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Abstract

Previous research finds drug-using peers and religiosity to be key predictors of drug use among youth, but the effects of childhood exposure to drug users and religion on later drug use have been understudied. The authors hypothesize a child's exposure to parental drug use and religious upbringing have a causal influence on drug use in youth primarily through drug-using peer association and religiosity during adolescence and young adulthood. To test this hypothesis, the authors analyze nationally representative three-wave panel data spanning ages 6 to 22. Results from estimating a structural equation model provide empirical support for the hypothesis, as the causal influence was found to be indirect via the proximate predictors of drug use among youths; that is, childhood risk and protective factors were positively associated with their adolescent and young adulthood counterparts, which in turn had a causal effect on drug use by youth.

Keywords

drug use, exposure to drug user, religiosity

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Prior research tends to confirm exposure to drug users, like peers, is a key predictor of drug use during adolescence and young adulthood (Hawkins, Catalano, & Miller, 1992; Thornberry & Krohn, 1997). Also, criminological studies provide empirical evidence that religiosity or religious involvement is likely to decrease crime and deviance, especially ascetic deviance like drug use (Jang & Johnson, 2003; Johnson, Li, & McCullough, 2000). Furthermore, the causal influence of risk and protective factors of drug use tends to be explained generally by control, social learning, and strain theories (Jang, 2002; Jang & Johnson, 2003).

However, researchers have rarely studied the long-term effects of childhood exposure to drug users and religion on later drug use, favoring instead the examination of contemporaneous effects of drug-using peer association and religiosity on drug use during adolescence and young adulthood. This is partly due to the unavailability of longitudinal data collected from childhood through the young adult years. Consequently, we have only limited research on the influence of a child's exposure to drug users and religion on subsequent drug use. Without taking into account these childhood factors, the explanation of drug use among adolescents and young adults remains incomplete (Rutter, 1996). This limitation is unfortunate since prevention and intervention researchers have already shown different risk and protective factors of drug use are salient at different points of child or adolescent development (Hawkins et al., 1992).

To fill this gap in knowledge, we use panel data, collected from a nationally representative sample of American children interviewed and reinterviewed when they were adolescents and then young adults, spanning ages 6 to 22. Specifically, we hypothesize a child's exposure to parental drug use and religious upbringing have a causal influence on drug use in youth primarily through drug-using peer association and religious involvement during adolescence and young adulthood; that is, the childhood risk and protective factors of drug use are likely to affect the probability of the child's later use of drugs by having causal effects on their adolescent and young adulthood counterparts (i.e., association with drug-using friends and religiosity), which are the proximate causes of drug use in youth. To test this hypothesis, we apply latent-variable structural equation modeling to estimate a three-wave panel model. Before presenting our theoretical model, a brief review of the literature on drug use is in order.

Previous Studies

A review of prior research reveals various factors explaining drug use among adolescents and young adults, including parental drug use, family disruption,

emotional distress, attachment to parents, association with drug-using peers, and religious involvement (Hawkins et al., 1992; Thornberry & Krohn, 1997). Among them, we focus here on two key predictors of drug use, a risk factor—exposure to drug users (parents and peers), and a protective factor—religion (religious upbringing and religiosity).

Exposure to Drug Users

Previous studies tend to confirm an individual's exposure to others who use drugs, whether licit or illicit, is a key predictor of drug use (Hawkins et al., 1992; Thornberry & Krohn, 1997), and Akers' social learning theory provides an explanation of this causal influence. For example, children growing up seeing their parents smoke, drink, or even use illicit drugs are likely to imitate their parents' drug-using behaviors. Such observational learning is expected to have an especially significant impact on the initiation of drug use (Akers, 1985). In addition, drug-using parents are likely to socialize their children to consider drug use as an acceptable lifestyle and thus develop favorable attitudes toward drug use. Parental modeling is also expected to have an indirect effect on a child's drug use, as it increases the probability of his or her making friends with those who use drugs, which in turn increases the likelihood of drug use (Hawkins et al., 1992).

Association with drug-using peers has consistently been found to be one of the strongest predictors of drug use among youth, and its influence is mostly explained by social learning variables of prodrug definitions, differential reinforcement, and imitation (Hawkins et al., 1992; Thornberry & Krohn, 1997). Compared to drug-using parents, drug-using friends are likely to be aggressive, unapologetic agents of prodrug socialization through the mechanism of differential reinforcement and "peer pressure" as well as imitation and changes in attitudes toward drug use. As a result, peer influence on drug use tends to be stronger than parental influence for all ethnic groups (Kandel, Kessler, & Margulies, 1978). Also, like parental drug use, drug-using peers offer nonusers an opportunity structure in which drugs are immediately available and easily accessible (Hawkins et al., 1992; Kandel, 1996).

In sum, prior research provides empirical support for the causal influence of exposure to drug users, whether parents or peers, on drug use among youth. However, what has been studied less often is a causal link between a child's exposure to parental drug use and his or her later association with peer drug users. Without examining the sequence, an explanation of drug use among adolescents and young adults would be incomplete given the anticipated consequence of being raised by drug-using parents. That is to say, a child who is

raised seeing his or her parents using drugs is more likely to be associated with peers who use drugs than those who do not. Put differently, to the extent that a child's exposure to parental drug use leads to his or her interactions with drug-using friends in adolescence and young adulthood, an explanatory model of drug use in youth that omits the childhood factor would be misspecified.

Religion

There is considerable evidence that religion helps protect youth from illicit drug use, underage drinking, and smoking, as well as crime and delinquency (Johnson, Li et al., 2000; Nonnemaker, McNeely, & Blum, 2003). These protective effects persist even if there is no established social control against such behaviors in the surrounding community (Johnson, Jang, Li, & Larson, 2000). Furthermore, a recent study shows religious involvement has a cumulative effect throughout adolescence and young adulthood that may reduce the risk of later adult drug use (Jang, Bader, & Johnson, 2008). Researchers explain these effects in terms of religious involvement providing informal social control, fostering prosocial learning, and weakening the effects of distress on drug use (Schulenberg & Maggs, 2002; Windle, Mun, & Windle, 2005).

Previous studies also confirm the multidimensionality of religiosity, whereby different aspects of religious involvement tend to be negatively associated with drug use (Chawla, Neighbors, Lewis, Lee, & Larimer, 2007; Wechsler, Dowdall, Davenport, & Castillo, 1995). For example, previous studies confirm not only religious perceptions and beliefs (e.g., religious salience and believing in divine punishment) but also religious practice and participation (e.g., praying and attending religious services) are important in explaining religious effects on drug use. Furthermore, behavioral measures of religiosity tend to have stronger effects on crime and deviance than their nonbehavioral counterparts. Another aspect of religiosity relevant to research on drug use concerns religious denomination, specifically, whether an individual is affiliated with conservative religion or not. Based on the Monitoring the Future data, for example, Wallace, Brown, Bachman, and Laveist (2003) found black students (who reported less use of drugs than their white peers) not only attend religious services more regularly and report a greater perceived importance of religion but also indicate being affiliated with a theologically more conservative denomination compared to white students.

To date, Steensland and his associates (2000) have proposed perhaps the best religious classification scheme based on their critical assessment of new trends in religious affiliation as well as the historical development of American

religious traditions. Their scheme includes six categories of religious affiliation: mainline Protestant, evangelical Protestant, black Protestant, Roman Catholic, Jewish, and Other (e.g., Mormon, Muslim, Hindu, and Unitarian). They argue denominations strongly influence social life by promoting worldviews that shape members' views on political, economic, and social or moral issues. They conclude evangelical Protestants are more conservative than the other three largest religious traditions in America (i.e., mainline Protestant, black Protestant, and Roman Catholic). Thus, religious denomination is expected to affect whether or not members take a conservative stance on use of drugs, licit as well as illicit. Steensland et al. also suggest parental religious affiliation influences a child's religiosity as the denominational culture becomes a more significant part of childhood socialization.

Thus, in this study we focus on the effects of religious affiliation as well as religious involvement on drug use in youth. Specifically, we examine whether an individual's religious affiliation during childhood (especially a conservative denominational background) is causally related to his or her drug use during adolescence and young adulthood. We then seek to determine whether the causal influence of religious upbringing is direct or indirect via religious involvement in youth.

The Present Study

This study examines whether and how childhood predictors of drug use are associated with their adolescent and young adulthood counterparts as well as drug use by youth. Social learning theory posits the direct, contemporaneous influence of parents' drug use and religiosity on their children. We, however, expect the childhood predictors' influence on drug use in youth to be mainly indirect because this study specifies the influence as long-term, being lagged over several years between childhood and adolescence and more than 10 years between childhood and young adulthood. Specifically, we hypothesize as follows:

Hypothesis 1: Childhood exposure to parental drug use increases drug use in youth by raising the risk of drug-using peer association, which in turn increases the probability of using drugs in adolescence and young adulthood.

Hypothesis 2: Conservative religious upbringing decreases drug use in youth by increasing the chance of later involvement in religion, which in turn decreases the risk of drug use in adolescence and young adulthood.

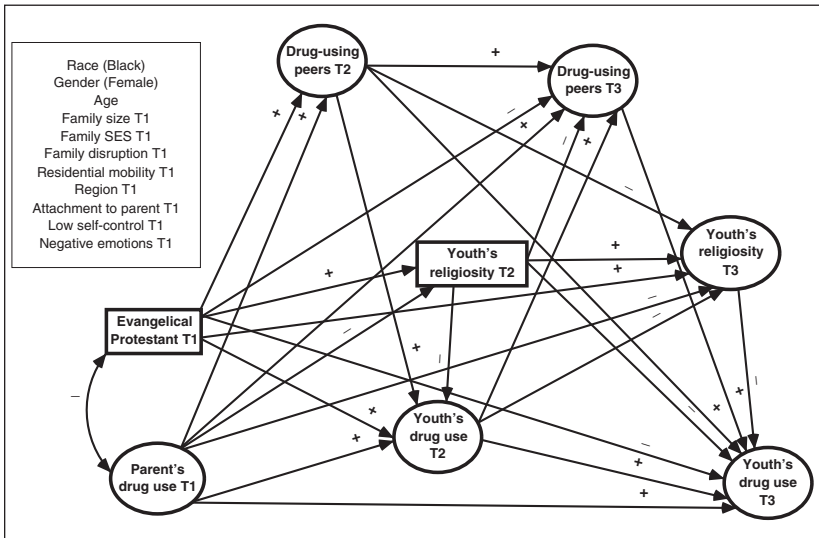


Figure 1. Theoretical model of youth's drug use during adolescence and young adulthood

To test these hypotheses, we estimate a three-wave, structural equation model shown in Figure 1, where ovals and rectangles represent latent and manifest variables, respectively. First, besides sociodemographic and theoretical controls (i.e., attachment to parent, low self-control, and negative emotions), the theoretical model includes two exogenous variables at Time 1 (childhood): conservative religious upbringing (i.e., whether a person was raised in an evangelical Protestant tradition), and exposure to parent's smoking, drinking, and/or using illegal drugs. These two explanatory variables are hypothesized to have primarily indirect effects on drug use by youth via the other two explanatory variables of adolescence (Time 2) and young adulthood (Time 3): association with drug-using peers and religiosity. Direct effects are also estimated to avoid model misspecification by forcing the effects to be zero. To reduce visual clutter, Figure 1 does not show measurement model (i.e., indicators of latent variables, error terms of both latent and manifest variables, and error correlations) as well as structural paths from the exogenous (i.e., sociodemographic and theoretical controls) to endogenous variables. However, the measurement model and the structural effects of exogenous variables at Time 1 on all endogenous variables at both Times 2 and 3 are estimated.

Next, contemporaneous relationships among the three endogenous variables within each postchildhood stage of development are modeled so that

youth's associations with drug-using peers and religiosity have direct effects on drug use during adolescence and young adulthood. On the other hand, we specified the two antecedents of youth's drug use to be negatively associated with each other via correlation between their residual terms at Times 2 and 3 (not shown in Figure 1) without imposing any particular causal order between the two.

We apply latent variable structural equation modeling to estimate the theoretical model because the modeling approach enables us to build measurement as well as structural model so that we may control for measurement errors. This modeling advantage is particularly relevant to the present study because our data include repeated and retrospective measures, whose errors are expected to be positively correlated with each other over time. Specifically, we expect measurement errors of each repeated item to be correlated over time due to memory effects, random response errors, and/or unique variance in the items that tend to remain stable, estimating three pairs of first-order autocorrelations between Times 2 and 3 (not shown in Figure 1). The other error correlations are specified in relation to retrospective measures and are explained below when the measures are described.

Method

Data

Data to test our hypotheses come from the National Survey of Children (NSC). The NSC is a three-wave panel study, conducted in 1976 (Wave 1), 1981 (Wave 2), and 1987 (Wave 3), based on a nationally representative sample of children living in households in the 48 contiguous states (Zill, Furstenberg, Peterson, & Moore, 1990). When interviewed for the first wave, children born between September 1, 1964, and December 31, 1969, were 6 to 12 years old; they were reinterviewed when they were 11 to 16 years old (Wave 2)¹ and then again when they were 17 to 22 years old (Wave 3). A multistage stratified probability sampling design generated a list of 2,193 households containing one or more eligible children. Data were obtained for 2,301 children based on interviews with 2,279 children and the parent most knowledgeable about the child (usually the mother) in 1,747 households, resulting in a completion rate of 80%.

Wave 2 of the survey was based on reinterviews with a subsample of those originally studied in 1976 because the focus of the 1981 survey was the effects of marital conflict and disruption on children. Specifically, the subsample included 1,350 of the 1,747 families of the Wave 1 sample. Given the second survey's focus, all of the 716 families from Wave 1 classified as "disrupted

and reconstituted families” were included in the Wave 2 sample (i.e., sampled with certainty) so that reinterviews might be sought with all children who were found in 1976 to be living in a high conflict or disrupted family in terms of family structure. On the other hand, only 634 of 1,031 “stable families” were included in the Wave 2 sample. To adjust for the differential rates of selection (i.e., oversampling “disrupted and reconstituted families” and undersampling “stable families”), new weights were developed. Ninety percent of the children were relocated, and interviews were obtained with more than 90% of those located, yielding an overall response rate of 82% among those selected for follow-up. Telephone interviews were conducted with the child and the more knowledgeable parent. A total of 1,423 children completed the second interview.

Finally, a total of 1,151 Wave 3 interviews were completed with 1,147 interviews with youth and 4 interviews with parents whose child had died, yielding a response rate of 82%. Between the first and third waves, 68% of the original sample had been interviewed. Because this attrition was not random, the data were reweighted using race, age, sex, city size, family income, and the number of years the family had lived at the current address in Wave 1 to reduce biases introduced by selective attrition. In addition, as mentioned previously, an adjustment was made for the subsampling between Waves 1 and 2. The weighted data are thus “representative of the U.S. population of children born between September 1964 and December 1969 and living in the U.S. in 1976” (Moore & Peterson, 1989, p. 10).

Weighted merged data of Waves 1 to 3 contain a total of 1,083 child/youth respondents (918 whites, 84.8%, and 165 blacks, 15.2%), who participated in all three surveys and have weights to adjust for the oversampling of black children (Wave 1) and the “disrupted and reconstituted families” (Wave 2) as well as selective attrition at Wave 3.²

Measurement

Evangelical Protestant. To measure whether the youth respondent was raised in a conservative religious tradition, we used an item from the Wave 1 parent survey, which asked, “In what religion, if any, are you raising your child(ren)? What denomination is that?” Parent respondents’ answers were classified into 20 categories of religious denomination. Based on Steensland et al.’s (2000) classification scheme, we constructed a dummy variable indicating whether the child was raised in an evangelical Protestant religion.

Youth’s religiosity. Items of youth’s religiosity are available at Waves 2 and 3. In the second survey, parents were asked about frequency of their children’s

attendance at religious services, including Sunday School or other religious class (1 = *not at all*, 2 = *a few times a year or less*, 3 = *two or three times a week*, 4 = *about once a week*, 5 = *more than once a week*), whereas children were asked how much they liked or disliked going to church, Synagogue, or Sunday School (1 = *hate*, 2 = *don't like*, 3 = *not sure*, 4 = *like*, 5 = *love*). We constructed a measure of youth's religiosity by combining the two, multiplying the former by the latter to use the child's attitude toward religious activities as a weight variable for religious participation. This was based on the assumption that adolescents who are the same in frequency of service attendance are likely to be different in religiosity, depending on whether they liked attending religious services or class. On the other hand, the youth's Wave 3 survey included five items regarding perceived importance of religion (religious salience) and belief about the Scriptures (religious literalism) as well as frequency of service attendance, other religious activities, and prayer. Exploratory factor analyses generated a single-factor solution with high loadings, ranging from .45 to .79, and the items' internal reliability was found to be high ($\alpha = .79$).

Parent's drug use. In the Wave 3 survey, youth respondents were asked three retrospective questions regarding whether their parents drank, smoked, and/or used illicit drugs, while they were growing up (between the ages of about 8 and 14). This period of measurement largely overlaps the time of the Wave 1 survey, when the respondents were 7 to 12 years old, and consequently, we use these items as Time 1 measures. Because the three questions about parent's drug use were answered by the youth respondent who self-reported his or her own use or nonuse of drugs, response errors associated with each of the questions are likely to be correlated with response errors of each self-reported drug use item given their likely projection or attribution with respect to parents (Kandel, 1996). So we estimated three pairs of second-order autocorrelations between Times 1 and 3.

Three items of parent's drug use, specifically, alcohol use, tobacco use, and illegal drug use, have acceptable interitem reliability ($\alpha = .60$) and were loaded on a single factor with loadings of .56, .42, and .42, respectively. Similarly, youth respondents were asked to self-report their own use of drugs, licit and illicit, at Waves 2 and 3. Specifically, they were asked whether they used alcohol (other than just a sip), tobacco, and marijuana or other drugs (e.g., cocaine, crack, LSD, etc.) during the past 2 weeks (Wave 2) and the past 12 months prior to the survey (Wave 3). The three items have an acceptable interitem reliability in each wave (.70 and .60), being loaded on a single factor with high loadings (.66 to .67 at Wave 2, .55 to .61 at Wave 3).

Drug-using peers. To operationalize peer influence on drug use, we used four items included in the last survey. Although they are Wave 3 items, two of them

concern whether or not the youth respondent's friends pressured them to use alcohol and illegal drugs during their "teen years." This measurement period not only overlaps more with the Wave 2 survey time (when the youth were 11 to 16 years old) than the Wave 3 (when the youth were 17 to 22 years old), but the phrase "teen years," culturally speaking, is more likely to have meant early to middle adolescence (ages 13 to 16) rather than later adolescence (ages 17 to 19) to respondents. For these reasons, we use the two items of peer pressure for drug use as Time 2 rather than Time 3 measures. The other two peer items, however, asked the respondents how many of their friends drank any kind of alcohol and/or used illegal drugs when they were 16. Whereas this coincides with the age of the oldest cohort of the Wave 2 sample, the other 5 cohorts of respondents turned 16 between Waves 2 and 3. Therefore, we use the two items of drug-using peer association as Time 3 measures.

We thus anticipate response errors of the four peer drug use items—two at Times 2 and 3 each—to be positively correlated with those of the two relevant indicators of youth's drug use (i.e., two error correlations associated with drinking and two associated with illegal drug use); that is, the youth respondent's reports of peer drug use or peer pressure for drug use could be a result of imputing his or her own qualities (i.e., drug use) to his or her friends (Gottfredson & Hirschi, 1990; Kandel, 1996). The two pairs of peer drug use items—two items of alcohol use and two items of illegal drug use, one at Time 2 and the other at Time 3 each—are also expected to have their response errors correlated because both survey items of each pair were answered by the same respondent regarding the same type of drug. Thus, we estimated two additional measurement error correlations.

Controls. To control not only for sources of spuriousness but also alternative explanations of the effects of religiosity and the two social learning variables (i.e., parent's and peer drug use), we constructed theoretical and sociodemographic variables using Wave 1 data. First, measures of three major theories of drug use other than social learning theory were constructed: social control, self-control, and general strain theory. For social control theory, we used an item measuring the child's sensitivity to embarrassment to their parents, which is an important dimension of Hirschi's (1969) social-bonding element, attachment to parent: "Compared to other children of (your child's) age, how well does (your child) behave?" (1 = *much worse*, 2 = *worse*, 3 = *about the same*, 4 = *better*, 5 = *much better*). Second, we constructed a three-item measure of low self-control (Gottfredson & Hirschi, 1990) based on the parent survey data.³ The items tap the dimensions of impulsivity, risk-taking, and indifference to other people's pain or loss, showing relatively high factor loadings (.42, .42, and .67), though interitem reliability is rather low ($\alpha = .50$). Third,

Agnew's (1992) concept of negative emotions is measured by four items of emotional distress, which have marginally acceptable reliability ($\alpha = .59$) but moderate-to-high factor loadings, ranging from .34 to .75.

We also control for sociodemographic characteristics that tend to be correlated with drug use as well as religiosity and exposure to drug users (Jang, 2002; Martino, Ellickson, & McCaffrey, 2008). Included are the child's race (0 = white, 1 = black), gender (0 = male, 1 = female), age, region of residence at the first survey (dummy variables of Northeast, Midwest, and West with South being reference category), family size (i.e., number of children living in the household), family socioeconomic status (sum of standardized scores of family income, parent's education, and parent's occupational prestige),⁴ family disruption (0 = parents being married, widowed, or never married; 1 = parents being divorced or separated), and residential mobility (number of moves during the last 5 years prior to the initial survey).

Results

For the treatment of missing data, our structural equation modeling program (Amos 16.0) uses full information maximum likelihood (FIML), which tends to generate unbiased, efficient, and consistent estimates relative to other approaches like data imputation as well as listwise or pairwise deletion (Arbuckle & Wothke, 1995). For statistical significance ($\alpha = .05$), we conducted one-tailed tests for hypothesized relationships, and two-tailed tests for non-hypothesized ones, including any relationship whose direction is opposite to our expectation.

Table 1 reports descriptive statistics and frequency distributions of variables included in our analysis. The final weighted sample ($n = 1,083$) is 15.2% black and 48.9% female, and the average age of child respondents at Wave 1 was 9.04 years,⁵ and a majority (87.0%) of respondents were living with both biological parents at the time of the first survey. As a result of the NSC's oversampling of blacks, households in the South (35.7%) were more likely to be selected than those in the Northeast (23.5%), Midwest (32.3%), and West (8.6%). Most child respondents (91.5%) were being raised in some religion, with Evangelical Protestant (42.1%) being the most common religious tradition at the time of the initial survey.

Figure 2 shows only significant (standardized) coefficients to simplify graphic presentation, whereas all structural coefficients (including the effects of theoretical and sociodemographic controls on endogenous variables) and correlations between residuals of endogenous variables (i.e., drug-using peers and youth's religiosity at Times 2 and 3) are reported separately in a table

Table 1. Descriptive Statistics and Frequency Distribution of Variables (Weighted)

Variables	Mean	SD	Minimum	Maximum	<i>n</i>
Race (black)	0.152	0.359	0	1.000	1,083
Gender (female)	0.489	0.500	0	1.000	1,083
Age, Time 1	9.044	1.617	6.000	12.000	1,083
Family size, Time 1	3.342	1.617	1.000	7.000	1,083
Family SES, Time 1	0.060	2.377	-9.330	7.240	1,083
Family disruption, Time 1	0.130	0.336	0	1.000	1,083
Residential mobility, Time 1	1.336	1.715	0	15.000	1,083
Attachment to parent, Time 1	3.599	0.762	1.000	5.000	1,080
Low self-control, Time 1	5.826	2.348	3.000	18.000	1,083
Negative emotions, Time 1	-0.015	2.653	-5.300	8.210	1,083
Parent's use of alcohol, Time 1	-0.000	1.008	-1.570	4.751	1,068
Parent's use of tobacco, Time 1	0.011	1.004	-1.192	1.791	1,069
Parent's use of illicit drugs, Time 1	-0.009	0.975	-2.216	4.370	1,061
Raised in evangelical Protestant, Time 1	0.421	0.494	0	1.000	1,083
Youth's religiosity, Time 2	12.636	5.221	1.000	20.000	1,047
Youth's religiosity, Time 3					
Service attendance	0.013	1.008	-1.444	1.300	1,069
Religious activities	0.014	1.010	-0.724	3.018	1,069
Scriptures	0.028	0.994	-2.170	1.480	1,040
Pray	0.020	0.992	-2.075	1.375	1,069
Religious salience	0.006	0.994	-1.707	1.063	1,066
Peer use of alcohol, Time 2	-0.004	1.002	-1.437	0.695	1,069
Peer use of illicit drugs, Time 2	-0.020	0.994	-0.762	1.311	1,070

(continued)

Table 1. (continued)

Variables	Mean	SD	Minimum	Maximum	<i>n</i>
Peer use of alcohol, Time 3	-0.017	0.995	-1.757	1.590	1,065
Peer use of illicit drug, Time 3	-0.009	1.007	-1.010	2.931	1,048
Youth's use of alcohol, Time 2	-0.016	0.997	-0.823	2.068	1,056
Youth's use of tobacco, Time 2	0.005	0.991	-0.767	2.237	1,056
Youth's use of illicit drugs, Time 2	-0.007	1.011	-0.370	7.222	1,058
Youth's use of alcohol, Time 3	-0.005	1.005	-1.717	1.923	1,069
Youth's use of tobacco, Time 3	0.005	1.005	-0.934	1.519	1,063
Youth's use of illicit drugs, Time 3	0.007	1.010	-0.677	5.883	1,069

Variable	Category	Frequency	%	Cumulative %
Region of residence, Time 1	Northeast	255	23.5	23.5
	Midwest	349	32.3	55.8
	South	386	35.7	91.4
	West	93	8.6	100.0
	Total	1,083	100.0	
Religion child was raised in Time 1	Evangelical Protestant	456	42.1	42.1
	Mainline Protestant	248	22.9	65.0
	Catholic	264	24.4	89.5
	Jewish	7	.6	90.1
	Other religion	15	1.4	91.5
	None/No religion	93	8.5	100.0
	Total	1,083	100.0	

Note: $n = 1,083$.

(see below). As anticipated, the model's chi-square statistic was found to be significant, $\chi^2 = 1,040.068$, $df = 288$, $p < .05$, due to a large sample, but other measures generally show good model fit regardless of type: absolute—fit ratio,

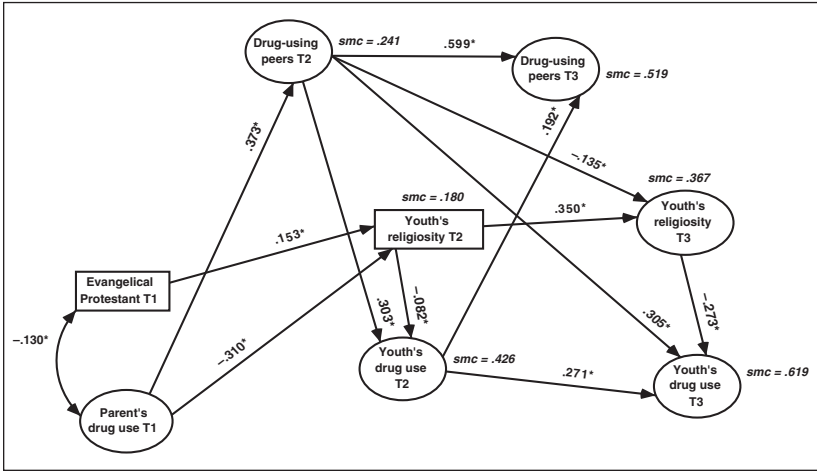


Figure 2. Structural equation model of youth's drug use during adolescence and young adulthood

Note: Only significant (standardized) coefficients are presented; *smc* = squared multiple correlation (i.e., R^2).

* $p < .05$ (one-tailed test).

$\chi^2/df = 1040.068/288 = 3.611$; parsimonious, RMSEA = .048, “close fit”; and, to a lesser extent, incremental, NFI = .880 and CFI = .907, fit. In addition, Hoelter’s Critical N is higher than the cutoff of 200 (CN = 355, $\alpha = .05$), indicating a good fit. Before we discuss whether our hypotheses received empirical support, we first examine the estimated measurement model.

Measurement Model

The top two panels of Table 2 show estimated measurement model. First, indicators’ loadings on the latent construct are mostly high, ranging from .378 to .768 (see the first panel), and measurement error correlations tend to be significant and positive, as expected (see the second panel). Specifically, the first-order autocorrelations of the repeated items’ measurement errors of youth’s drug use at Time 2 and 3 were all significant in the expected direction (i.e., .092, .306, and .200). Also, one of the three measurement error correlations between parent’s drug use at Time 1 and youth’s drug use at Time 3 items was found to be significant and positive (.125), indicating the youth respondent’s attribution of their own behaviors to their parents’ was limited to the item about alcohol use.

Table 2. Estimated Measurement and Structural Models: Standardized Coefficients

Indicators	Drug use, Time 1		Drug-using peers, Time 2		Youth's drug use, Time 2		Drug-using peers, Time 3		Youth's drug use, Time 3		Youth's religiosity, Time 3	
	A	T	A	ID	A	T	A	ID	A	T	A	ID
Alcohol use (A)		0.563f	0.492f		0.733f		0.701f		0.632f			—
Tobacco use (T)		0.497*	—		0.662*		—		0.546*			—
Illegal drug use (ID)		0.378*	0.655*		0.620*		0.680*		0.676*			—
Religious services		—	—		—		—		—			0.768f
Religious activities		—	—		—		—		—			0.585*
Prayer		—	—		—		—		—			0.761*
Religious salience		—	—		—		—		—			0.752*
Religious literalism		—	—		—		—		—			0.474*
Measurement errors	Parent's drug use, Time 1		Drug-using peers, Time 2		Youth's drug use, Time 2		Drug-using peers, Time 3		Youth's drug use, Time 3			
	A	T	A	ID	A	T	A	ID	A	T	A	ID
Parent's drug use, Time 1-A	1.000											
Parent's drug use, Time 1-T	—	1.000										

(continued)

Table 2. (continued)

Measurement errors	Parent's drug use, Time 1			Drug-using peers, Time 2			Youth's drug use, Time 2			Drug-using peers, Time 3			Youth's drug use, Time 3			
	A	T	ID	A	ID	A	T	ID	A	ID	A	T	ID	A	T	ID
Parent's drug use, Time 1-ID	—	—	1.000	—	—	—	—	—	—	—	—	—	—	—	—	—
Drug-using peers, Time 2-A	—	—	—	1.000	—	—	—	—	—	—	—	—	—	—	—	—
Drug-using peers, Time 2-ID	—	—	—	—	1.000	—	—	—	—	—	—	—	—	—	—	—
Youth's drug use, Time 2-A	—	—	—	—	—	1.000	—	—	—	—	—	—	—	—	—	—
Youth's drug use, Time 2-T	—	—	—	—	—	—	1.000	—	—	—	—	—	—	—	—	—
Youth's drug use, Time 2-ID	—	—	—	—	—	—	—	1.000	—	—	—	—	—	—	—	—
Drug-using peers, Time 3-A	—	—	—	0.188*	—	—	—	—	1.000	—	—	—	—	—	—	—
Drug-using peers, Time 3-ID	—	—	—	—	0.154*	—	—	—	—	1.000	—	—	—	—	—	—
Youth's drug use, Time 3-A	0.125*	—	—	0.226*	—	0.092*	—	—	—	0.182*	—	—	—	1.000	—	—
Youth's drug use, Time 3-T	—	0.039	—	—	—	—	0.306*	—	—	—	—	—	—	—	1.000	—
Youth's drug use, Time 3-ID	—	—	-0.023	—	0.064	—	—	0.200*	—	—	0.225*	—	—	—	—	1.000

(continued)

Table 2. (continued)

Exogenous/endogenous variables	Drug-using peers, Time 2	Youth's religiosity, Time 2	Youth's drug use, Time 2	Drug-using peers, Time 3	Youth's religiosity, Time 3	Youth's drug use, Time 3
Black	-0.063	-0.013	-0.110*	0.031	0.166*	-0.077*
Female	-0.202*	0.122*	-0.073*	0.000	0.133*	-0.045
Age	0.147*	-0.071*	0.413*	-0.151*	0.042	-0.005
Family size, Time 1	0.095*	0.017	0.067*	-0.005	0.097 [†]	-0.008
Family SES, Time 1	-0.004	0.094*	0.023	-0.034	0.067*	0.114*
Family disruption, Time 1	-0.009	-0.010	-0.027	-0.021	0.014	-0.004
Residential mobility, Time 1	0.022	-0.052*	0.008	-0.037	-0.054*	-0.012
Northeast, Time 1	0.077	-0.128 [†]	0.160 [†]	0.044	-0.174 [†]	-0.023
Midwest, Time 1	0.082	-0.007	0.130 [†]	-0.029	-0.182 [†]	-0.018
West, Time 1	0.051	-0.053	0.104 [†]	-0.037	-0.056	-0.015
Attachment to parent, Time 1	-0.004	0.061*	-0.082*	-0.021	-0.032	-0.017
Low self-control, Time 1	0.112*	-0.041	-0.012	-0.032	-0.010	0.025
Negative emotions, Time 1	-0.023	0.016	0.062*	0.031	-0.012	0.016
Parent's drug use, Time 1	0.373*	-0.310*	0.071	0.089	-0.065	0.090
Evangelical Protestant, Time 1	0.012	0.153*	0.031	-0.065	0.010	-0.012
Drug-using peers, Time 2	—	(0.009) ^a	0.303*	0.599*	-0.135*	0.305*
Youth's religiosity, Time 2	—	—	-0.082*	0.011	0.350*	0.046
Youth's drug use, Time 2	—	—	—	0.192*	-0.075	0.271*
Drug-using peers, Time 3	—	—	—	—	(-0.021) ^a	0.112
Youth's religiosity, Time 3	—	—	—	—	—	-0.273*

Note: A = alcohol use, T = tobacco use, ID = illegal drug use, f = fixed coefficient; SES = socioeconomic status.
 a. refers to a correlation between residuals of endogenous variables (i.e., drug-using peers and youth's religiosity)
 *p < .05 (one-tailed test). [†]p < .05 (two-tailed test).

Similarly, we found both correlations between measurement errors of peer use of alcohol at Times 2 and 3 and the youth's alcohol use at Time 3 to be significant (.226 and .182). Furthermore, one of two measurement error correlations for the illicit drug use item was significant at Time 3 (.225), indicating the youth's attribution with respect to their friends (Kandel, 1996). Also, measurement error correlations due to memory effects, random response errors, and/ or unique variance in the items of peer drug use at Time 2 and 3 were found both significant in the expected direction (.188 and .154). These findings, taken together, indicate failure to control not only for measurement errors but that their correlations would have resulted in a biased estimation of the model. Now we turn to the estimated structural model, presented in Figure 2 and Table 2.

Structural Model: Hypothesis 1

As hypothesized, childhood exposure to parental drug use was found to have indirect effects on youth's drug use during adolescence and young adulthood via drug-using peer association. Results from preliminary analysis (not presented here) showed significant direct effects of parental drug use on the youth's own use in adolescence (.208) and young adulthood (.242). The effects, however, became smaller (.099 and .118, respectively), though remaining significant, when drug-using peers at Times 2 and 3 were introduced. They then turned nonsignificant when youth's religiosity at Times 2 and 3 were added (.071 and .090, see Table 2); that is, children raised by parents who used drugs, licit and illicit, were more likely to make friends with peer drug users (.373) during adolescence, which in turn increased the probability of their own use (.303) as Figure 2 as well as Table 2 shows.

The adolescent drug use then increased the chance of having drug-using peers in young adulthood (.192), controlling for drug-using peer association in adolescence (.599). Unlike in adolescence (.303), however, drug-using peer association was found to have no significant effect on drug use in young adulthood (.112; see Table 2). Direct comparison of the two coefficients (i.e., .303 and .112) is not fully warranted because different items were used to measure drug-using peer association at Times 2 and 3. However, to the extent that they are comparable, the observed pattern is consistent with previous findings that peer influence on drug use during young adulthood is less likely to be as strong as during adolescence (Jang, 2002).

Alternatively, it might show peer influence on drug use during young adulthood is likely to be spurious due to association with drug-using friends made during adolescence. When we removed drug-using peer association at Time 2

from the model (not presented here), the peer influence at Time 3 on youth's drug use became significant (.279), confirming the nonsignificant peer influence at Time 3 was likely to indicate a spurious relationship between peer drug use and youth's drug use during young adulthood. In other words, although those who were friends with drug users during adolescence are likely to keep company with drug users after adolescence (.599), drug use during young adulthood may be attributable to the influence of friends made during adolescence (.305) rather than their drug-using peers in young adulthood.⁶

Taken together, these findings empirically support the first hypothesis about a child's exposure to parental drug use primarily having indirect effects on youth's drug use by increasing the youth's associations with drug-using peers. Although not hypothesized, parents' drug use was also found to have another indirect effect by decreasing youth's involvement in religion during adolescence. This indicates a causal mechanism of intergenerational socialization (Kandel, 1996), whereby parental modeling of drug use increases the chance of their children's use of alcohol, tobacco, and illicit drugs after childhood.

Structural Model: Hypothesis 2

Our second hypothesis receives empirical support as well. As expected, the youth's evangelical Protestant background has an indirect effect on youth's drug use through youth's religiosity in adolescence and young adulthood rather than a direct effect (.031 and $-.012$, see Table 2). In fact, preliminary analyses (results not presented here) revealed that conservative religious upbringing had no direct effect on youth's drug use either in adolescence (.016) or young adulthood ($-.046$) even before introducing youth's religiosity. However, youth with an evangelical upbringing were more likely to be religiously involved during adolescence (.153), which in turn increases the probability of religious involvement during young adulthood (.350), making them less likely to use drugs during adolescence ($-.082$) and young adulthood ($-.273$). Consequently, whether religious socialization during childhood makes any difference in later drug use depends on continued religious socialization and parent's encouragement of youth's involvement in religion through adolescence.

Religious upbringing also has indirect effect on youth's drug use via parent's drug use; that is, those who have an evangelical Protestant background are less likely to have been raised by parents who drank alcohol, smoked cigarettes, and used illicit drugs ($-.130$), which otherwise would have increased the chance of making friends with drug users during adolescence (.373) and, as a result, using drugs during adolescence (.303) and young adulthood (.305).

Structural Model: Controls

Although not all exogenous variables were found to have significant direct effects on endogenous variables, the effects that are significant are all in the expected direction (see Table 2). For example, black youth used drugs less than white youth did during adolescence ($-.110$) and young adulthood ($-.077$) and reported higher levels of religiosity than their white counterpart as previous studies confirm (Wallace & Bachman, 1991). Whereas the direct effect of race (being black) on religiosity (i.e., black–white difference in religiosity) was observed only for young adulthood (.166), the race variable has an indirect effect on drug use during adolescence through its associations with religious upbringing and parental drug use (.390 and $-.118$, respectively; not presented in the table); that is, black children were less likely to use alcohol, tobacco, and/or illicit drugs when they became adolescents because they were more likely to have been raised in a conservative religious tradition and by drug-free parents.

Residential mobility was also found to have indirect effects on drug use via its associations with other variables, like family size ($-.150$, not presented). For example, youth who moved frequently during childhood were at a higher risk of drug use than those who were stable because they were likely to grow up in a large family, which increases the probability of making drug-using friends (.095) and using drugs themselves (.067) during adolescence. In addition, though they were confined to adolescence, the three theoretical controls were found to have significant direct effects on endogenous variables. A child's attachment to parents was associated positively with his or her religiosity (.061) and negatively with drug use ($-.082$), whereas low self-control and negative emotional state during childhood increased the chance of having friends using drugs (.112) and using drugs during adolescence (.062).

Discussion and Conclusion

This study was intended to address a relatively understudied topic in drug research: long-term effects of childhood exposure to parental drug use and conservative religious upbringing on drug use in adolescence and young adulthood. As expected, we found the childhood predictors of drug use had long-term effects indirectly via the proximate causes of drug use in youth—association with drug-using peers and religiosity; that is, children whose parents used drugs were at a higher risk of doing the same later in life because they were more likely to make friends with drug-using peers, which increased the youth's drug use in adolescence and young adulthood. Also, children

raised by parents affiliated with a conservative religious denomination (i.e., evangelical Protestant) were more likely to get involved in religion during adolescence and young adulthood, which decreased the chance of drug use in youth.

In sum, we found childhood risk and protective factors (parental drug use and conservative religious upbringing) to have a causal influence on their counterparts in adolescence and young adulthood (peer drug use and religiosity), which in turn affected drug use in youth. Although not hypothesized, we also found some evidence of a crossed causal influence; that is, childhood exposure to parental drug use was found not only to increase the risk of having drug-using peer associations but also to decrease the protective effect of religious involvement on using drugs in adolescence (see Figure 2). On the other hand, conservative religious upbringing had no direct effect on the adolescent risk factor, while having an indirect effect via parental drug use.

It is also worth mentioning that relationships between drug-using peer association and youth's drug use were found to be reciprocal between adolescence and young adulthood. Thus, exposure to peer drug users increased the risk of youth's using drugs during adolescence, which in turn increased association with drug-using peers during young adulthood. This provides empirical support for both socialization and selection hypotheses of the relationship between drug-using peer association and drug use (Akers, 1985; Hirschi, 1969). This bidirectionality was triggered by the youth's exposure to drug-using behavior through their parents during the early years of development. In turn, this affected the youth's formation of personal networks (i.e., peer relations) and behavioral patterns (i.e., drug use).

In addition, the present study provides empirical evidence not only of the social learning process but also of the stability of drug use over time; that is, those who used drugs in adolescence were likely to use drugs in young adulthood as well. However, the level of behavioral stability was found to be rather low, in fact, much lower than anticipated, implying change or discontinuity in drug-using behavior between adolescence and young adulthood. Although this might have been due to a relatively long time interval and/or different measures used between the two data collection points (i.e., 6 years), it might also reflect behavioral changes, including the patterns of late onset and desistance from drug use (Martino et al., 2008; Schulenberg & Maggs, 2002; Wechsler et al., 1995; Windle et al., 2005). To the extent that the observed low stability indicates real changes in behavior, future research on drug use needs to better explain behavioral changes by specifically examining transitions, turning points, and human agency, over the life course (Laub & Sampson, 2003; Rutter, 1996).

Although this study adds new findings to the current literature on drug use among adolescents and young adults, we acknowledge several data limitations. First, the present data are not recent and there may be concerns among readers regarding the generalizability of our findings based on these data. However, since the NCS was conducted based on a national sample representative of children born between September 1, 1964, and December 31, 1969 (Zill et al., 1990), the present findings are generalizable to the underlying population. Also, it is important to test whether theoretical explanations are applicable to the birth cohort who lived in 1976, 1981, and 1987, as well as others, given the importance of replication in theory testing based on data collected from different settings (including time and place) or populations. Furthermore, while recognizing “old” data carry certain limitations, we believe it is important to appreciate the value these data still hold. For example, we readily acknowledge there are more recent national survey data on religion and drug use among youth in America (e.g., the Add Health data). However, they do not include the childhood data we are able to draw upon in the current study. To discount the merit of research because it relies upon data that are not necessarily contemporary but still of great value, we believe, is shortsighted and unnecessarily discourages scholars from using highly regarded data sets that still hold the potential to advance our knowledge (e.g., Laub & Sampson, 2003).

Second, as indicated previously, the NSC did not use the same items across waves for all constructs, which is not ideal for estimating a panel model. However, to the extent that items used to measure latent variables are valid, this should not necessarily pose a threat to the validity of the present study, since we did not intend to directly compare the same structural relationships across waves (e.g., the effects of religiosity on drug use in young adulthood compared to the effects in adolescence) to see whether the relationship changes over time. Our key interest was rather in examining whether childhood risk and protective factors influence drug use in adolescence and young adulthood.

Finally, we examined long-term effects of childhood factors on drug use in adolescence and young adulthood on the basis of between-individual differences in drug use over time, that is, whether the risk and protective factor increases and decreases the probability of using drugs in youth. Although this is a valid approach to study behavioral change over time, an alternative is to focus on within-individual differences instead by estimating the effects of the childhood factors on the trajectories of drug use across the ages of adolescence and young adulthood. For example, it would be interesting and worthwhile to examine whether exposure to parental drug use or conservative religious upbringing increases the slope of drug use trajectories (i.e., accelerates drug use) or decreases it (i.e., decelerates). This is a potentially

fruitful direction for future research on drug use in adolescence and young adulthood.

Despite these limitations, the present study makes an important contribution to the current literatures on drug use among youth in America by analyzing longitudinal data spanning a long-term period, ages 6 to 22. In addition, findings from the present study are consistent with the key premise of a developmental perspective on drug use among youth. Stated differently, using drugs can be traced back to the youth's family socialization during childhood. Specifically, exposure early in life to drug users or being raised in a conservative religious tradition before entering adolescence and young adulthood are both consequential later in life.

Declaration of Conflicting Interests

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Notes

1. To be precise, Wave 2 sample includes two 10-year-olds and two 17-year-olds, which made up less than 1% (.4%) of the sample, with 22 cases missing age at the time of survey.
2. Without this adjustment, the total sample would include disproportionately more black respondents ($n = 240$, 21.4%) than whites ($n = 882$, 78.6%) with the sample size slightly increasing to 1,122.
3. Our items include not only attitudinal but also behavioral indicators of low self-control, which Gottfredson and Hirschi (1990) emphasize. Although some of the behavioral items describe deviant acts, such as fighting and bullying, they are unlikely to cause the problem of tautology in the measurement of low self-control because those items concern the child's behavioral tendency rather than a specific act committed during a particular period of time. The problem is also unlikely because they were reported by the child's parent as an independent observer of the child's behavioral tendency.
4. Family income was total amount before taxes in 1975 (1 = Under US\$3K, 2 = US\$3K-US\$3,999, 3 = US\$4K-US\$4,999, 4 = US\$5K-US\$5,999, 5 = US\$6K-US\$7,999,

- 6 = US\$8K-US\$9,999, 7 = US\$10K-US\$11,999, 8 = US\$12K-US\$14,999, 9 = US\$15K-US\$19,999, 10 = US\$20K-US\$24,999, 11 = US\$25K-US\$29,999, 12 = US\$30K-US\$34,999, 13 = US\$35K and over), whereas parent's education was measured based on highest grade/year parent finished and got credit for regular school (0 = No formal schooling, 1-6 = 1-16 years, 17 = 17 years or over). All three SES indicators have high interitem reliability ($\alpha = .77$) and high factor loadings: family income (.66), parent's education (.81), parent's occupation (.70).
5. The sample consisted of children of ages ranging from 6 through 12: 6 (4.0%), 7 (18.2%), 8 (17.7%), 9 (17.8%), 10 (17.6%), 11 (21.0%), and 12 (3.7%).
 6. Another candidate for spuriousness was the nonsignificant relationship between drug-using peers and youth's religiosity, which we expected to be negatively associated with each other. Specifically, when parent's drug use at Time 1 was excluded from the model, the correlation between Time 2 residuals of drug-using peers (D_1) and youth's religiosity (D_2) turned significant in the expected direction (-.110), whereas the residual correlation of young adulthood remained nonsignificant (-.021). Thus, the relationship between youth's religiosity and peer drug use is likely to be at least in part spurious due to the youth's parental influence. Stated differently, religious adolescents are less likely to have drug-using friends than their non- or less-religious counterparts because of parental influence on youth's religiosity (-.310) and selection of friends (.373).

References

- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, *30*, 47-87.
- Akers, R. L. (1985). *Deviant behavior: A social learning approach* (3rd ed.). Belmont, CA: Wadsworth.
- Arbuckle, J. L., & Wothke, W. (1995). *Amos 4.0 User's Guide*. Chicago: Smallwaters Corp.
- Chawla, N., Neighbors, C., Lewis, M. A., Lee, C. M., & Larimer, M. E. (2007). Attitudes and perceived approval of drinking as mediators of the relationship between the importance of religion and alcohol use. *Journal of Studies on Alcohol and Drugs*, *68*, 410-418.
- Gottfredson, M., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, *112*, 64-105.
- Hirschi, T. (1969). *Causes of delinquency*. Berkeley: University of California Press.
- Jang, S. J. (2002). The effects of family, school, peers, and attitudes on adolescents' drug use: Do they vary with age? *Justice Quarterly*, *19*, 97-126.

- Jang, S. J., Bader, C. D., & Johnson, B. R. (2008). The cumulative advantage of religiosity in preventing drug use. *Journal of Drug Issues, 38*, 771-798.
- Jang, S. J., & Johnson, B. R. (2003). Strain, negative emotions, and deviant coping among African Americans: A test of general strain theory. *Journal of Quantitative Criminology, 19*, 79-105.
- Johnson, B. R., Jang, S. J., Li, S. D., & Larson, D. B. (2000). The "invisible institution" and black youth crime: The church as an agency of local social control. *Journal of Youth and Adolescence, 29*, 479-498.
- Johnson, B. R., Li, S. D., & McCullough, M. E. (2000). Religion and delinquency: A systematic review of the literature. *Journal of Contemporary Criminal Justice, 16*, 32-52.
- Kandel, D. B. (1996). The parental and peer contexts of adolescent deviance: An algebra of interpersonal influences. *Journal of Drug Issues, 26*, 289-315.
- Kandel, D. B., Kessler, R. C., & Margulies, R. Z. (1978). Antecedents of adolescent initiation into stages of drug use: A developmental analysis. *Journal of Youth and Adolescence, 7*, 13-40.
- Laub, J. H., & Sampson R. J. (2003). *Shared beginnings, divergent lives: Delinquent boys to age 70*. Cambridge, MA: Harvard University Press.
- Martino, S. C., Ellickson, P. L., & McCaffrey, D. F. (2008). Developmental trajectories of substance use from early to late adolescence: A comparison of rural and urban youth. *Journal of Studies on Alcohol and Drugs, 69*, 430-440.
- Moore, K. A., & Peterson, J. L. (1989). *Wave 3 of the National Survey of Children: Description of data* (Child Trends Working Paper No. 89-09). Washington, DC: Child Trends, Inc.
- Nonnemaker, J. M., McNeely, C. A., & Blum, R. W. (2003). Public and private domains of religiosity and adolescent health risk behaviors: Evidence from the National Longitudinal Study of Adolescent Health. *Social Science and Medicine, 57*, 2049-2054.
- Rutter, M. (1996). Transitions and turning points in developmental psychopathology: As applied to the age span between childhood and mid-adulthood. *International Journal of Behavioral Development, 19*, 603-626.
- Schulenberg, J. E., & Maggs, J. L. (2002). A developmental perspective on alcohol use and heavy drinking during adolescence and the transition to young adulthood. *Journal of Studies on Alcohol, 14*, 54-70.
- Steenland, B., Park, J. Z., Regnerus, M. D., Robinson, L. D., Wilcox, W. B., & Woodberry, R. (2000). The measure of American religion: Toward improving the state of the art. *Social Forces, 79*, 291-318.
- Thornberry, T. P., & Krohn, M. D. (1997). Peers, drug use, and delinquency. In D. M. Stoff, J. Breiling, & J. D. Maser (Eds.), *Handbook of antisocial behavior* (pp. 218-232). New York: John Wiley.

- Wallace, J. M., Jr., & Bachman, J. G. (1991). Explaining racial/ethnic differences in adolescent drug use: The impact of background and lifestyle. *Social Problems, 38*, 333-355.
- Wallace, J. M., Jr., Brown, T. N., Bachman, J. G., & Laveist, T. A. (2003). The influence of race and religion on abstinence from alcohol, cigarettes and marijuana among adolescents. *Journal of Studies on Alcohol, 64*, 843-848.
- Wechsler, H., Dowdall, G. W., Davenport, A., & Castillo, S. (1995). Correlates of college student binge drinking. *American Journal of Public Health, 85*, 921-926.
- Windle, M., Mun, E. Y., & Windle, R. C. (2005). Adolescent-to-young adulthood heavy drinking trajectories and their prospective predictors. *Journal of Studies on Alcohol, 66*, 313-322.
- Zill, N., Furstenberg, F., Jr., Peterson, J., & Moore, K. (1990). National Survey of Children: Wave I, 1976, Wave II, 1981, Wave III, 1987. Ann Arbor, MI: Interuniversity Consortium for Political and Social Research.

Bios

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