AGE, CRIMINAL VICTIMIZATION AND OFFENDING: CHANGING RELATIONSHIPS FROM ADOLESCENCE TO MIDDLE ADULTHOOD

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Abstract

The finding that victims and offenders are often the same individuals has led to attempts at explaining the positive correlation between victimization and offending. Much of the evidence for the positive relationship between victimization and offending, however, was based on samples of adolescents and young adults, or on data with other limitations. In the present study, we use longitudinal self-report data on victimization and offending in a national probability sample to examine the impacts of victimization on offending and offending on victimization, controlling for sociodemographic and theoretical predictors of both, to see whether the relationship is consistent across the life course from adolescence to early middle age. The results suggest that the relationship between being a perpetrator and being a victim of crime changes over the life course, and that explanations for the victimization-offending relationship need to take this life course variation into account.

An important issue in the victimization literature is the relationship between illegal behavior and victimization. Prior to the development of victimization surveys in the 1960s, and the subsequent institution of the annual national collection of data on victims of crime through the National Crime Survey (NCS), later (after 1992) renamed the National Crime Victimization Survey (NCVS), criminologists and the general public seemed to think of victims and offenders as separate populations. It was not widely recognized that victimization might be a risk factor for subsequent illegal behavior, or that illegal behavior might be a marker indicating the possibility of additional treatment needs among individuals who might be not only perpetrators but also victims of crime.

Early data from the NCS indicated that the characteristics of individuals victimized by crime parallel the characteristics of individuals arrested for crime (Hindelang, Gottfredson, and Garofalo 1978; U.S. Department of Justice, 1988), and comparisons of victim and offender characteristics based on more recent data continue to indicate the similarity between victims and offenders (Rand, 2008; Snyder, 2008; Snyder and Sickmund, 2006; U. S. Department of Justice, undated). Adolescents and young adults have higher rates of victimization and offending than older individuals. Males are more often victims and perpetrators than females, with the notable exception that females are most often the victims of sexual assault; nonwhites, particularly African Americans, are victimized more than the white non-Hispanic majority, and they also have higher arrest rates (but self-report data on crime perpetration suggest that, at least for adolescents, arrest data overstate the relationship between minority status and offending). Violent personal and household property victimization rates are higher for households with lower household income and individuals with lower socioeconomic status, (SES, variously defined in terms of some combination of one or more

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of occupational status, income, and education), and arrest rates are higher for lower income and lower SES than for higher income or higher SES individuals (although again self-report data on perpetration suggest that this relationship is overstated). Urban dwellers have the highest, and rural residents the lowest, rates of both victimization and perpetration of personal and property crimes. Additional research (Ageton, 1981; Esbensen and Huizinga, 1991; Jensen and Brownfield, 1986; Lauritson, Sampson, and Laub, 1991; Sampson and Lauritson, 1990; Thornberry and Figlio, 1974) confirmed that the same individuals tended to be both victims and offenders.

Explanations for the Victimization-Offending Relationship

The first step in the scientific process is observation; from there, we move to theoretical explanation of the observations. The discovery of the relationship between victimization and offending led to the development of explanations for why the same individuals would be both perpetrators and victims. From a routine activities or lifestyle perspective (Cohen and Felson, 1979; Felson and Cohen, 1980; Cohen, Kluegel, and Land, 1981; Hindelang et al., 1978; see also Maxfield, 1987), individuals who are involved in illegal behavior place themselves in situations where they are more vulnerable to victimization because of the absence of capable guardians and the presence of willing offenders (in addition to themselves). Black (1983) suggested that individuals may use crime as a form of social control (retaliation or deterrence). The frustration-aggression hypothesis (Berkowitz, 1962) and strain theory (Agnew, 2001; Carson, Sullivan, Cochran, and Lersch, 2009; Harrell, 2007; Hay and Evans, 2006) perspectives suggest that individuals experiencing frustration or strain may respond by engaging in illegal behavior. According to the learning theory (Akers, 1985; Bandura, 1977) and "cycle of violence" (Gelles and Cornell, 1990; Rivera and Widom, 1990) perspectives, assailants may model behaviors that are later repeated by the victim. A reciprocal pattern of victimization is suggested by Singer (1986; see also Lauritsen, Sampson, and Laub, 1991), who emphasizes subcultural and reciprocal aspects of predatory crime, and from a self-control theory perspective (Armstrong and Griffin, 2007; Piquero, MacDonald, Dobrin, Daigle, and Cullen, 2005; Schreck, 1999; Schreck, Steward, and Fisher, 2006; Stewart, Elifson, and Sterk, 2004) that suggests that individuals with low self-control both are more likely to be perpetrators of illegal behavior, and also are more likely to place themselves in situations conducive to their own victimization, and, once in those situations, more likely to behave in ways that increase their own likelihood of victimization.

Implicitly in all of these explanations, the positive correlation between victimization and offending, and the overlap between victims and offenders, seem to be taken as much for granted as the sharp distinction between victims and offenders once was. Although most of the evidence for the positive correlation between victims and offenders is based on evidence from adolescent samples, there is no clear indication in any of these explanations of an expectation that the victimization-offending relationship will change over the life course. A life course developmental perspective (Elder, 1985; Graber and Brooks-Gunn, 1996; for applications in the study of illegal behavior, see, for example, Hawkins, 1996; Piquero and Mazerolle, 2001; Thornberry, 1997) suggests that there may be changes in comorbidities between problem behaviors and influences on problem behaviors over the life course (for example, Elliott, Huizinga, and Menard, 1989; Menard, 1995; Nagin and Farrington 1992; Sim and Vuchinich, 1996), but specific to the current research, life course developmental theories offer little or no guidance suggesting or explaining a changing relationship between criminal offending and victimization over the life course.

Research Questions and Hypotheses

How does the relationship between self-reported victimization and offending unfold over the life course? What is the pattern of association between victimization and offending both earlier and later in the life course, including individuals in middle age as well as adolescents and young adults? How are victimization and offending related to each other when we control for sociodemographic characteristics and some of the more robust predictors of offending over the life course? In particular, given the importance of association with delinquent, deviant, or criminal others in theories of both offending (particularly for learning theories) and victimization (particularly for routine activities or lifestyle theories), to what extent is association with law-violating friends a predictor of victimization and offending at different stages in the life course? (It would also be interesting to go beyond middle age and ask these questions about the elderly, but that is beyond the scope of the data available for the present study.) Just as existing theory *circa* 1970 provided no clear expectation that a positive relationship should exist between victimization and offending, presently existing theories simply fail to provide adequate guidance about how the relationship between victimization and offending should *change or remain the same over the life course*. Cognizant of theory, but absent specific theoretical guidance on how (and really whether) the relationship between victimization and offending should change over the life course, we test the following eight hypotheses:

H1: At each stage of the life course, from adolescence through middle adulthood, being a victim of crime, particularly of violent crime, increases the frequency of subsequent perpetration of illegal behavior (frustration-aggression; crime as social control; strain; learning).

H2: At each stage of the life course, from adolescence through middle adulthood, being a perpetrator of crime increases the frequency of subsequent victimization, particularly violent victimization (routine activities/lifestyle).

H3: At each stage of the life course, from adolescence through middle adulthood, exposure to friends who are involved in illegal behavior increases the frequency of perpetration of crime (learning).

H4: At each stage of the life course, from adolescence through middle adulthood, exposure to friends who are involved in illegal behavior increases the frequency of criminal victimization (routine activities/lifestyle).

H5: At each stage of the life course, from adolescence through middle adulthood, belief that it is wrong to violate the law decreases the frequency of perpetration of crime (social control/bonding).

H6: At each stage of the life course, from adolescence through middle adulthood, belief that it is wrong to violate the law decreases the frequency of criminal victimization (very loosely derived from self-control theory, based on Hirschi's (2004) suggestion of equivalence between self-control and social bonding)

H7: At each stage of the life course, from adolescence through middle adulthood, substance use increases the frequency of perpetration of crime (mixed evidence on this in prior research using the NYSFS; see Menard and Mihalic, 2001; Menard, Mihalic, and Huizinga, 2001).

H8: At each stage of the life course, from adolescence through middle adulthood, substance use increases the frequency of criminal victimization (routine activities: vulnerable target, reduction in self-guardianship).

No hypotheses are offered with respect to gender, ethnicity, urban-suburban-rural residence, educational attainment, or age within each stage of the life course. They are included here as control variables; but past empirical results would lead us to expect higher rates of victimization and offending for males, for urban residents (and lower rates for rural residents), and for less educated respondents; and higher rates of victimization, but not necessarily offending, for ethnic minority group members.

Methodological Limitations in Studies of the Relationship Between Victimization and Offending

Previous studies of the relationship between victimization have generally been limited by one or more of (a) reliance on official statistics for offending, (b) reliance on samples of questionable generalizability, and (c) limitations on the age range, particularly excluding the youngest potential victims (under age 12) and also, in those studies that do involve self-reported perpetration of illegal behavior, limitation to younger age groups (adolescents or young adults). A different issue arises if we try to rely only on victimization data such as the NCVS: while it is possible to obtain characteristics of both victims and offenders, the latter as perceived by the victims (for example, Baum, 2005), we do not have data on both victimization *and* offending *for the same individuals;* instead, we are limited to comparing the characteristics of victims and offenders without being able to truly ascertain to what extent the two populations overlap. A similar problem arises in studies of victimization and offending when the same variables are used as predictors of victimization and offending, but the direct effects of victimization and offending on one another are not examined.

Official statistics are inadequate for measuring actual criminal behavior or victimization for most offenses because they only uncover one-fourth to one-half of the serious offenses other than homicide, and one-tenth to one percent of the less serious crimes, particularly illicit drug use and other "victimless" crimes, and compared to victimization and self-report data, they are misleading with regard to trends in crime because they reflect law enforcement activity, rather than actual criminal behavior (Elliott, 1995; Lynch and Addington, 2007; Menard, 1987; Menard and Covey, 1988; O'Brien, 1985; O'Brien, 1996). The percentage of crimes missed by official statistics has decreased in the past two decades because of increased reporting to the police by victims (O'Brien, 1996; Lynch and Addington, 2007), but remains high. Self-report data, by contrast, is fairly reliable (about 90%) and valid (about 80% based on several criteria) as a measure of illegal behavior (see, for example reviews in O'Brien, 1985; Elliott et al., 1989). Self-report data on victimization and licit and illicit substance use also appear to have generally acceptable levels of reliability and validity (Bennett and Holloway, 2007; Biderman, 1967; Cantor, 1989; Ennis, 1967; Harrison, 1995; Skogan, 1981).

Self-report data have been used extensively in examining the relationship between victimization and offending, but almost exclusively for adolescents and occasionally young adults. Lauritsen et al. (1991) used the first fives waves (age range 11-21) of the National Youth Survey (NYS) and found that adolescent involvement in "delinquent lifestyles" (including both delinquent behavior and involvement with delinquent peers) and victimization each affected the other, with the impact of delinquent lifestyles on victimization being greater than the impact of victimization on delinquent lifestyles. Harrell (2007) used data on white and African American respondents from the first four waves (age range 11-20) of the NYS and found, consistent with general strain theory, that increased victimization was a risk factor for both violent and nonviolent offending and illicit substance use. Menard (2002; see also Menard and Mihalic, 2001) used waves 1-9 for the three youngest cohorts in the NYS (ages 11-17 in waves 1-5, ages 21-29 in waves 7-9) and found that violent victimization but not property victimization in adolescence was associated with

adult violent victimization (continuity of violent victimization; continuity was similarly found for property victimization), property and violent offending, domestic violence perpetration and victimization, problem drug use, and posttraumatic stress disorder (PTSD), and his results also indicated that violent offending in adolescence was a risk factor for violent offending, perpetration of domestic violence, and domestic violence victimization in adulthood.

Hay and Evans (2006) using the National Survey of Children, with two waves of data, 1976 (ages 7-11) and 1981 (ages12-16), and Carson et al. (2009) using the National Survey of Adolescents (ages 12-17), and also found that victimization was a risk factor for frequency and early age of onset of drug use, including tranquilizers, sedatives, stimulants, pain medications, marijuana, cocaine, angel dust, hallucinogens, heroin, and inhalants. Other studies that have been used in the study of the relationship between victimization and offending include the National Longitudinal Study of Adolescent Health (Add-Health), which is limited to adolescence and early adulthood (initially ages 11-17, grades 7-12; see Daigle, Beaver, and Hartman, 2008; Schaffer and Ruback 2002); city samples including a cohort of 4,300 adolescents in Edinburgh, Scotland (Smith and Ecob, 2007), the Philadelphia Cohort Study (Singer, 1986; Thornberry and Figlio, 1974), and the Denver Youth Survey (Esbensen and Huizinga, 1991); plus studies that have involved samples of individuals who were incarcerated or under justice system supervision, shelter samples of female victims of intimate partner violence, individuals with known involvement in street crime or illicit substance use, and school-based samples (for a more extensive review, see, for example, Harrell, 2007). The overwhelming evidence from these studies is that the same individuals tend to be involved in both criminal victimization and crime perpetration - *in adolescence and early adulthood*. It also appears that victimization, particularly violent victimization *in adolescence* is a risk factor for adult offending, and that adolescent offending is a risk factor for adult victimization.

Method

Sample

Data for this study are taken from waves 1-11 of the National Youth Survey Family Study (NYSFS), an expansion of the National Youth Survey (NYS) to include parents, spouses, and children of the original respondents. The NYSFS employed a probability sample of households in the continental United States based on a self-weighting, multistage, cluster sampling design. The sample was drawn in late 1976 and contained an estimated 2,360 eligible youth, born 1959 to 1965, of whom 1,725 (73%) agreed to participate in the study, signed informed consents, and completed the interviews in the initial wave of the survey. Overall completion rates were over 94% of the original respondents for waves 2 and 3; 87% for waves 5 and 6; 80% for wave 7; 83% for wave 8; and 78% for wave 9. An age, gender, and race comparison between individuals who were eligible but did not participate in the survey and NYS respondents indicated that the loss rate from any particular age, gender, or racial group appeared to be proportional to that group's representation in the population. For specific years, differences in social and demographic characteristics and illegal behavior and substance use at the first wave, between the originally interviewed sample (wave 1) and participants in a given year, were small and not statistically significant. With respect to sociodemographic characteristics, at each wave NYS respondents appear to be representative of the total U.S. population born 1959 to 1965 as established by the U.S. Census Bureau. Data for waves 10 and 11 were collected in 2002-2003. Of the 1,677 known surviving eligible original (age 11-17 in 1976-77) respondents, interviews were completed with 1,266 or 75% in wave 10 and 1,173 or 70% in wave 11.

Participation and attrition rates compare favorably with those of other major longitudinal studies; see, for example, de Leeuw and van der Zouwen (1988), de Leeuw and Heer (2002), and Groves, Fowler, Wiley, Couper, Lepkowski, Singer, and Tourangeau (2004); and compare with Bachman, Green, and Wirtanen (1971), Cordray and Polk (1983), and Newcomb and Bentler (1988). Moreover, there is evidence that the departure from randomness of the attrition in the NYSFS is minimal, and analyses of its effects suggest that, despite some suggestions to the contrary (e.g., Lauritsen, 1998; Piquero, Macintosh, and Hickman, 2002), the attrition in the NYSFS has little or no impact on substantive findings (Bosick, 2009; Brame and Paternoster, 2003; Elliott, et al. 1989; Jang, 1999; Lackey, 2003; Menard and Elliott, 1993).

Measurement

Three types of victimization are considered here: property, violent, and total. As described in Menard (2002), the items used to measure property victimization in the NYSFS consist of (1) having a car, motorcycle, or bicycle stolen; (2) having things stolen from a car, motorcycle, or bicycle, including packages, bike locks, and parts; (3) having things such as clothing or other possessions stolen from a public place; (4) having things stolen from one's home; (5) vandalism, having things damaged on purpose (such as having car or bike tires slashed or clothing or books ripped up); and, beginning at wave 3, (6) having a pocket picked or a purse or wallet stolen, or an attempt made to do so. Violent victimization includes (1) having something taken directly by force or threat, or having an attempt made to do so; (2) being beaten up or threatened with being beaten up; (3) being attacked with a weapon such as a knife, gun bottle, or chair; and (4) being sexually attacked or raped, or having an attempt made to do so. Total victimization includes both property and violent victimization. Past studies involving the NYS have indicated that the distinction between violent and property victimization is important, with violent offending being more predictive of subsequent offending and other problems than property offending. The victimization scales were constructed by summing the frequencies of the items in the respective scales.

Substance use is measured separately from other types of offending, and includes four measures, three of which have been used extensively in past research involving the NYS and one of which has been used relatively little. Alcohol use, although not illegal (except for the youngest age group) is generally associated with victimization and offending, particularly violent victimization and offending, in previous studies (Elliott et al., 1989; Menard et al., 2001). Marijuana use represents the use of a relatively "soft" drug. Inhalant use (the "new" drug relative to past studies involving the NYS) represents the inappropriate use of substances that are not generally themselves illegal, and is most prevalent at younger ages. Finally, a polydrug or hard drug use scale is used which includes use of any one or more of (1) amphetamine, (2) barbiturate, (3) cocaine, (4) hallucinogen, or (5) heroin use. For alcohol, marijuana, and inhalant use, respondents were asked the number of times they used the substance in the past year. For polydrug use, respondents were also asked how many times they had used each of the five substances in the past year, and the frequencies of all five substances were added together to produce the polydrug use scale. Past studies of substance use in the NYS indicated that hard drug use was practically always accompanied by alcohol and marijuana use; fewer than 1% of the sample reported hard drug use but no marijuana or alcohol use, hence the designation of this scale as a polydrug use scale. Substance use is here considered as both a risk factor for and a potential consequence of victimization and offending.

There is no clear indication that measures of offending either as predictors or as outcomes of victimization need to be specific as opposed to general, and other results, not shown in detail here, indicate that victimization tends to be more highly correlated with general offending than with more offense-specific measures of offending. A single measure of general

offending frequency is used here to capture offenses other than substance use. *General offending* includes the Federal Bureau of Investigation's Part I (Crime Index) offenses except for homicide and arson, plus several Part II offenses. It consists of offenses that would be criminal for adults, including (1) minor assaults (depending on stage of the life course, hit parents, students, teachers, someone at work, anyone else), (2) serious assaults (attacked someone with the idea of seriously injuring or killing them), (3) robbery (used force or strongarm methods to take something from someone), (4) various levels of theft (theft less than $5, theft of $5 to $50, and theft of more than $50; in later waves, this was split into thefts of $50 to $100 and thefts of more than $100), (5) theft of a motor vehicle, (6) possession of stolen goods, (7) prostitution, (8) sales of marijuana and (9) sales of hard drugs (but as indicated above, substance *use* is measured separately); but not status offenses such as runaway, or some other minor offenses such as providing liquor for a minor. This scale is described in greater detail as the General Delinquency C scale in Elliott et al. (1989), and is constructed by first asking respondents how many times in the past year they committed each of the offenses, then adding the frequencies of all of the offenses together to form the general crime/delinquency scale.

Exposure to or association with friends who are engaged in illegal behavior is a scale involving 8 items asking how many of your friends (1=none, 2=very few, 3=some, 4=most, 5=all) have (1) deliberately damaged or destroyed property that did not belong to them, (2) used marijuana, (3) stolen something worth less than $5, (4) hit or threatened to hit someone without any reason, (5) broken into a vehicle or building to steal something, (6) sold hard drugs, (7) stolen something worth more than $50, or (8) encouraged you to do something that was against the law. The eight items are added together to form the composite scale. This is a subset of the exposure to delinquent peers scale used in other studies involving the NYS (e.g., Elliott et al., 1989). The original exposure scale also included items on use of alcohol, excluded here because it is a status offense, and cheating (a) on school tests for adolescents and (b) on income taxes for adults, both eliminated here to keep the scale consistent across age groups. Scale reliability (Cronbach's α) for the eight item scale varies slightly from year to year but is typically in the range of .80 to .90.

Belief that it is wrong to violate the law is a scale involving 7 items asking how wrong it is (1=not wrong at all, 2=a little bit wrong, 3=wrong, 4=very wrong) to (1) deliberately damage or destroy property that did not belong to you, (2) use marijuana, (3) steal something worth less than $5, (4) hit or threaten to hit someone without any reason, (5) break into a vehicle or building to steal something, (6) sell hard drugs, or (7) steal something worth more than $50. Like the exposure scale, the scale is formed by adding together all of the items of the scale. The specific items are the same as for the exposure scale, with the exception that encouraging someone to break the law is not included in the belief scale. Reliability for the belief scale is similar to reliability for the exposure scale, .75 to .85 (Cronbach's α). For both belief and exposure, scale-missing data were imputed using subject-specific scale means (the mean for an individual respondent, not for all of the respondents combined) when at least 60% of the scale items were available, but when fewer than 60% of the items were available, the scale score was treated as missing data.

Ethnicity is here treated as the distinction between the white non-Hispanic majority and all other (minority) groups. Given the time at which the data were first collected on the original respondents, the nonwhite minority consists primarily of African Americans, followed by Hispanics, and then other racial/ethnic groups. The term "ethnicity" is used here in preference to race, and the distinction made by the U. S. Census Bureau between race and ethnicity, which was not in effect at the time the NYS was begun, was not used in the data collection and is not used here. Also included as sociodemographic control variables are gender (male or female), highest grade completed (grades 1-12, with 13-16 representing

years in college and 17 representing any education past an undergraduate college degree), residence (1=urban, 2=suburban, 3=rural), and age. Age is coded into four age groups, adolescent (age 11-17), transitional (18-26), young adult (27-33), and early middle age (37-44). These age groupings are reasonable representations of different stages of the life course, and also are convenient for analysis given the ages at which data were collected in the NYSFS. Age (in years) at last birthday is also included (within age groups) as a control variable in the regression analysis.

Analytical Approach

Frequency of victimization, general offending, and substance use are first transformed using the natural logarithmic transformation (with 1 added to the frequency before taking the natural logarithm, to avoid taking the natural logarithm of zero, which is undefined). The natural logarithmic transformation adjusts for two problems with frequency data: the data tend to be skewed, with many cases having low frequencies and a very few cases having very high frequencies; and estimates of high frequency offending are not as reliable as estimates of lower frequencies (Elliott and Huizinga, 1989; Huizinga and Elliott, 1986). Taking the natural logarithm gives more weight to (more reliable) differences at lower frequencies and less weight to the same (but less reliable) differences when they occur at higher frequencies; but it avoids the loss of information associated with other approaches, such as artificially grouping frequencies into a discrete number of categories. From this point forward, it should be understood that reference to frequency means logged frequency.

The analysis proceeds in two stages. First, zero-order correlations (Pearson's r) are examined for the frequencies of violent, property, and total victimization with general offending and the four substance use measures, in order to see whether and how the bivariate correlation of victimization with offending changes with age. Second, for a more detailed examination of victimization and offending as risk factors for one another, this time controlling for possible spuriousness in their association, ordinary least squares regression analysis is employed in a linear panel analysis with separate estimation (as opposed to simultaneous estimation; for discussions of the differences, see Heise, 1975 and Menard, 2010) using lagged predictors, including lagged endogenous variables. The inclusion of a lagged endogenous variable (the dependent variable, measured at an earlier time, used as a predictor of the dependent variable measured at a later time) may accomplish any or all of three things: (1) it controls for the influence of variables that are not directly included in the analysis, but which have an influence on the dependent variable, incorporating their influence in the effect of the lagged endogenous variable on the outcome; (2) it models behavioral inertia, the tendency of individuals to behave in the same way from one time to the next unless there is some stimulus that leads them to change their behavior; and (3) it can be interpreted as modeling change in the dependent variable (Davies, 1994; Finkel, 1995; Kessler and Greenberg, 1981). These different interpretations cannot be separated analytically. In addition to the lagged endogenous variables, the other predictors in each model are measured for a time period prior to that for which the outcome variable is measured, thus maintaining correct temporal ordering between possible causes and their effects. The use of lagged variables also avoids simultaneity bias (Duncan, 1975:77) when estimating bidirectional relationships such as the influence of victimization on offending *and*, at the same time, the influence of offending on victimization, by using different variables (differentiated by time of measurement) as outcomes and predictors.

Missing Data and Imputation/Interpolation

NYS/NYSFS interviewing occurred in 11 waves with variable lags between waves; interview years were 1977, 1978, 1979, 1980, 1981, 1984, 1987, 1990, 1993, 2002, and 2003, with the result that for some waves, to obtain time-ordered predictors, we can use the

predictor measured in the year prior to the year for which the outcome was measured; but for other years, it may be three years or (from 1993 to 2002) nine years between measurements. In the analysis, lagged values of the offending and victimization variables were used (violent victimization, property victimization, general offending, alcohol, inhalant, marijuana, and polydrug use). For time-varying predictors (exposure, belief, highest grade completed, urban-suburban-rural residence), when there were three-year lags between waves of data, linear interpolation was used to estimate the predictors for the year prior to that for which the outcome was measured.[1] This reduces but does not entirely solve the problem that arises when the measurement interval is so long that the predictor measured at the (much) earlier time can not reasonably be expected to have much if any impact on the outcome measured at the (much) later time. For the early middle age respondents, dependent variables were measured in 2003 and predictors in 2002.

Questions about violent victimization were asked in all 11 waves, but in the second year (1977), approximately 4/7 (57%) of the respondents were not asked about property victimization. This essentially divides the NYS sample into two subsets, one with and one without potentially complete data on property victimization for the full nine waves. For wave-specific nonresponse, and for wave 2 missing data on property victimization, consistent with general practice, pairwise deletion is used in the correlation analysis, but listwise deletion is used in the multiple regression analysis. For the analyses here, the two approaches produce similar results. The main effect of this is to reduce the normalized sample size for the adolescent and transitional respondents.

Results

Table 1 presents bivariate correlations of the three types of victimization with general offending and the four substance use measures. Also note that at the bottom of Table 4, a normalized number of cases (n of cases) is presented for each age group. In this analysis, data from multiple waves were pooled in order to maximize the information on which the correlations in Table 4 are based, but the multiple observations per case are not truly independent, and this would affect levels of statistical significance (p) in the table. Normalizing weights were applied to reflect average response rates and to adjust the estimated number of cases to better reflect the actual number of cases from which information was obtained, and on which significance levels should be based. The significance levels resulting from this adjustment should be regarded as approximate but reasonable estimates; more attention should probably be paid to the magnitude of the correlation coefficients, with correlations under .100 indicating very weak relationships, even if they are statistically significant.

In Table 1, the correlation of alcohol use with all three types of victimization is not statistically significant for early middle age; the correlation of inhalant use with property

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[1]Linear interpolation could not be used with the offending variables for two reasons, circularity (the dependent variable would be used in constructing the interpolated value to predict itself) and intermittency. With regard to intermittency, past research has suggested that illegal behavior and especially victimization tend not to be continuous across the life course, but that instead victimization careers are marked by years in which victimization occurs, interspersed with years in which no victimization occurs (e.g., Menard 2000,; Menard and Huizinga, 2001). Linear interpolation was not used for the oldest age group because there were two waves of contiguous data (2002 and 2003), and interpolation to data on predictors for 2001 (for 2002 dependent variables) would involve interpolation over a nine year span, nearly identical to analysis with no time lag at all. For the early middle age respondents, therefore, results are based on a single wave each for the dependent variables (2003) and the predictors (2002), with correct time ordering between the two. Comparison of the results used in the main analysis presented here with both results using the longer time lags and results using no time lag (in which the cause may be measured subsequent to the effect) indicated interpolation produced results intermediate between the results using the longer time lag and no time lag with respect to explained variance (R^2), the magnitude of the regression coefficients, and the likelihood of getting statistically significant results; but that the linear interpolation results had much more similar inferential results and substantive conclusions as the analysis with no time lag, including but not limited to the relationship between victimization and offending.

victimization is not statistically significant at any age; and the correlation of inhalant use with total victimization in early middle age is marginally significant (.05 p .10). All of the other correlations are statistically significant at p .05. The correlations are not, however, uniform across the four age groups. The correlation of general offending with all three types of victimization appears to decline monotonically with age, as do the correlations of alcohol use with total and violent victimization; inhalant use with total and property victimization (although the decline in the relationship of inhalant use with total victimization is very small, and this might better be described as a stable relationship); marijuana use with total and violent victimization; and polydrug use with violent victimization. The correlations of alcohol use, marijuana use, and polydrug use with property victimization, and the correlations of polydrug use with property and total victimization, appear to peak at ages 18-26 (transitionals); and the correlation of inhalant use with violent victimization actually peaks in early middle age. Aside from this last exception, however, correlations are generally lowest in early middle age; and similar results, not shown in detail here, are obtained when prevalence (yes or no) is used instead of frequency. This sets the context for the results of the multiple regression analysis for each of the variables in Table 1 across the four stages of the life course represented here.

In Tables 2-4, multiple regression models are presented for violent victimization (Table 2), property victimization (Table 3), and general offending (Table 4). In each table, the first column specifies the age group being analyzed, plus the number of cases (and the percentage of the original sample represented by that number of cases), the explained variance (R^2), and the statistical significance of the overall model for that age group. The second column lists the predictors. The third column lists the standardized coefficient (b*), the fourth column lists the unstandardized coefficient (b) along with its standard error, and the last column lists the statistical significance of the unstandardized coefficient. The focus in the following discussion of the results is on the magnitude of the explained variance (R^2) and the strength of the relationship of each predictor to the dependent variable (b*) for each age group.

Substance Use

Substance use has been identified as one of the possible outcomes of victimization, particularly violent victimization, and it is also closely associated with other forms of illegal behavior, including general offending. More importantly in the present context, substance use has been identified as a risk factor for victimization both theoretically, from a routine activities/lifestyle perspective, and empirically. Substance use was examined as a dependent variable, but the results are not presented in detail here. The tale is easily told: there was no systematic relationship with victimization as a risk factor for substance use, particularly illicit substance use (i.e., one form of offending) when controlling for the other variables used in the models presented here. The relationship between substance use and illegal behavior, the third "side" of the triangle of outcomes considered here, takes us fairly far abroad from the focal topic, the relationship between victimization and offending, and has been addressed elsewhere using these data (see in particular Elliott et al., 1989; Menard and Mihali,c 2001; Menard et al., 2001). Substance use is henceforth considered here primarily as a predictor or risk factor for other (than substance use) offending and for victimization.

Violent Victimization

For violent victimization, as seen in Table 2, the first thing to notice is that the percentage of the variance that is explained by the variables in the model (R^2) declines from 27% in adolescence to 14% for transitionals, 11% for young adults, and 5% for those in early middle age. Second, violent victimization tends to be somewhat stable over time, as indicated by the statistically significant and positive stability coefficients (the coefficients for prior violent victimization): b*=.340 for adolescents, .227 for transitionals, .229 for

young adults, and .176 for those in early middle age. Third, exposure to friends who are involved in illegal behavior is also statistically significant and positive for all except adolescents: b*=.025 (nonsignificant) in adolescence, .167 for transitionals, .123 for young adults, and .056 in early middle age. Fourth, general offending is a risk factor for violent victimization for the first three age groups (b*=.185 adolescent, .119 transitional, .069 young adult), but its effect declines with age, and it is not statistically significant in early middle age (p=.999). Formal tests based on the formula suggested by Paternoster, Brame, Mazerolle, and Piquero (1998) indicate that the differences are statistically significant (p<.05) between adolescent and young adult, adolescents and early middle age, and transitional and early middle age respondents and marginal (.05<p>.10) between adolescent and transitional and young adult and early middle age respondents, all indicating a clear trend of reduced impact of offending on violent victimization with age. Fifth, there is no clear pattern of influence from any of the other predictors, although polydrug use appears to increase risk of violent victimization for adolescents, educational attainment appears to reduce the risk of violent victimization for young adults, and minority ethnicity appears to increase the risk of violent victimization in early middle age.

Property Victimization

For property victimization, in Table 3, the pattern is somewhat similar. First, as with violent victimization, the percentage of variance declines with age, from 21% in adolescence to 10% in the transitional ages to about 7.0-7.6% in the young adult and early middle age years. Second, like violent victimization, property victimization shows some modest stability over time, higher for the younger two age groups than for the older two age groups (b*=.357 adolescent, .257 transitional, .174 young adult, and .206 early middle age). Third, for property victimization as for violent victimization, exposure increases the risk of victimization in young adulthood (b*=.088) and early middle age (b*=.093). Fourth, general offending is predictive of property victimization for adolescents and young adults, but not transitionals or early middle age respondents. Fifth, other predictors that are statistically significant for at least one age group are urban-suburban-rural residence, with less urban and more rural residents experiencing lower rates of property victimization for transitionals and young adults (and the relationship is marginally significant for the other two groups); gender, with females less likely than males to experience property victimization in adolescence; and, surprisingly, belief that it is wrong to violate the law appears as a risk factor (higher property victimization for individuals with stronger beliefs that it is wrong to violate the law) in young adulthood (and marginally in adolescence).

General Offending

In Table 4, we examine the reverse relationship, that of victimization as a risk factor for the perpetration of illegal behavior. There are considerable parallels with the results for victimization. First, percentage of explained variance decreases from 45% in adolescence to 36% for transitionals, 28% in young adulthood, and 20% in early middle age. Second, there tends to be continuity in offending, with some decline from adolescence to early adulthood: b*=.421 adolescent, .364 transitional, .276 young adult, and .198 early middle age. Third, both exposure and (except for transitionals) belief are consistently statistically significant predictors of general offending, as expected from both theory and past research. Fourth, also as expected from past research, being male is a statistically significant risk factor for general offending for adolescents and transitionals, but it is not statistically significant (controlling for the other variables in the model, including prior offending) in the young adult and early middle age years. Fifth, violent victimization does appear to be a risk factor for offending in adolescence and young adulthood; and property victimization also appears as a risk factor for offending, but only in adolescence. Neither violent nor property offending appears to have a statistically significant direct impact on offending in early middle age (and recall

from the previous two tables that offending likewise ceased to have any statistically significant direct impact on victimization by early middle age). Sixth, substance use (other than alcohol use in adolescence) appears to have no direct impact on offending at earlier ages, when it seems more likely that other types of offending are risk factors for substance use (see Elliott et al., 1989; Menard et al., 2001), but, also consistent with Elliott et al. (1989) and Menard et al. (2001), later in the life course, polydrug use does appear to be a risk factor for increased frequency of general offending.

Conclusions and Discussion

H1 and H2, that victimization is predictive of crime at all stages of the life course and that offending is predictive of victimization at all stages of the life course, are supported in the correlation analysis but not in the multiple regression analysis. In the regression analysis, although the impact of violent victimization on general offending is at least marginally significant through young adulthood, it is nonsignificant in early middle age; and the relationship of general offending to both violent and property victimization is not statistically significant in early middle age.

H3 and H4, that exposure to friends who are involved in illegal behavior increases the frequency of both offending and victimization at all stages of the life course, are supported, more strongly for offending than for victimization and, as expected, more strongly for violent than for property victimization. Coupled with the results for H1 and H2, this suggests that the victimization-offending relationship is spurious, explained by learning and routine activities/lifestyle theories in early middle age, but not at earlier stages of the life span.

H5, that belief that it is wrong to violate the law decreases the frequency of offending at all stages of the life course, is supported; but H6, that belief that it is wrong to violate the law also reduces victimization at all stages of the life course, is not supported, and in fact belief is statistically significant at the .05 level only once (and in the wrong direction) in eight models for victimization, a result that might be expected by chance.

H7, that at each stage of the life course substance use increases the frequency of offending (other than substance use itself), is supported in bivariate correlation analysis (not shown in detail here) but not in the regression analysis. Controlling for the other variables in the model, the impacts of substance use on general offending are not consistent across the four stages of the life course, and none of the four substance use types has a statistically significant (p .05) impact on general offending for transitionals or young adults. H8, that at each stage of the life course substance use increases the frequency of victimization, is likewise supported in the correlation analysis but not in the regression analysis. These results suggest that substance use may be spuriously related to both offending and victimization, particularly later in the life span.

Of the control variables included in the models, only residence approaches having a consistent relationship with an outcome across the four stages of the life course considered here; it is at least marginally statistically significant (p<.10) as a predictor of property victimization for all four age groups, but the relationship is consistently weak (b*<.100).

This study is limited to the oldest ages covered in the NYSFS, and it would be useful to parallel the analysis performed here using data on individuals at even older ages. It is also limited by the structure of the data collection in the NYSFS (one year intervals between each of the first five waves, three year intervals between waves 6-9, and a nine year gap between waves 9 and 10, followed by a single year gap between waves 10 and 11), which necessitated the use of imputation (here linear interpolation) to fill in missing data points

created by that structure. Better would be a study using consistent one-year time lags between predictors and outcomes. This raises a concern about the finding that the victimization-offending relationship diminishes in early middle age; but additional evidence, including the pattern of cross-sectional correlations between victimization and offending for the four age groups presented here, is consistent with the regression analysis in suggesting that this decline is genuine. One might consider additional variables (other predictors of victimization and particularly offending) to see whether they could explain the victimization-offending relationship at earlier ages; and one could also consider alternative approaches to the analysis (for example, the use of prevalence instead of frequency for the dependent variables). It remains the case, however, that the results from this study shed new light on the victimization-offending relationship, and challenge us to explain why that relationship might change over the life course.

Before the advent of self-report data on victimization and offending, it seems to have been taken for granted that, with a few exceptions, victims and offenders represented separate and distinct populations. After the discovery of the sociodemographic similarities between victims and offenders, and the further discovery that, *in adolescence and young adulthood*, victims were often offenders and offenders were often victims, it seems to have become commonplace to infer (or assume) that there was a general positive correlation between victimization and offending, and to attempt to explain that correlation using one or more of routine activities or lifestyle, self-control, learning, frustration-aggression or strain, or social control/deterrence theories. The present results suggest that we may need to reconsider whether victimization and offending are as closely linked in later life as data from adolescence and young adulthood might suggest. Clearly the results presented here suggest that a decoupling of victimization and offending may be occurring in early middle age. If this finding proves to be robust, then it suggests that the impact of interventions with victims to prevent them from subsequently engaging in offending, and assessment of individuals arrested or convicted of crimes to see whether they may be in need of victim services, may be warranted, but more perhaps for younger than for older ages. It also suggests that theoretical explanations of the victimization-offending relationship will need to account for the presence of the link at earlier ages and its decline or absence at later stages of the life span.

Acknowledgments

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Table 1

Correlation of logged Frequencies of Victimization with Offending and Substance Use

Pearson's r (p)	General Offending	Alcohol Use	Inhalant Use	Marijuana Use	Polydrug Use
Violent Victimization					
Adolescent 11-17	.467 (.000)	.220 (.000)	.071 (.049)	.263 (.000)	.240 (.000)
Transitional 18-26	.364 (.000)	.154 (.000)	.067 (.013)	.211 (.000)	.211 (.000)
Young adult 27-33	.293 (.000)	.087 (.001)	.068 (.012)	.124 (.000)	.128 (.000)
Early middle age 37-44	.159 (.000)	.025 (.392)	.111 (.000)	.070 (.015)	.076 (.008)
Property Victimization					
Adolescent 11-17	.329 (.000)	.123 (.000)	.042 (.246)	.115 (.000)	.069 (.012)
Transitional 18-26	.236 (.000)	.140 (.000)	.031 (.248)	.155 (.000)	.138 (.000)
Young adult 27-33	.190 (.000)	.082 (.002)	.006 (.828)	.079 (.004)	.072 (.000)
Early middle age 37-44	.134 (.000)	−.002 (.948)	−.014 (.638)	.108 (.000)	.086 (.003)
Total Victimization					
Adolescent 11-17	.454 (.000)	.189 (.000)	.072 (.048)	.228 (.000)	.194 (.000)
Transitional 18-26	.362 (.000)	.181 (.000)	.054 (.048)	.225 (.000)	.218 (.000)
Young adult 27-33	.293 (.000)	.103 (.000)	.053 (.050)	.119 (.000)	.133 (.000)
Early middle age 37-44	.170 (.000)	.001 (.971)	.049 (.087)	.117 (.000)	.106 (.000)

Normalized n of cases:

1,725 total respondents at wave 1

1,559 (90.4%) for adolescent

1,315 for property victimization (skipped for half sample at wave 2)

771 for inhalants (first introduced for half sample at wave 2 and 3, full sample at wave 4)

1,454 (84.3%) for transitional

1,363 (79.0%) for young adult

1,217 (70.6%) for early middle age

Table 2

Logged Frequency of Violent Victimization

Age group	Predictor	Standardized coefficient: b*	Unstandardized coefficient: b (standard error)	Statistical significance: p
Adolescent age 11-17 (n=1120/65%) R² = .273 (p = .000)	Intercept	-	.111 (.379)	.770
	Violent victimization	.340	.333 (.029)	.000
	General offending	.185	.108 (.020)	.000
	Alcohol use	.021	.012 (.021)	.563
	Marijuana use	−.022	−.013 (.022)	.557
	Polydrug use	.072	.094 (.039)	.017
	Exposure	.025	.004 (.005)	.442
	Belief	−.013	−.003 (.008)	.673
	Educational attainment	−.109	−.053 (.031)	.091
	Urban-suburban-rural	−.028	−.029 (.027)	.293
	Ethnicity (minority)	−.002	−.004 (.049)	.943
	Gender (female)	−.045	−.070 (.041)	.090
	Age	.073	.038 (.033)	.263
Transitional age 18-26 (n=1105/64%) R² = .141 (p = .000)	Intercept	-	−.221 (.310)	.477
	Violent victimization	.227	.214 (.029)	.000
	General offending	.119	.058 (.019)	.002
	Alcohol use	.025	.010 (.014)	.495
	Inhalant use	−.006	−.030 (.140)	.833
	Marijuana use	−.028	−.010 (.015)	.505
	Polydrug use	−.043	−.025 (.022)	.256
	Exposure	.167	.028 (.007)	.000
	Belief	.061	.014 (.008)	.081
	Educational attainment	−.027	−.010 (.013)	.425
	Urban-suburban-rural	−.013	−.013 (.029)	.656
	Ethnicity (minority)	.040	.068 (.051)	.187
	Gender (female)	−.025	−.034 (.040)	.407
	Age	−.016	−.004 (.009)	.641
Young adult age 27-35 (n=1215/70%) R² = .114 (p = .000)	Intercept	-	.550 (.319)	.085
	Violent victimization	.229	.208 (.026)	.000
	General offending	.069	.028 (.013)	.031
	Alcohol use	−.031	−.010 (.010)	.318
	Inhalant use	.029	.114 (.108)	.292
	Marijuana use	.017	.006 (.012)	.628
	Polydrug use	−.030	−.016 (.017)	.352
	Exposure	.123	.024 (.007)	.000
	Belief	.012	.003 (.006)	.696
	Educational attainment	−.068	−.017 (.007)	.019

Age group	Predictor	Standardized coefficient: b*	Unstandardized coefficient: b (standard error)	Statistical significance: p
	Urban-suburban-rural	−.043	−.037 (.025)	.131
	Ethnicity (minority)	.034	.049 (.041)	.231
	Gender (female)	.005	.006 (.031)	.857
	Age	−.049	−.014 (.008)	.074
Early middle age age 36-45 (n=1077/62%) R² = .048 (p = .000)	Intercept	-	.014 (.220)	.950
	Violent victimization	.176	.129 (.023)	.000
	General offending	.000	.000 (.007)	.999
	Alcohol use	−.004	−.001 (.005)	.899
	Inhalant use	−.009	−.015 (.050)	.770
	Marijuana use	−.002	−.001 (.008)	.949
	Polydrug use	.002	.001 (.011)	.951
	Exposure	.056	.005 (.003)	.102
	Belief	.006	.001 (.004)	.869
	Educational attainment	−.019	−.002 (.004)	.552
	Urban-suburban-rural	−.004	−.002 (.015)	.912
	Ethnicity (minority)	.072	.054 (.024)	.026
	Gender (female)	−.045	−.026 (.018)	.154
	Age	.000	.000 (.004)	.998

Table 3

Logged Frequency of Property Victimization

Age group	Predictor	Standardized coefficient: b*	Unstandardized coefficient: b (standard error)	Statistical significance: p
Adolescent age 11-17 (n=1120/65%) R^2 = .207 (p = .000)	Intercept	-	.031 (.345	.927
	Property victimization	.357	.334 (.027)	.000
	General offending	.132	.067 (.018)	.000
	Alcohol use	.024	.012 (.019)	.530
	Marijuana use	−.006	−.003 (.020)	.876
	Polydrug use	−.016	−.018 (.035)	.609
	Exposure	.019	.003 (.005)	.570
	Belief	.062	.014 (.007)	.063
	Educational attainment	−.068	−.029 (.028)	.314
	Urban-suburban-rural	−.051	−.046 (.025)	.066
	Ethnicity (minority)	.004	.007 (.045)	.880
	Gender (female)	−.073	−.097 (.037)	.009
	Age	.030	.013 (.030)	.657
Transitional age 18-26 (n=1105/64%) R^2 = .103 (p = .000)	Intercept	-	.088 (.256)	.730
	Property victimization	.257	.247 (.029)	.000
	General offending	.055	.022 (.015)	.145
	Alcohol use	−.004	−.001 (.012)	.917
	Inhalant use	.013	.051 (.115)	.661
	Marijuana use	.016	.005 (.013)	.701
	Polydrug use	.003	.001 (.018)	.946
	Exposure	.055	.008 (.006)	.172
	Belief	.020	.004 (.007)	.577
	Educational attainment	.027	.008 (.011)	.444
	Urban-suburban-rural	−.065	−.052 (.024)	.030
	Ethnicity (minority)	−.011	−.015 (.042)	.727
	Gender (female)	−.041	−.045 (.033)	.177
	Age	−.001	.000 (.007)	.968
Young adult age 27-35 (n=1215/70%) R^2 = .076 (p = .000)	Intercept	_	−.100 (.304)	.742
	Property victimization	.174	.171 (.028)	.000
	General offending	.074	.028 (.012)	.020
	Alcohol use	.004	.001 (.009)	.890
	Inhalant use	.014	.052 (.103)	.612
	Marijuana use	.017	.006 (.012)	.636
	Polydrug use	.025	.013 (.016)	.434
	Exposure	.088	.016 (.006)	.010
	Belief	.078	.015 (.006)	.014
	Educational attainment	.015	.003 (.007)	.614

Age group	Predictor	Standardized coefficient: b*	Unstandardized coefficient: b (standard error)	Statistical significance: p
	Urban-suburban-rural	−.086	−.069 (.024)	.004
	Ethnicity (minority)	.022	.030 (.039)	.445
	Gender (female)	.019	.019 (.030)	.519
	Age	−.018	−.005 (.008)	.527
Early middle age age 36-45 (n=1077/62%) R^2 = .070 (p = .000)	Intercept	-	−.140 (.358)	.696
	Property victimization	.206	.201 (.029)	.000
	General offending	.006	.002 (.012)	.847
	Alcohol use	−.024	−.006 (.009)	.459
	Inhalant use	−.010	−.027 (.082)	.740
	Marijuana use	−.052	−.020 (.013)	.131
	Polydrug use	.038	.021 (.019)	.251
	Exposure	.093	.014 (.005)	.008
	Belief	−.027	−.005 (.006)	.417
	Educational attainment	−.042	−.009 (.007)	.170
	Urban-suburban-rural	−.057	−.045 (.025)	.071
	Ethnicity (minority)	−.022	−.027 (.039)	.500
	Gender (female)	−.003	−.003 (.029)	.916
	Age	.056	.013 (.007)	.063

Table 4

Logged Frequency of General Offending

Age group	Predictor	Standardized coefficient: b*	Unstandardized coefficient: b (standard error)	Statistical significance: p
Adolescent age 11-17 (n=1120/65%) R² = .450 (p = .000)	Intercept	-	1.398 (.568)	.014
	General offending	.421	.423 (.031)	.000
	Violent victimization	.071	.120 (.045)	.008
	Property victimization	.075	.139 (.047)	.003
	Alcohol use	.095	.094 (.031)	.003
	Marijuana use	.033	.034 (.033)	.302
	Polydrug use	.047	.104 (.059)	.076
	Exposure	.073	.019 (.007)	.011
	Belief	−.046	−.020 (.012)	.095
	Educational attainment	−.020	−.016 (.047)	.726
	Urban-suburban-rural	−.033	−.058 (.041)	.157
	Ethnicity (minority)	−.014	−.043 (.074)	.557
	Gender (female)	−.088	−.232 (.062)	.000
	Age	−.031	−.028 (.050)	.575
Transitional age 18-26 (n=1105/64%) R² = .364 (p = .000)	Intercept	-	.317 (.533)	.552
	General offending	.350	.343 (.032)	.000
	Violent victimization	.040	.075 (.052)	.154
	Property victimization	.040	.094 (.062)	.128
	Alcohol use	.005	004 (.024)	.865
	Inhalant use	−.002	−.023 (.240)	.825
	Marijuana use	−.012	−.009 (.026)	.732
	Polydrug use	.023	.027 (.038)	.471
	Exposure	.225	.076 (.012)	.000
	Belief	−.045	−.020 (.014)	.141
	Educational attainment	−.028	−.021 (.022)	.344
	Urban-suburban-rural	−.004	−.008 (.050)	.867
	Ethnicity (minority)	−.026	−.089 (.088)	.315
	Gender (female)	−.083	−.224 (.070)	.001
	Age	.011	.006 (.015)	.697
Young adult age 27-35 (n=1215/70%) R² = .276 (p = .000)	Intercept	-	.527 (.717)	.462
	General offending	.350	.353 (.029)	.000
	Violent victimization	.086	.193 (.060)	.001
	Property victimization	.017	.045 (.068)	.505
	Alcohol use	.011	.009 (.022)	.699
	Inhalant use	.049	.478 (.243)	.049
	Marijuana use	.005	.005 (.028)	.865
	Polydrug use	−.066	−.087 (.038)	.023

Age group	Predictor	Standardized coefficient: b*	Unstandardized coefficient: b (standard error)	Statistical significance: p
	Exposure	.196	.095 (.015)	.000
	Belief	−.058	−.030 (.014)	.038
	Educational attainment	−.072	−.045 (.018)	.006
	Urban-suburban-rural	−.035	−.075 (.056)	.180
	Ethnicity (minority)	−.026	−.094 (.092)	.306
	Gender (female)	−.006	−.017 (.070)	.810
	Age	.023	.016 (.018)	.364
Early middle age age 36-44 (n=1077/62%) R^2 = .198 (p = .000)	Intercept	-	.312 (.768)	.685
	General offending	.311	.267 (.026)	.000
	Violent victimization	.007	.020 (.081)	.802
	Property victimization	.009	.019 (.064)	.781
	Alcohol use	−.008	−.005 (.019)	.786
	Inhalant use	−.014	−.088 (.176)	.615
	Marijuana use	−.023	−.020 (.028)	.476
	Polydrug use	.078	.102 (.040)	.011
	Exposure	.161	.058 (.011)	.000
	Belief	−.072	−.030 (.013)	.021
	Educational attainment	.001	.000 (.015)	.876
	Urban-suburban-rural	.031	.055 (.053)	.298
	Ethnicity (minority)	.015	.044 (.085)	.603
	Gender (female)	−.033	−.073 (.063)	.247
	Age	.002	.001 (.015)	.932