	4.2	(-.15)
N of cases	884	525		806	607	

Notes: * Percentage is significantly lower than "low religiosity" comparison at $p < .05$;

** $p < .01$;

*** $p < .001$.

^a Data on hallucinogen attitudes were not consistently collected in each survey wave and, therefore do not appear in this table.

Table 2 provides evidence of a change from a more permissive to a more moderate student environment as drug use, attitudes, and perceptions of the norm are broken down by time period (1982 compared to 1989-91) for each gender. For alcohol, marijuana, and cocaine there was a decrease in student use, unrestricted attitudes, and perceptions of an unrestricted norm with a significant decline in each instance except males' perception of the alcohol norm. There was no evidence of any significant difference over time for hallucinogen use. (No available data in 1989-91 precludes any time comparisons of hallucinogen attitudes and perceived norms).

Given the differences between the early 1980's and the end of the decade in actual and perceived norms of use among sampled students (Table 2), we can pursue the question of the effect of religiosity during periods of greater and lesser general acceptability. In Table 3 drug use and attitudes are again presented for low and high religiosity by gender, but also distinguished by time periods. A clearly more marked association is revealed between religiosity and use/attitudes for males during 1982 in comparison with the 1989-91 data for alcohol, marijuana, and cocaine. This finding would be expected from the hypothesis about greater normative ambiguity permitting greater religious influence. That is, while high religiosity among males is significantly associated with less drug use or unrestricted attitudes in every comparison in 1982, only marijuana use/attitudes differed significantly for religiosity categories among

Table 2. Percentages for Drug Use, Unrestricted Attitudes, and Perceived Unrestricted Norms Among Male and Female College Students By Time Period

	Males		Females	
	1982	1989-1991	1982	1989-1991
Use				
Frequent/Heavy Alcohol	53.8	47.7*	35.3	19.6***
Marijuana	76.9	54.9***	65.1	45.1***
Cocaine	42.2	14.0***	30.4	8.1***
Hallucinogens	23.1	20.6	11.7	11.1
Unrestricted Attitude				
Alcohol	26.6	16.8***	16.1	8.8***
Marijuana	24.4	15.7***	14.8	6.9***
Cocaine	19.0	3.6***	10.9	.8***
Hallucinogens	7.5	No Data	3.4	No Data
Perceive Unrestricted Norm				
Alcohol	55.5	53.2	75.7	70.9*
Marijuana	58.2	48.7***	72.2	58.6***
Cocaine	41.1	13.1***	47.5	24.9***
Hallucinogens	19.8	No Data	21.9	No Data
N of cases	799	623	626	804

Note: * Percentage is significantly lower in 1989-1991 when compared to 1982 at $p < .05$;

** $p < .01$;

*** $p < .001$

males in 1989-91. In contrast, among females the original association between religiosity and drug use/attitudes found in Table 1 is essentially replicated in each time period. Thus, the degree of general permissiveness as reflected in the different time periods does not appear to have altered the original religiosity-drug relationship for females.

Next, the question concerning the effect of a relatively permissive perceived norm was explored. Table 4 breaks down the data on the relationship between drug use/attitudes and religiosity by the student's own perception of the norm for each specific drug while controlling for gender and time period. For males the perception of the norm is also a factor in the drug-religiosity relationship as predicted. Among men who perceived the particular drug norm to be relatively unrestricted in the 1982 sample (the year of more permissive actual norms), drug use and unrestricted attitudes were significantly lower in the high religiosity group as compared with males indicating low religiosity in seven of the eight comparisons. Only two of the eight comparisons were significant in the expected direction, however, for males who perceived a relatively moderate peer norm in that year. Looking at the gamma correlations for males in 1982, one finds negative associations between drug use/attitudes and

Table 3. Drug Use and Unrestricted Attitude Percentages Among Male and Female College Students in 1982-1991 by Religiosity

	Males				Females			
	1982 Religiosity		1989-1991 Religiosity		1982 Religiosity		1989-1991 Religiosity	
	Low	High	Low	High	Low	High	Low	High
Use								
Frequent/Heavy Alcohol	59.7	46.8***	49.4	43.6	40.3	30.2**	21.6	16.3***
	(-.25)	^a	(-.12)		(-.22)		(-.17)	
Marijuana	80.2	72.6**	57.3	49.4*	70.5	59.0**	52.3	33.0***
	(-.21)		(-.16)		(-.25)		(-.38)	
Cocaine	46.3	36.6**	14.4	13.3	36.8	22.7***	9.7	5.5*
	(-.20)		(-.05)		(-.33)		(-.29)	
Hallucinogens	25.3	19.7*	22.5	16.3	14.5	7.7**	14.0	6.2***
	(-.16)		(-.20)		(-.34)		(-.42)	
Unrestricted Attitude								
Alcohol	29.6	22.8*	16.8	16.2	18.3	13.6	10.8	5.7**
	(-.18)		(-.02)		(-.17)		(-.33)	
Marijuana	28.3	19.1**	17.7	11.4*	18.4	9.5***	8.4	4.9*
	(-.25)		(-.25)		(-.36)		(-.28)	
Cocaine	21.9	15.3*	3.0	4.9	12.7	8.4*	— ^b	
	(-.22)		(-.24)		(-.23)		— ^b	
Hallucinogens	9.5	4.7*	No Data		3.2	3.4	No Data	
	(-.36)				(-.04)			
N of cases	448	340	436	185	323	296	483	311

Notes: ^a Gamma correlations for use/attitudes by religiosity are in parentheses.

^b Observed cases are too small for reliable estimates (expected cell frequencies < 5).

* Percentage is significantly lower than "low religiosity" comparison at $p < .05$; ** $p < .01$; *** $p < .001$.

religiosity in every instance, but the negative association is greater for those men perceiving an unrestricted norm in seven of the eight item comparisons.

Again the contingent effect of perceptions is revealed for male students in the 1989-91 data (the time when actual norms were more restrictive) in Table 4. Among males who perceived an unrestricted norm, drug measure percentages were significantly lower in the higher religiosity category in four of the six items where data were available for comparison. All six gamma correlations were negative as predicted. In contrast, there were no significant differences in drug use or attitudes between high and low religiosity men perceiving a moderated norm. Only two of the five gamma correlations computed were negative here. Thus the negative drug-religiosity association virtually disappears for men who were sampled in a relatively restrictive time

Table 4. Drug Use and Unrestricted Attitude Percentages
Among Male and Female College Students in 1982 and 1989-1991
by Religiosity Controlling for Drug-Specific Perceived Norm

	Males							
	Perceived Drug Norm—1982 Sample				Perceived Drug Norm—1989-1991 Sample			
	Unrestricted Religiosity		Moderated Religiosity		Unrestricted Religiosity		Moderated Religiosity	
	Low	High	Low	High	Low	High	Low	High
Use								
Frequent/Heavy Alcohol	54.2 (-.34) ^a	37.0***	71.3 (-.29)	57.6**	45.1 (-.21)	35.0*	55.1 (-.03)	56.8
Marijuana	78.2 (-.25)	68.5*	85.0 (-.21)	78.7	55.7 (-.21)	45.2*	59.0 (-.10)	54.1
Cocaine	49.4 (-.16)	41.4	45.1 (-.18)	36.4*	31.7 (-.49)	13.8*	13.0 (-.03)	13.7
Hallucinogens	25.7 (-.67)	6.4**	26.8 (-.08)	23.8	No Data		No Data	
Unrestricted Attitude								
Alcohol	31.8 (-.24)	22.3*	28.5 (-.16)	22.5	22.7 (-.16)	17.6	11.1 (.12)	13.7
Marijuana	36.6 (-.31)	23.4**	17.2 (-.15)	13.3	26.1 (-.42)	12.5**	10.9 (-.03)	10.2
Cocaine	36.0 (-.26)	24.8*	11.3 (-.13)	8.9	13.3 (-.04)	12.5	— ^b	— ^b
Hallucinogens	25.6 (-.71)	5.6**	5.7 (-.15)	4.3	No Data		No Data	
	Females							
Use								
Frequent/Heavy Alcohol	35.0 (-.14)	28.7	56.2 (-.38)	36.2**	21.2 (-.33)	11.8**	19.7 (.17)	25.6
Marijuana	70.4 (-.25)	59.0**	73.0 (-.26)	61.2	53.9 (-.39)	33.9***	51.4 (-.38)	32.3***
Cocaine	35.9 (-.18)	27.9	38.5 (-.52)	16.7***	10.7 (-.56)	3.2*	8.9 (-.22)	5.9
Hallucinogens	— ^b		14.3 (-.31)	8.1*	No Data		No Data	
Unrestricted Attitude								
Alcohol	18.6 (-.14)	14.6	16.4 (-.34)	8.8	14.0 (-.37)	7.0**	— ^b	
Marijuana	21.9 (-.34)	12.1**	11.8 (-.62)	3.0*	10.1 (-.28)	6.0	5.3 (-.27)	3.1
Cocaine	20.4 (-.18)	15.2	7.0 (-.43)	2.9	— ^b		— ^b	
Hallucinogens	— ^b		2.2 (.07)	2.5	No Data		No Data	

Notes: N of cases within a column category varies according to the specific drug involved.

^a Gamma correlations for use/attitudes by religiosity are in parentheses.

^b Observed cases are too small for reliable estimates (i.e., expected cell frequencies < 5).

* Percentage is significantly lower than "low religiosity" comparison at $p < .05$; ** $p < .01$; *** $p < .001$

period and who simultaneously perceive student norms for the particular drug to be relatively moderate.

For women the association between drug measures and religiosity is not specifically affected by controlling for perceived norms in Table 4. A negative gamma association persists in 21 of the 23 drug item comparisons across religiosity levels with significant percentage differences in ten instances. In general, significant associations between drug use/attitudes and religiosity are equally as common overall among the females who perceive a moderated norm as among those who perceive an unrestricted norm for the various drugs examined. In 1982 negative associations were actually more pronounced in the moderated perception group as compared to those with unrestricted perceptions, while in 1989-91 negative associations are somewhat less evident in the moderated versus unrestricted perception categories.

In a final analysis multivariate regression was employed in order to supplement the contingency table tests of the stability, relative strength, and significance of relationships between drug use and religiosity thus far observed. A comprehensive measure of drug use orientation that incorporated the full range of variation in drug use items and a scaled measure of religiosity were used with this analytic technique. An index measuring personal drug use orientation was created as the dependent variable using the full range of variation provided in the original coding of each item concerning alcohol, marijuana, and cocaine. (Hallucinogen data were excluded here because most items were only included in the 1982 time period.) Thus seven items comprised the index: The number of drinking days (0 to 14) and the number of drinks (0 to 100) in the last two weeks, the frequency of marijuana and cocaine use (each originally coded from one for never to seven for almost every day), and one's personal attitude on alcohol, marijuana, and cocaine (each originally coded from one for most restrictive to four or five for most permissive). The index score for each respondent was computed by adding together the standardized z-scores for each of these seven items.⁷ Scores on this index of personal drug use orientation ranged from -8.61 (most restrictive) to 17.30 (least restrained) with a mean of -.01 and a standard deviation of 5.15.

Religiosity was entered as an independent variable in the OLS regression with the following coding on strength of faith: 1 (no faith or not important at all), 2 (not very strong), 3 (fairly strong), 4 (very strong), and 5 (most important aspect of one's life). Religious tradition was controlled in the regression analysis by entering dummy variables for Protestant, Catholic and Jewish faiths as independent variables (using those respondents with no tradition as the comparison category). Class year (coded one through four) was also entered in the regression as an independent control variable because strength of faith frequently declines over college years and drug use often increases with age and greater access to drugs among older students in the campus environment.

This regression analysis was conducted with eight sub-samples in order to test the specific effect of religiosity on personal drug orientation for men and women separately during each time period and for those who did and did not perceive normative restraint among their campus peers. In order to categorize students according to their perception about the peer norms for drug use in general, the original scores on the separate items for students' perceptions of the most common campus attitudes about alcohol, marijuana, and cocaine (scored one to four or five) were added together. In the previous analyses response scores of one to three on perceptions of the alcohol norm and response scores of one or two on perceptions of the marijuana and cocaine norms were selected as indications that the individual perceived some moderation or restraint in the environment in the use of the drug. Thus a total score of seven or less was used to determine the category of students perceiving a moderated drug norm overall in the environment with totals greater than seven indicating a perceived lack of restraint.

Table 5 presents the standardized (beta) coefficients from all of the sub-sample regressions of personal drug use orientation on religiosity controlling for faith tradition and class year. In all eight instances (both male and female students in 1982 and in 1989-91 who perceive unrestricted and moderated drug norms on campus) the coefficient is negative indicating greater religiosity being associated with a less permissive personal orientation to drug use. Substantial variation in the strength and significance of religiosity's effect is clearly apparent, however. For males religiosity has a statistically significant impact

Table 5. Standardized (Beta) Regression Coefficients for Religiosity^a Predicting Personal Drug Use Orientation^b of College Students in 1982 and 1989-1991 by Gender and Perceived Drug Norm.^c

	1982		1989-1991	
	Perceived Drug Norm		Perceived Drug Norm	
	Unrestricted	Moderated	Unrestricted	Moderated
Males	-.22***	-.13	-.12	-.05
(N)	(472)	(188)	(338)	(227)
Females	-.26***	-.30*	-.15*	-.30***
(N)	(473)	(74)	(518)	(178)

Notes: ^a Religiosity scale is scored from 1 (no importance or no faith) to 5 (most important aspect of one's life).

^b This index is a total of z-scores for seven items on personal attitudes and frequency/amount of alcohol, marijuana, and cocaine use. Index scores range from -8.61 to +17.30 with higher scores representing more permissive personal attitudes and greater drug use during the academic year.

^c The regression equations producing these coefficients for religiosity also include class year and religious tradition (Protestant, Catholic, Jewish entered as dummy variables compared to no faith) as independent control variables.

* Coefficient is significant at $p < .05$; ** $p < .01$; *** $p < .001$

in the circumstance where the actual (1982) and perceived norms are least restrictive ($\beta = -.22$). In the other three conditions the effect of religiosity for males fails to reach significance. Particularly notable here is the finding that among those men whose more conservative time period of 1989-91 is reinforced by their perceptions of a moderated norm, the predicted effect of religiosity is negligible ($\beta = -.05$). In contrast, the restraining effect of religiosity on women's personal orientations to drug use is statistically significant in every instance. Some variation in the strength of effect exists in the data for women with the effect for those perceiving an unrestricted environment in 1989-91 dipping notably below that of the other three coefficients. There is clearly no pattern here indicating a reduced effect of religiosity for women in the more conservative time period or when the social norm is perceived to be more moderate, however.

DISCUSSION

This study stands within a long tradition of debate and empirical inquiry about the effect of religiosity upon deviance. The focus here is specifically on the controlling or moderating influence of Judeo-Christian religiosity in relation to various forms of drug use. It has been theoretically proposed in prior research that religiosity's potentially constraining effect must be contextualized by the degree of normative ambiguity about the particular behavior that generally prevails in a community. If strong secular controls exist and are reinforced in general community standards, it is argued that the additional restraining contribution of a highly religious orientation upon drug use is likely to be negligible. If, instead, normative ambiguity about a behavior is characteristic of the environment, then religiosity should play an important part as a distinct influence moderating one's attitudes and behaviors. Prior empirical testing of this claim has been quite limited, however, by a dearth of data in which the normative context is examined as it varies over time, for different types of drug use, and across the minds of individuals involved in terms of their perceptions of the norm. Thus, this study employed data from a college student population that allowed for the controlled testing of religiosity's influence in these varying contexts.

Only qualified empirical support emerged for the contextual nature of religious influences. For females in these data, the more basic hypothesis of religiosity's moderating effect on drug attitudes and use was generally supported across types of drugs, time periods, and perceived contexts. Various contextual analyses provided no consistent result altering or refining this basic association. Thus, it appears from these data that for young women in this collegiate environment, religiosity has an important and independent impact on alcohol and other drug use, regardless of secular norms.⁸

Males were similar to female students in that the type of drug (some being more culturally acceptable than others) did not consistently differentiate religiosity's extent of influence. The findings were otherwise quite different for males, however. Although the initial bivariate associations between religiosity and the various drug measures for men in these data were weak, the associations became more prominent when specified under certain contextual conditions. Religiosity was a stronger deterrent during the time period of greater use and more permissive norms (1982) in comparison with the more restricted period (1989-91). Similarly, the male student's personal perception of the norm was an important contingency. The negative association between religiosity and drug use items was more pronounced overall for the men who perceived greater permissiveness or normative ambiguity than for the men who thought that a more moderate norm prevailed in each time period. Ultimately, the strength of religiosity's deterrent effect on drug use for men in the relatively unrestricted time period who simultaneously perceived a permissive environment approximated the effect found among women in general (based on regression analyses). In contrast, religiosity's effect virtually disappeared for men on campus in the time period when greater normative restraint was actually the case if they also perceived that moderation was the norm.

This gender difference in the findings suggesting an independent religious influence on drug use for women and a contextual religious influence for men is unprecedented in empirical research. The lack of similar findings elsewhere may, in part, reflect the paucity of research that adequately introduces actual and perceived variation in norms for otherwise comparable samples. It may also reflect the fact that where gender has been controlled in previous studies, it has been introduced simply as an independent variable along with religiosity predicting drug use/attitudes in a multivariate analysis. Thus, while any spurious religiosity-drug correlation caused by a gender difference in religiosity levels and a simultaneous gender difference in drug use may have been removed, the potentially *interactive* impact of gender across normative contexts in specifying the religiosity-drug association has been ignored. It is also certainly conceivable that any modest differences in negative associations between religion and drug use previously found in differing normative contexts may be the product of large contextual differences for one gender and little difference for the other gender. Of course any generalizations from the present study must be made with caution, given the sampling frame of this particular college population with a northeastern constituency where liberal mainline Protestants, Roman Catholics, and Jews are predominant. Future research will need to conduct separate analyses for men and women or isolate the potential interaction of gender and normative context when examining the influence of religiosity on drug use and possibly on other forms of deviant behavior, and do so in populations where evangelical or fundamentalist Protestants are more common.

There is no clear theoretical perspective at present that can fully explain the gender difference in the empirical findings of this study. It may be that women are guided by their religiosity in a more fundamental way or across broader social situations. Men, in contrast, even with a strong religious commitment may tend to compartmentalize or limit the role of their faith in their secular lives when other normative frameworks are provided by society.

Another more complex approach might explain the gender difference here as a specific product of student culture and personality types. For example, one might consider the nature of conformity or nonconformity in personality dispositions and relate it to drug use and religiosity in a campus context. In times when the norms about drug use on campus are fairly clear and restrictive and when these norms are perceived as such, a nonconformist personality type may be a significant factor raising the likelihood of a student's drug use. If being highly religious for males tends to reflect a nonconformist disposition especially in the student culture of a particular campus, then competing forces may be at work for these highly religious males in times of strong normative secular prohibitions. These collegiate men's religiosity per se may be acting as a deterrent to drug use, but their relatively unconventional dispositions may be simultaneously pulling them in the opposite direction. The net result could make them no different in drug use and attitudes than less religious college males. That is, less religious males may not have the moral deterrent of a particular faith, but being more conventional, may tend to more closely follow the social norms opposing drug use.

When norms about drugs are relatively ambiguous leaving no clear and singular social expectation to follow, however, an individual's conformist or nonconformist disposition may be less relevant to drug use tendencies. Thus, the nonconventional aspect of highly religious college males would not necessarily run counter to the moderating force of their religious beliefs on drug use in this circumstance. That is, a greater negative association between religiosity and drug use for males would be predicted under more ambiguous secular conditions (where conformity dispositions would not be a mitigating factor) and smaller associations would be expected when there was more uniform secular opposition (where unconventional dispositions could compromise the religious deterrence).

In contrast, strong religiosity for female college students may not be associated with conformity or nonconformity overall. That is, traditional religiosity may be linked with a conformist disposition among women in society in general, but this may be counteracted among collegiate women by the dominant religion's lesser popularity in many college contexts. Thus a direct religious influence moderating drug use may predominate for collegiate women regardless of the contexts where conformity dispositions may be more or less salient. While this complex theoretical proposition does provide a possible explanation, it must be acknowledged as mere speculation at this point, of

course. More theoretical work as well as empirical research will be needed along these lines.

Finally, there is another branch of theory and research on the contextual nature of religiosity's influence on deviant behavior that deserves comment here. The particular orientation gives attention to the contextual normative conditions of the independent variable, that being the pervasiveness or strength of religiosity in the population under study (Stark 1984; Stark, Kent, and Doyle 1982). It has been argued that a religion's deterrent effect will most likely occur or occur more strongly in contexts where the religion itself is widely affirmed in community standards.⁹ Given the notable drop in religiosity in these data between time periods (recall 43% of males were highly religious in 1982 as compared with 30% in 1989-91), this perspective might be suggested as an alternative explanation for the more predominant negative association found between religiosity and drug items for men in 1982 as compared with 1989-91 (Table 3). This interpretation still leaves the gender specific nature of the findings unexplained, however, given similar decline in female religiosity in this collegiate environment over time (48% in 1982 to 39% in 1989-91). Also, this interpretation is ultimately less satisfactory as an explanation of the pattern for men than the argument suggesting that the lack of consistent secular norms permits a specific religious influence. That is because the contextual role of secular norms on the effect of religiosity was clearly demonstrated *within* each time period (when aggregate religiosity levels were constant) by distinguishing between males who perceived secular normative restraint and those who perceived an unrestrained environment (Table 4). Nevertheless, future studies may be able to combine various student populations in a research design that can simultaneously distinguish variation in the actual and perceived secular drug norms and the aggregate levels of religiosity for an even more thorough investigation of contextual effects.

In conclusion, the implications of these findings for practitioners in student culture are worth noting. Campus administrators, counselors, and health educators on college campuses overwhelmingly point to substance abuse as the number one problem on most campuses nationwide. They, along with researchers on the topic, also note that most traditional programs to combat the problem through health education and legal restrictions have produced very little positive effect with peer influence being the predominant factor in student drug use. Amidst such peer influence in the peer intensive environment of a residential college campus, this research points, nonetheless, to the positive effect of religious commitment in moderating alcohol and other drug use. This beneficial effect was persistent across all circumstances for women. It was also at least notable for men in the most problematic peer environmental contexts where actual and perceived norms encouraged greatest usage. Thus administrators and health care professionals as well as religious leaders working on college campuses should recognize the potential contribution of students'

religious involvements in controlling the problem of abuse. Just as student involvement in extracurricular activities is often encouraged by college personnel to promote student retention and well-being in general, secular and religious professionals concerned with student development have an additional reason to acknowledge and facilitate the development of student religious life. Obviously, the extent of such facilitation must vary considerably depending upon the role of the college professional and the status of the institution (e.g. public, private, or religiously sponsored). Still it is important for student development professionals to appreciate the support, albeit possibly more limited for men, that religious identification brings to students in resisting drug abuse in the peer environment.

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NOTES

1. This claim has not received uniform support in research on adolescents, however. Cochran (1988), for example, found a more predominant general impact of religion inhibiting both secular and ascetic deviance among junior and senior high school students.

2. Cochran's (1991) research on secondary school students did not find significant variation in the negative effect of religiosity on the use of different drugs, however.

3. Among Protestants there were Episcopalians (38%), Presbyterians (17%), Methodists (9%), United Church of Christ (8%), Baptists (2%), Unitarian-Universalists (3%), small sects (2%) and Protestants claiming no specific tradition (14%) with no significant differences between time periods. Some researchers have called for detailed analyses of denominational backgrounds when studying alcohol and other drug use, pointing to the great diversity within Protestantism as an important factor to consider in addition to any comparisons among major faith groups (Cochran, Beeghley, and Bock 1988; Jensen and Erickson 1979; Nelsen and Rooney 1982). Yet Cochran and Akers' (1989) research on adolescents has suggested that the added predictive value of models specifying the degree of denominational proscriptiveness in examining the effects of religiosity on antiascetic behavior is only slight over the parsimonious claim of a direct effect of religiosity alone. In more detailed analyses on the data of the present study (not provided here), most Protestants in the sample showed a high degree of similarity on drinking and other drug use, and thus, they are not distinguished in this report. The similarity among Protestants on most measures reflects in all likelihood the fact that almost all Protestant respondents in this sample come from mainline traditions and mostly from the relatively liberal Northeast.

4. Although this measure of religious commitment is based on a single-item indicator, Gorsuch and McFarland's (1972) research with college students provides evidence that single-item measures

of the self-rated importance of religion may be equally satisfactory to a multiple-item counterpart.

5. This high prevalence rate of alcohol use is similar to that of students at most schools in the Northeast (Wechsler and McFadden 1979).

6. In more detailed analyses not presented here, the interaction effects of religiosity by specific faiths were not significant in predicting drug use or attitudes. Thus, the data presented here combine all Judeo-Christian traditions in the sample in focusing on the general effect of religiosity rather than on religiosity within particular traditions.

7. All of the inter-item correlations were positive and statistically significant ($p < .01$) in this sample and the item-total score correlations ranged from .66 to .76, thus indicating sufficient inter-item reliability for this index.

8. Humphrey, Leslie, and Brittain's (1989) study of southern university women also found that their measure of religious observance is negatively and significantly associated with alcohol and marijuana use. They characterize this finding as evidence of a "contingency model," by arguing that it has occurred in a relatively secular college environment where normative ambiguity about alcohol and other drugs typically exists. Yet they might have found the same negative association between religious observance and drug use for women in a less secular college campus or in the same campus settings at a time when there was less ambiguity about drug norms if they had such comparative data available. Thus their "contingency model" for women is simply an assumption with no comparative empirical support. Their findings equally can be interpreted as another example of a consistent bivariate relationship for collegiate women regardless of context.

9. Tittle and Welch's (1983) study makes the opposite claim, however, that the salience of individual religiosity is greatest in more secular contexts and Cochran and Akers' (1989) research found no compelling evidence in support of either position.

REFERENCES

- Bachman, J.G., L.D. Johnston and P.M. O'Malley. 1990. "Explaining the Recent Decline in Cocaine Use among Young Adults: Further Evidence That Perceived Risks and Disapproval Lead to Reduced Drug Use." *Journal of Health and Social Behavior* 31:173-184.
- Bachman, J.G., L.D. Johnston, P.M. O'Malley, and R.H. Humphrey. 1988. "Explaining the Recent Decline in Marijuana Use: Differentiating the Effects of Perceived Risks, Disapproval, and General Lifestyle Factors." *Journal of Health and Social Behavior* 29:92-112.
- Berkowitz, A.D. and H.W. Perkins. 1987. "Recent Research on Gender Differences in Collegiate Alcohol Use." *Journal of American College Health* 36:123-129.
- Burkett, S.R. and M. White. 1974. "Hellfire and Delinquency: Another Look." *Journal for the Scientific Study of Religion* 13:455-462.
- Cochran, J.K. 1988. "The Effect of Religiosity on Secular and Ascetic Deviance." *Sociological Focus* 21:293-306.
- . 1991. "The Effects of Religiosity on Adolescent Self-Reported Frequency of Drug and Alcohol Use." *Journal of Drug Issues* 22:91-104.
- Cochran, J.K. and R.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(3):198-225.
- Cochran, J.K., L. Beegley, and E.W. Bock. 1988. "Religiosity and Alcohol Behavior: An Exploration of Reference Group Theory." *Sociological Forum* 3:256-276.
- Elifson, K.W., D.M. Petersen, and C. K. Hadaway. 1983. "Religiosity and Delinquency." *Criminology* 21:505-527.

- Engs, R.C. and D.J. Hanson. 1989. "Gender Differences in Drinking Patterns and Problems among College Students: A Review of the Literature." *Journal of Alcohol and Drug Education* 35:36-47.
- Gorsuch, R.L. and S.G. McFarland. 1972. "Single vs. Multiple-Item Scales for Measuring Religious Values." *Journal for the Scientific Study of Religion* 11:53-64.
- Hadaway, C.K., K.W. Elifson, and D.M. Petersen. 1984. "Religious Involvement and Drug Use Among Urban Adolescents." *Journal for the Scientific Study of Religion* 23:109-128.
- Hanson, D.J. and R.C. Engs. 1987. "Religion and Collegiate Drinking Problems Over Time." *Psychology: A Quarterly Journal of Human Behavior* 24:10-12.
- Hirschi, T. and R. Stark. 1969. "Hellfire and Delinquency." *Social Problems* 17:202-213.
- Humphrey, J.A., P. Leslie, and J. Brittain. 1988. "Religious Participation, Southern University Women, and Abstinence." *Deviant Behavior* 10:145-155.
- Jensen, G.F. and M.L. Erickson. 1979. "The Religious Factor and Delinquency: Another Look at the Hellfire Hypothesis." Pp. 157-177 in *The Religious Dimension*, edited by R. Wuthnow. New York: Academic Press.
- Johnston, L.D., P.M. O'Malley, and J.G. Bachman. 1991. *Drug Use Among American High School Seniors, College Students and Young Adults, 1975-1990. Volume II: Collegiate Students and Young Adults*. Rockville, Maryland: National Institute on Drug Abuse.
- Knudten, R.D. and M.S. Knudten. 1971. "Juvenile Delinquency, Crime, and Religion." *Review of Religious Research* 12:130-152.
- Linden, R. and R. Currie. 1977. "Religiosity and Drug Use: A Test of Social Control Theory." *Canadian Journal of Criminology and Corrections* 19:346-355.
- Nelsen, H.M. and J.F. Rooney. 1982. "Fire and Brimstone, Lager and Pot: Religious Involvement and Substance Use." *Sociological Analysis* 43:247-256.
- Peek, C.W., G.D. Lowe, and L.S. Williams. 1991. "Gender and God's Word: Another Look at Religious Fundamentalism and Sexism." *Social Forces* 69:1205-1221.
- Perkins, H.W. 1985. "Religious Traditions, Parents, and Peers as Determinants of Alcohol and Drug Use among College Students." *Review of Religious Research* 27:15-31.
- _____. 1987. "Parental Religion and Alcohol Use Problems as Intergenerational Predictor of Problem Drinking among College Youth." *Journal for the Scientific Study of Religion* 26:340-357.
- _____. 1991. "Confronting Misperceptions of Peer Drug Use Norms among College Students: An Alternative Approach for Alcohol and Other Drug Education Programs." Pp. 111-129 in *Peer Prevention Program Resource Manual*, edited by V. Roper. Fort Worth, TX: The Higher Education Leaders/Peers Network, Texas Christian University.
- _____. 1992. "Gender Patterns in Consequences of Collegiate Alcohol Abuse: A Ten Year Study of Trends in an Undergraduate Population." *Journal of Studies on Alcohol* 53:458-462.
- Perkins, H.W. and A.D. Berkowitz. 1986. "Perceiving the Community Norms of Alcohol Use among Students: Some Research Implications for Campus Alcohol Education Programming." *International Journal of the Addictions* 21:961-976.
- Rohrbaugh, J. and R. Jessor. 1975. "Religiosity in Youth: A Personal Control Against Deviant Behavior." *Journal of Personality* 43:136-155.
- Stark, R. 1984. "Religion and Conformity: Reaffirming a Sociology of Religion." *Sociological Analysis* 45:273-282.
- Stark, R., L. Kent, and D.P. Doyle. 1982. "Religion and Delinquency: The Ecology of a Los Angeles Relationship." *Journal of Research in Crime and Delinquency* 19:4-24.
- Tittle, C.R. and M.R. Welch. 1983. "Religiosity and Deviance: Toward a Contingency Theory of Constraining Effects." *Social Forces* 61:653-682.
- Turner, C.J. and R.J. Willis. 1979. "The Relationship Between Self-Reported Religiosity and Drug Use by College Students." *Journal of Drug Education* 9:67-78.

Wechsler, H. and M. McFadden. 1979. "Drinking among College Students in New England: Extent, Social Correlates and Consequences of Alcohol Use." *Journal of Studies on Alcohol* 49:969-996.