Is Emerging Adulthood Influencing Moffitt's Developmental Taxonomy? Adding the "Prolonged" Adolescent Offender

Christopher Salvatore
Montclair State University

Travis Taniguchi
Police Foundation

Wayne N. Welsh
Temple University

Abstract: *The study of offender trajectories has been a prolific area of criminological research. However, few studies have incorporated the influence of emerging adulthood, a recently identified stage of the life course, on offending trajectories. The present study addressed this shortcoming by introducing the "prolonged adolescent" offender, a low-level offender between the ages of 18 and 25 that has failed to successfully transition into adult social roles. A theoretical background based in prior research in life-course criminology and emerging adulthood is presented. Using data from the National Longitudinal Study of Adolescent Health analyses examined the relationship between indicators of traditional turning points and social bonds and low-level criminal offending and drug use. Several indicators including education, economic instability, and parental attachment were all predictive of offending and drug use.*

Keywords: Emerging Adulthood, prolonged adolescent offender, crime, drug use, and life-course criminology

INTRODUCTION

The journey to adulthood has drastically changed in the United States and other developed nations over the last 50 years (Cote 2000). Social scientists have noted the extension of the period between adolescence and adulthood; traditional markers of adulthood, such as marriage have been postponed resulting in delayed transitions to adulthood (Arnett 1998; Cote 2000). This prolonged stage of the life course has been identified as emerging adulthood (Arnett 1998). This period typically lasts from about age 18 to 25; although for many it can extend through the twenties and thirties. Many in emerging adulthood have high rates of risky and delinquent behaviors usually seen in adolescence. They have the potential to inundate jails and courts, further straining the already limited resources of the criminal justice system. It is argued here that this new stage of the life course may be influencing offending trajectories and extending the period of active offending for some

low-level offenders, hereafter referred to as "prolonged" adolescent offenders. The prolonged adolescent offender is defined as a low-level criminal offender (defined here as an offender who participates in less serious, non-violent crimes such as shoplifting), between the ages of 18 and 25 that has failed to transition to adult social roles that inhibit deviance and increase social bonds. As a result, prolonged adolescent offenders continue to commit low-level offenses (e.g., vandalism, being loud and rowdy in a public place) typically seen in adolescents.

Research dealing with emerging adulthood has focused mainly on risky behaviors such as reckless driving and substance use (Arnett 1998; Arnett 2005; Chassin, Pitts, and Prost, 2002; White, Labouvie, and Papadaratsakis 2005). Up to this point, there has been only a limited examination of crime during emergent adulthood (Markowitz and Salvatore 2012; Piquero, Brame, Mazerolle, and Haapanen 2002). The present study addresses this limitation by directly incorporating emerging adulthood into criminology, providing an examination of how emerging adulthood may be altering offending for some young adults. While prior studies have suggested that the 'maturity gap' identified by Moffitt (1993) may lead to longer periods of offending for some youth offenders, this study attempts to directly tie the influence of emerging adulthood to offending and to lay the foundation for further studies that may explore the influence of emerging adulthood on crime.

As the term "prolonged adolescent" implies, persons in this category have failed to make *on-time* transitions, normatively defined (relative to social norms) as transitions made at an age considered appropriate (relative to social norms), or meet turning points in trajectories that mark the entrance into adulthood (Laub and Sampson 2003; Thornberry 1997). For the first half of the twentieth century in the United States and other high income nations, transitions included going to college, getting a job, marrying, and having a family occurred during the late teens and early twenties (Arnett 2000; Cote 2000). However, in the last 50 years, changes in industrialized nations, including the decline of well-paying manufacturing jobs, an increase in low-paying service positions, a shift to a credential-based employment market, and a rise in the number of people earning post-secondary education, have all contributed to the delay in the timing of many traditional turning points (Cote and Allahar 1995). Those who make these transitions between the ages of 18-25 are considered *on time* (Elder 1985), and those who made either precocious or delayed transitions between the ages of 18 and 25 are considered *off time* (relative to social norms) (Thornberry 1997). Those who make *on time* transitions meet normatively defined turning points symbolizing successful entry into adulthood.

This article has 2 main goals: (1) to describe and identify, the prolonged adolescent offender in the context of the emerging adulthood phase of the life course, as well as being an addition to Moffitt's (1993) existing taxonomy, and (2) to explore the influence of traditional turning points and social bonds on offending behaviors of a sample of emerging adults.

Crime, Deviance and Emerging Adulthood

The key to understanding prolonged adolescent offenders is to understand the factors that influence and motivate their offending. Emergent adults are not subjected to the same levels of formal and informal social controls faced by adolescents, and without the informal social controls and attachments built through marriage, family, and employment, those in emerging adulthood have fewer social bonds to inhibit risky, deviant, and criminal behaviors (Salvatore and Taniguchi 2012). The motivation most often found for various forms of risky behavior that emerging adults engage in is sensation seeking, the need for new and intense sensory experiences, which many emerging adults consider a part of their identity exploration (Arnett 1994; Gottfredson and Hirschi 1990). Since emerging adulthood is a relatively new phenomenon there has only been limited research exploring the relationship between crime and this new stage of the life course.

One study that has examined offending during emerging adulthood is Piquero et al. (2002) which examined the impact of emergent adulthood on the criminal activity of male parolees released by the California Youth Authority between the ages of 21 and 28. Piquero et al. (2002) found that arrest rates for both nonviolent and violent offenses peaked in the early 20s, during emerging adulthood. More recently, using data from the National Longitudinal Study of Adolescent Health, Markowitz and Salvatore (2012) examined the influence of social bonds and turning points on race-based offending patterns, finding that emerging adulthood may be influencing both less and more serious offending across racial groups. One of the strongest arguments for the influence of emerging adulthood on offending came from Moffitt et al. (2002). Using a more recent wave of data from the Dunedin study, Moffitt et al. found that at age 26, some adolescent limited offenders had many legal and personal problems including: mental health problems, property offenses, financial problems, and substance dependence. Moffitt stated that members of the Dunedin cohort may still be experiencing many of these problems in their early 20's because of a "new developmental stage called *emerging adulthood*" (p.200). Moffitt et al.'s (2002) conclusion support the idea that emerging adulthood may have influenced the offending patterns of the Dunedin sample as they matured, specifically influencing the offending

patterns of some adolescent limited offenders. The findings of these studies suggest emerging adulthood is an important area of inquiry and may be influencing offending trajectories for some offenders.

Other studies such as Sampson and Laub (2003) have employed latent class models to examine desistance patterns. It should be noted that the goal of the present study is simply to introduce a new conceptual idea, and examine existing data for the influence of emerging adulthood on altering the effectiveness of turning points and social bonds in reducing offending. However, it is important to consider the role of prior studies that have examined offending trajectories over the full life course as they represent an ideal way for future studies to examine the lifelong influence of emerging adulthood on offending patterns over the life course.

Using data from the Glueck's *Unraveling Juvenile Delinquency* Study, Sampson and Laub (2003) attempted to identify latent offender groups based on retrospective patterns of offending in order to address the relationship between age and desistance. The crime-specific analyses of their study revealed five groups of violent and alcohol/drug offenders (328-330), all of whom eventually reduce offending as they age (Sampson and Laub 2003: 328-330). These findings suggest that even if emerging adulthood alters offending trajectories by increasing their incidence of crime, its influence will dissipate as individual's age.

Criminological Context of the Prolonged Adolescent Offender

Drawing mainly on the work of Moffitt (1993) and Moffitt, Caspi, Rutter, and Silva (2001), the prolonged adolescent offender can be placed within the context of existing offender typologies. Moffitt (1993) describes two primary groups of offenders: adolescent limited (AL), which make up most offenders, and the life course persistent offenders (LCP), a smaller and more serious group.

Adolescent limited offenders have mostly normal and healthy childhood backgrounds. Their antisocial behavior coincides with puberty and is largely the result of the confusion experienced through the role-less years between biological maturation and transitioning into the adult world by means of access to mature privileges and responsibilities. Their antisocial behaviors consist mainly of minor, non-predatory, status offenses (e.g., public drunkenness and vandalism) that begin in adolescence and usually desist as they enter young adulthood and are assimilated into the adult social world. It should be noted that some adolescent limited offenders may be 'caught' in the 'maturity gap,' and continue to offend. It is these individuals who are likely to continue to offend as 'prolonged adolescent' offenders.

Conversely, life course persistent offenders commit more serious, predatory crimes and begin offending at an earlier age. Antisocial behaviors of young (LCP) children are aggravated by neuropsychological deficits and social environments characterized by instability, poverty, inadequate or harsh parenting, and weak or disrupted social bonds (Moffitt et al. 2001). As children age, negative relationships outside the family (e.g., poor relations with peers and teachers) are molded by their experiences in early childhood. Throughout the first 20 years of life there is a cumulative effect of the negative transactions between the individual and his or her environment resulting in a disordered personality characterized by physical aggressiveness and antisocial behaviors that continue through midlife (Moffitt et al. 2001).

Here we are introducing the possibility of an addition to Moffitt's taxonomy by classifying those adolescent limited offenders who are caught in the maturity gap. This is of value because it links emerging adulthood to the maturity gap as conceptualized by Moffitt (1993) and Moffitt et al. 2001. The prolonged adolescent offender, defined as an adult between the ages of 18 and 25 who continues to commit low-level, petty offenses (e.g., vandalism, disorderly conduct), lacks a strong bond to conventional society (e.g., lack of religious participation), engages in risky behaviors (e.g., drug use), and is unmarried. The prolonged adolescent offender engages in crime and deviance because of failure to breach the maturity gap (Moffitt et al. 2001) and achieve adult status, as symbolized by reaching the turning points of marriage, stable employment, and completion of higher education.

The prolonged adolescent offender is similar to the adolescent limited offender in that his or her offending is related to dysphoria between biological maturation and social maturation. Unlike the adolescent limited offender, the prolonged adolescent offender has chronologically aged out of adolescence but has failed to breach the maturity gap. Stuck in the emergent adulthood stage of the life course, the prolonged adolescent offender has not transitioned to adult roles (e.g., marriage) and continues to engage in low-level offenses typical of ALs.

LIMITATIONS OF PRIOR RESEARCH

The aforementioned studies support the argument that emerging adulthood is an important new stage of the life course. However, life course criminology has yet to incorporate emerging adulthood. Moffitt et al. (2001) stopped short of examining the latter stages of emerging adulthood in the Dunedin study where the prolonged adult offender would appear. Although Moffitt et al. (2002) followed up this study when participants were age 26 and found support for the influence of emergent

adulthood on offending, that study had two major characteristics that may limit the applicability of its findings. First, the sample did not include females. Second, there was a lack of heterogeneity in the sample, with the participants being mainly White (93%), contrasting with other developed nations such as the United States that have much greater levels of racial diversity.

Previous research in the area of emerging adulthood (such as Arnett 1998, 2000, 2001) has largely addressed risky behaviors like smoking, alcohol consumption, drunk driving, and dangerous sexual behaviors, but has not examined criminal offending in the emergent adulthood phase. The limited research on criminal offending during emerging adulthood (Piquero et al. 2002) used data from the California Youth Authority that may not be generalizable to a national population because the sample consisted of serious juvenile offenders only, instead of a general population sample of those in their early twenties. Other studies that have used national samples (e.g., Markowitz and Salvatore 2012) have only presented cursory examinations of the possible influence of emerging adulthood on offending, and did not examine the possibility of an extension to Moffitt's taxonomy due to emerging adulthood.

Since emerging adulthood is a new area of study and criminal offending within the prolonged adolescent group is largely unexplored, this study breaks new ground by examining the possibility of a new type of offender linking Moffitt's "maturity gap" and emerging adulthood as factors that influence offending in some youths. Analysis of the prolonged adolescent offender may provide new information on the way life course theorists view offender typologies.

METHODS

Data for this study were taken from the National Longitudinal Study of Adolescent Health (Add Health). Add Health is a longitudinal study of adolescents and young adults who were enrolled from 7th through 12th grade during the 1994-1995 academic year (Harris et al. 2003). The purpose of the Add Health study was to create a sample that is nationally representative of adolescents and collect data to measure the impact of social environment including the effects of peers, family, education, religion, and community on adolescent health and general well-being in the United States (Harris et al. 2003). The study was mandated by the U.S. Congress in the National Institute of Health Revitalization Act of 1993.

Add Health data have been collected in four longitudinal "waves." Wave 1 was collected between April and December of 1995 and consisted of more than 6,500 in-school and in-home self-report interviews of participants ranging in age from 11 through 21. Interview

topics included information on employment experience, educational aspirations and expectations, substance use, criminal activities, the ordering of events leading to romantic and sexual partnerships, peer networks, and family composition and relationships (Udry 1998; 2003). Wave 2 data were collected approximately one year later and included follow up questions on the same topics noted above. Wave 3 data were collected between August 2001 and April 2002 when participants were between the ages of 18 and 26. Wave 3 was utilized for this study because it captures information on the sample when they were in the early stage of emerging adulthood, the period most likely where these individuals would be 'stuck' in the maturity gap as conceptualized by Moffitt. Wave 4 was collected in 2008 when the sample was between the ages of 24 and 32. The complete Add Health data set is available in two forms: a restricted sample available to researcher by way of special permission, and a reduced version of all three waves available to the public (this latter version was used for this analysis).

The analytical benefits to be derived from use of this comprehensive, multi-wave longitudinal data set can be seen through the numerous research studies that have used Add Health to examine relationships between socio-biological maturation and offending (Boutwell and Beaver 2008; Beaver, DeLisi, Vaughn, and Wright 2010; Guo, Roettger, and Cai 2008). In addition, the Add Health data reflect a significant degree of racial diversity among participants, a feature that lends itself well to this research and overcomes criticisms of the racial homogeneity found in many longitudinal data sets (e.g., Laub and Sampson 2003).

Establishing Offender Typologies

To examine whether emerging adulthood is influencing offending, prolonged adolescent offenders (AAOs) need to be distinguished from Life Course Persistent (LCP) offenders, as described by Moffitt (1993).[1] Dichotomous "prolonged adolescent" and "life course persistent" offender variables can be created by employing a similar procedure as the one used by Barnes and Beaver (2010), who also used Add Health data. Barnes and Beaver devised a 3-step process to create an "adolescent limited" (AL) variable. First, the wave 1 and wave 2 serious delinquency scales were merged into a single additive scale. Barnes and Beaver (2010) argued that the serious delinquency scale was more appropriate than a general delinquency scale because of Moffitt's hypothesis that LCPs would have greater levels of involvement in serious delinquency than ALs. Using serious delinquency scales will allow for a more accurate distinction between AL and LCP offenders (Barnes and Beaver 2010).

The last step in Barnes and Beaver's process dichotomized the remaining sample into two groups: AL

and LCP offenders. ALs (n = 581) were defined as respondents who scored below the 95th percentile on serious delinquency. AL offenders were assigned a value of "1." Conversely, LCP (n = 289) offenders were defined as respondents who scored *higher* than the 95th percentile. LCP offenders were assigned a value of "0." Moffitt (1993) stated that there might be overlap between the types of offenses ALs and LCPs commit, since LCPs may commit both minor and serious offenses, whereas ALs should participate only in low-level offenses.

This study is cross sectional in nature and focused exclusively on those in the emerging adulthood stage of the life course (wave 3). In order to separate AAOs from the more serious LCPs, we amended Barnes and Beavers procedure. At wave 3 an amended two-step procedure was used. The first step used only the serious crime scale from wave 3 of the data. This adjustment was made because there are approximately 5 years between waves 2 and 3, including data from the earlier waves in the taxonomy at wave 3 which may have artificially inflated the group sizes. The next step created two dichotomous variables, AAOs (0 = all others; 1 = AAOs) and LCPs (0 = all others, 1 = LCPs). AAOs were defined as respondents who scored below the 95th percentile on serious delinquency; LCPs were defined as respondents who scored in the upper 5th percentile. These two variables allowed this analysis to control for offender type and provide a way to compare the rate of offending and drug use for AAOs and LCPs.

It should be noted that the methodology employed here to separate the categories of offenders is limited as we are examining this phenomenon as it happens, compared to a more ideal retrospective design (e.g., Laub and Sampson 2003) that would allow us to identify offenders early in the life course and follow their offending trajectories through old age. However, this study represents a first-step in examining the possible influence that emerging adulthood has on established trajectories, and as such faces challenges and limitations. Add Health is one of the first studies to examine a cohort of emerging adults, as this cohort ages, and more waves of the Add Health data are made available, more sophisticated methods will be employed to identify and separate offender categories.

Dependent Variables

In order to explore the relationships between prolonged adolescent offenders and low-level crime and low-level drug use, two scales that measure these behaviors were created. The crimes in the low-level offending scale included damaging the property of others, stealing an item worth less than $50, buying, selling, or holding stolen property, using someone else's credit card, bank card, or automatic teller card without their permission or knowledge, and deliberately writing a bad check (α=.586)[2]. Responses for the variables were coded 0 = never, 1 = one or two times, 2 = three or 4 times, and 3 = 5 or more times. The 5 items were subjected to principal components analysis (PCA), which yielded a Kaiser-Meyer-Oklin value of .685 that was significant using Bartlett's test of Sphericity. The analysis revealed the presence of one component with an eigenvalue exceeding 1, explaining 38.94% of the variance.

Moffitt (1993) argued that many AL offenders would experiment with drugs and alcohol as a representation of their movement towards independence and maturity. As a result, this study utilized a low-level drug use scale based on operationalization derived from other research that has used the Add Health data (e.g., Barnes and Beaver 2010; Boutwell and Beaver 2008; Beaver et al. 2010).

The wave 3 (α = .621) low-level drug use scale measured the types of low-level drugs used, asking respondents if they had used cigarettes, alcohol, or marijuana since the last interview date. These 3 items were subjected to PCA, with a Kaiser-Meyer-Oklin value of 0.646 and a significant test of Sphericity, supporting the factorability of the correlation matrix. Principal components analysis revealed the presence of one component with eigenvalue exceeding 1, explaining 56.86% of the variance.

Both the low-level crime and drug use scales were summed so that higher values reflected greater levels of participation in non-violent forms of delinquency/crime and drug use. Descriptive statistics for these scales are presented in Table 1.

Table 1. Descriptive Statistics for Dependent Variables

Dependent Variables	N	Mean	SD
Prolonged Adolescent Offending	4850	0.344	0.988
Prolonged Adolescent Drug Use	4856	1.95	1.02

Note: Dependent variables were calculated from data obtained from the third wave of the Add Health survey.

Independent Variables

To examine the effects of demographic variables, age, gender, and race were included in the models. Age was measured as a continuous variable. The relationship between age and crime is a contentious one, with some arguing that the age-crime curve is invariant, having no variation across historical period, geographic location, or other cultural factors (Gottfredson and Hirschi 1990). The opposing viewpoint is that the age-crime curve does demonstrate variance in factors like gender and type of crime (Moffitt et al. 2001; Moffitt 1993; Farrington 1986). While this study does not seek to test the age-crime curve, we hypothesize that if the core research questions are supported this may support the latter viewpoint that the age-crime curve does demonstrates variance based on factors such as delaying traditional turning points.

Gender was coded as "0" for male and "1" for female. Gender is of interest because prior studies (e.g., Laub and Sampson 2003) were conducted largely with male samples. Scholars such as Belknap (2007) argue that female criminality has been largely unexplored relative to male criminality; including gender in this study will address this criticism and provide an examination of the possible differences in male and female offending during emerging adulthood. Further, inclusion of gender allows this study to examine whether the turning points and social bonds that were so effective for the men in Laub and Sampson's study are effective for women.

Moffitt et al. (2001) suggested that the peak of anti-social behavior in females is near the peri-puberal period because girls at this stage are most likely to affiliate with older, delinquent male peers. Based on Moffitt et al's (2001) findings we hypothesize that females during emerging adulthood would be less likely than males to offend as they have "aged out" of the period where they are most likely to participate in delinquent behavior.

Because of the relatively low number of other racial groups (Asian, American Indian, and Hispanic) relative to Whites and Blacks, two dichotomous variables, White (1 = White; 0= all others) and Black (1=Black; 0 = all others) were included in the multivariate models (see Table 2 for demographics and independent variables). Other independent variables for each wave were grouped into several categories that describe either life-course turning points (e.g., marriage) or social bonds (e.g., parental attachment).

Assessing the significance of a "prolonged adolescent offender" effect on patterns of criminality required the creation of a series of life-course transition and social bond indices comprised of relevant socio-cultural variables and applied to wave 3 of Add Health data.

The first is *marital status* which will be included as a dichotomous variable (0 = no; 1 = yes). Since getting married is a traditional turning point, we would expect a significant relationship between being single and engaging in crime at wave 3. A second turning point indicator was whether the subject *has any children* (0 = no; 1 = yes). We hypothesize that those who have children would be more likely to commit crime, as prior research (e.g., Moffitt 1993) has identified precocious parenthood as a potential "snare" that could "catch" an individual into offending. Next, we created a 2-item *parental bonds* scale based on prior studies (Barnes and Beaver 2010; Boutwell and Beaver, 2008; Beaver et al. 2010) that have used the Add Health data. Items included: how close did the respondent feel they were to their mother and how close did they feel toward their dad? Responses to each question were z-scored and summed in additive scales with higher values reflecting greater level of parental attachment. It should be noted that these questions measured perceived closeness with parents and here are being used as a proxy for parental attachment, with those who perceive a stronger bond with parents having a stronger attachment. We hypothesized that those with greater levels of parental attachment would be less likely to offend.

To find out whether military service has an independent effect on crime, a variable available at wave 3 that measured military service (0 = no; 1 = yes) was included. Prior research found that (active) military service acted as a turning point away from crime for previous generations, and military service has often been identified as a social marker of adulthood (Laub and Sampson 2001; Okimoto and Stegall 1987). We hypothesize that those who serve in the military will have lower rates of offending and drug use.

To examine the influence of employment on crime two variables were examined: *hours worked per week* and *how satisfied you are with your job* (higher score = greater level of satisfaction). We hypothesized that those who work more hours will be more likely to offend. This hypothesis is based on prior research (e.g., Wright, Cullen, and Williams 1997) which has found than the more a juvenile works the more likely they are to participate in criminal behavior. In contrast, we hypothesize those with higher levels of job satisfaction will have stronger bonds to employment and will be less likely to offend.

The role of education was examined using *highest grade completed* (higher score = more education) this variable was measured at all three waves of data collection. Completing higher education has traditionally acted as a turning point and social marker of adulthood (Cote 2000). Those who have higher levels of education typically have greater levels of social capital, earn higher salaries, and are less likely to engage in crime.

The addition of an index gauging economic well-being (α=.58) and property owned (α=.55) are included because economic instability has been identified as a characteristic of emerging adulthood (Arnett 2005; Cote 2000). Those in emerging adulthood have less stable employment and incomes, and as a result, have less stability and weaker social bonds. We hypothesized that those who score higher on the *economic instability* (higher score = less economic stability) and lower levels of property owned at wave 3 would be more likely to offend as AAOs. We hypothesized that those who are AAO offenders are less likely to own property because of their failure to reach turning points. The indices we adopted were derived from previous studies such as Haynie, Weiss, and Piquero (2008). The index consists of whether one owns the following items: a residence (house, condo, or mobile home), a motor vehicle (car, truck, or motorcycle), or a computer. The index also includes a question on whether one has a checking account and a credit card. Higher scores on the property owned scale indicate greater levels of property. The

second index is economic well-being. It is based on responses to the following questions: "in the past 12 months was there a time when..." "…you were without telephone service because you did not have enough money to pay the bill," "…did not have enough money to pay the full amount of rent or mortgage," "… were evicted from house/apartment for not paying the rent or mortgage," "…did not pay the full amount of gas, electric, or oil company would not deliver," and "…needed to see a doctor or go to the hospital, but did not because you could not pay the bill."

The final variable examined was *attendance at religious services* (higher score = more participation). Prior studies have argued that emerging adults are less likely to engage in religious services (Arnett 1998), and that religious participation acts to inhibit deviance (Laub and Sampson 2001). We expected that those with higher levels of religious participation will have lower rates of AAO offending and drug use. Descriptive statistics can be found in Table 2.

Table 2. Descriptives of Independent Variables at Wave 3 (N=4880)

Variable	Min	Max	Mean	SD
Age	18	25	22	1.76
Attendance at Religious Services	0	6	2.12	1.95
Current Job Satisfaction	1	5	3.92	0.90
Economic Well – Being	0	5	0.44	0.84
Highest Grade in School	6	22	13.22	1.99
Hours Worked Scale	3	90	36.80	12.48
Parental Attachment Scale	1	10	7.00	2.24
Property Owned Scale	0	5	2.74	1.33

	Frequency	Percentage
Currently Service in the Military		
No	4749	98.3
Yes	76	1.6
Gender		
Females	2629	54.0
Males	2253	46.0
Have Any Children		
No	3340	69.2
Yes	1487	30.8
Marital Status		
Not Married	4028	83.4
Married	801	16.6
Race		
White	2859	59.2
Black	1113	23.0
All Others	851	17.6

RESULTS

Count models were used because the outcome variables consisted of a discrete count of events, in this case either the number of low-level offenses that have occurred in the past 12 months or the number of times low-level drugs were used in the past 12 months (Hilbe 2008). Parameters are presented as Incident Rate Ratios (IRR) given their ease of interpretation. For example, an IRR of 3.0 would suggest a one unit change in the independent variable would be expected to increase the average predicted count on the dependent variable by a factor of 3.0, while holding all independent variables constant. In contrast, an IRR of 0.25 would indicate that a one unit change in the independent variable would be expected to decrease the average predicted count on the dependent variable by a factor of 0.25, while holding all other independent variables constant (Long and Freese 2006).

Offending Scale

Three models were run using the offending scale outcome; results of the final model will be discussed here (see Table 3 for the results of all models). Of the demographic characteristics age and gender were both significant in the final model. For every additional year in age, there was a 9.0% decrease in the incidence of offending, (p < .01, IRR = 0.91). Females, compared to males, while holding all other variables in the model constant, were expected to have a 46.0% lower count of offending (p < .01, IRR = 0.54). Both dummy variables for AAOs and LCPs were significant. AAOs compared to others, had an expected count approximately 3.4 times greater for low-level offending (p < .01, IRR = 3.43) relative to other groups. LCPs, had a 7 times higher rate of offending, compared to other groups (p < .01, IRR = 8.22).

Turning points found to be significant were education and the number of hours worked per week. For participants having higher levels of education there was a 7% *increase* in the rate of offending (p < .01, IRR = 1.07). This result was surprising, as it was expected that having higher levels of education would inhibit offending, a hypotheses supported by existing research (e.g., Lochner and Moretti 2004). The number of hours worked per week was also significant. Every additional hour worked was associated with a 9% *decrease* in the rate of low-level offending, holding all other variables constant (p < .05, IRR = 0.91). Traditional control theory's concept of "involvement" with convention might have predicted this since it argues that more hours working in conventional jobs, gives less time available for delinquency.

Several of the indicators of social bonds were significant including economic instability, parental attachment, and religious participation (see also involvement in convention, above). Economic instability had the strongest impact of the statistically significant social bonds. For every one unit standard deviation increase in the economic stability scale, there was a 36% increase in the rate of offending (p < .01, IRR = 1.36). Parental bonds had the next strongest influence, with an 11% decrease in the incidence of offending, for every one unit increase in parental bonds (p < .01, IRR = 0.89). Religious participation was also significant, for every one unit increase in religious participation, there was a 4.0% decrease in the incidence of offending (p < .05, IRR = 0.96). The next series of models examined the predictive power of the independent variables and drug use.

Drug Use Scale

Three separate models were completed (see Table 4 for results of all models), the last of which will be discussed. Of the demographic variables, both race variables and both offending category variables were significant. Blacks, as compared to other groups, had a 16% lower expected count of drug use (p < .01, IRR = 0.84). Conversely, whites, as compared to other groups, had an expected count 6% higher than other groups on drug use, while holding all other variables constant in the model (p < .01, IRR = 1.06). AAOs, as compared to other groups, had an expected count 26% higher on drug use, holding all other variables constant (p < .01, IRR = 1.26). LCPs, compared to others, had an expected count 32% higher on low-level drug use, controlling for all other variables in the model (p < .01, IRR = 1.32).

Two indicators of turning points, marital status and education, were significant in the full model relating to drug use. Those who were married, as compared to those who were not, had a 6.0% decrease in the count of drug use, controlling for all other variables in the model (p < .05, IRR = 0.94). Education was significant with a 1% increase in the incidence of low-level drug use for every year of additional education, controlling for other variables in the model (p < .05, IRR = 1.01).

Several of the indicators of social bonds included in model were significant including: religious participation, economic instability, parental attachment, and ownership of property. Economic instability and ownership of property were the variables with the strongest relationships to drug use. For economic instability, there was a 5% increase in less serious drug use for every

Table 3. Negative Binomial Regression Models of Independent Variables
on the Prolonged Adolescent Offending Scale

AAO Scale[1]	Model 1			Model 2			Model 3		
	B	[SE]	IRR	B	[SE]	IRR	B	[SE]	IRR
Age	-0.09	(0.021)**	0.92	-0.08	(0.023)**	0.92	-0.01	(0.023)**	0.91
Gender	-0.54	(0.075)**	0.58	-0.55	(0.077)**	0.57	-0.61	(0.078)**	0.54
Black	-0.01	(0.133)	0.99	-0.02	(0.114)	0.98	-0.03	(0.114)	0.97
White	-0.07	(0.097)	0.93	-0.10	(0.098)	0.90	-0.11	(0.098)	0.89
AAOs	1.29	(0.096)**	3.61	1.29	(0.096)**	3.62	1.23	(0.096)**	3.43
LCPs	2.19	(0.106)**	8.96	2.19	(0.106)**	9.01	2.11	(0.106)**	8.22
Military				0.04	(0.288)	1.04	0.07	(0.283)	1.08
Children				-0.07	(0.091)	0.93	-0.10	(0.091)	0.90
Education				0.05	(0.205)*	1.05	0.07	(0.022)**	1.07
Hours Worked				-0.01	(0.004)*	0.99	-0.01	(0.004)*	0.91
Married				-0.18	(0.124)	0.83	-0.17	(0.127)	0.84
Religious Services							-0.04	(0.020)*	0.96
Economic Instability[1]							0.31	(0.057)**	1.36
Job Satisfaction							-0.05	(0.040)	0.95
Parental Attachment[1]							-0.12	(0.037)**	0.89
Property Owned[1]							0.07	(0.073)	1.08
Constant	0.44	(0.468)		0.06	(0.501)		0.52	(0.538)	
* p < .05 ** p < .01	Chi–Square = 645.03 Df = 6 AIC^2 = 1.288			Chi–Square= 664.22 Df =11 AIC^2 = 1.286			Chi–Square= 720.17 Df =16 AIC^2 = 1.277		

1. Values for each variable were z scored and summed.

2. The Aikake Information Criterion (AIC) is based on the log-likelihood function and is a measure of model fit. Models with the smallest value are considered to have the best fit (Hilbe, 2008)

standard deviation increase in the economic instability scale (p < .01, IRR = 1.05). In regards to property ownership, there was a 5% increase in less serious drug use, for every standard deviation increase in the amount of property owned (p < .05, IRR = 1.05). Religious participation was the next strongest indicator; there was a 5.0% decrease in the incidence of less serious drug use (p < .01, IRR = 0.95) for every standard deviation increase in religious participation. The final social bond that was significant was parental attachment. There was a 3.0% decrease in the incidence of low serious drug use for every one unit increase in the parental attachment scale (p < .01, IRR = 0.97).

DISCUSSION

This study sought to address two primary research questions: Has emerging adulthood extended the active period of offending for some offenders? And do turning points and social bonds reduce crime for emerging adults as they have for prior generations? To address the first question we identified approximately 11% of the sample as Prolonged Adolescent Offenders, another 6% were classified as Life Course Persistent Offenders. The identification of the AAO group provides support for the idea that there is a low-level offending trajectory, similar to Moffitt's adolescent Limited Offender, still actively offending during emerging adulthood. Separating AAOs and LCPs was useful because it allowed a comparison of the count of offending and drugs used for each group, typically finding that AAOs have lower counts of both low-level offending and low serious drug use. These findings provide additional support that AAOs may exist, and they are a less serious offender than LCPs. In regards to our second question we found several turning points and social bonds that did predict changes in the counts of

Table 4. Poisson Regression Models of Independent Variables
on the Prolonged Adolescent Offending Drug Use Scale

AAO Drugs Used Scale[1]	Model 1			Model 2			Model 3		
	B	[SE]	IRR	B	[SE]	IRR	B	[SE]	IRR
Age	0.01	(.006)	1.01	0.007	(.006)	1.01	-0.001	(0.006)	0.99
Gender	-0.04	(.021)	0.96	-0.034	(.022)	0.97	-0.025	(0.022)	0.97
Black	-0.20	(.034)**	0.82	-0.204	(.034)**	0.82	-0.173	(0.035)**	0.84
White	0.90	(.028)**	1.09	0.081	(.028)**	1.08	0.066	(0.028)*	1.06
AAOs	0.26	(.031)**	1.30	0.258	(.031)**	1.29	0.232	(0.032)**	1.26
LCPs	0.32	(.038)**	1.38	0.317	(.039)**	1.37	0.281	(0.039)**	1.32
Military				-0.105	(.087)	0.90	-0.111	(0.087)	0.89
Children				-0.009	(.026)	0.99	-0.021	(0.026)	0.98
Education				0.006	(.005)	1.01	0.015	(0.006)*	1.01
Hours Worked				0.001	(.001)	1.00	0.001	(0.001)	1.00
Married				-0.089	(.031)**	0.91	-0.066	(0.033)*	0.94
Religious Services							-0.048	(0.006)**	0.95
Economic Instability[1]							0.046	(0.017)**	1.05
Job Satisfaction							-0.018	(0.011)	0.98
Parental Attachment[1]							-0.029	(0.010)*	0.97
Property Owned[1]							0.050	(0.021)**	1.05
Constant	0.51	(0.133)		0.39	(0.142)		0.62	(0.154)	
* p<.05 ** p<.01	Chi – Square = 243.6 Df = 6 AIC[2] = 3.04			Chi – Square = 258.9 Df = 11 AIC[2] = 3.04			Chi – Square = 360.2 Df = 16 AIC[2] = 3.02		

1. Values for each variable were z scored and summed

2. The Aikake Information Criterion (AIC) is based on the log-likelihood function and is a measure of model fit. Models with the smallest value are considered to have the best fit (Hilbe 2008)

offenses and drugs used. These findings will be discussed below.

Age, gender, and race were included in these analyses as statistical controls. The most relevant findings for this study were regarding the relationship between age and offending. There was a significant, negative relationship found between age and AAO offending. This supports the relationship hypothesized, that offending decreases as people age as well as prior research that has found low-level offending decreases as individual's age over the life course.

Gender was a significant predictor for the models using the low-level offending outcome, with being female predicting lower levels of offending. These findings support the hypothesized relationship that females have lower levels of offending. These findings also provide an indicator that traditional turning points and social bonds still "work" for females. Further, despite increases in the overall rate of female offending in recent years (Belknap 2007), the findings of this study support prior research that female criminality peaks early in the life course and women offend, at least for the crimes measured in this study, less than men.

Race was not a significant predictor of low-level offending. However, race was a significant predictor of low-level drug use, with Blacks having lower expected counts of low-level drug use. Initially, this finding was surprising, as Blacks have higher rates of arrest and incarceration for drug crimes. However, this finding supports data reported in the National Household Survey on Drug Use and Health, 2005, and other studies that have found Blacks have lower rates of drug use than Whites and other racial/ethnic groups (e.g., Mumola and Karberg 2006).

Higher levels of education were found to increase both low-level offending and low-level drug use. These findings may be explained as typical forms of deviance and alcohol and drug use found on college and university campuses. These findings are of particular importance as they were in the opposite of the direction expected, and were contrary to a large portion of prior research examining the relationship between education and offending. These findings may imply that education interacts differently for those in emerging adulthood possibly due to several factors, including the prolonged adolescence that many experience during emerging adulthood, the increase in the rate of college attendance, and the decrease in informal social controls that accompany many of the delayed turning points during emerging adulthood. Future studies may want to conceptualize the role of education during emerging adulthood as *influencing* low-level offending and drug use and those in emerging adulthood may be participating in high rates of drug and alcohol experimentation.

Military service was not related to either low-level offending or drug use. This finding was not unexpected as only a small number of the participants (n = 76) were actively serving in the military at the time of the wave 3 data collection.

The numbers of hours worked per week were also a significant predictor of low-level offending, with those who worked more hours having lower levels of offending. This finding was in the predicted direction relative to involvement in convention. This may indicate that working more hours works differently for those in emerging adulthood compared to adolescents. The remainder of this section will discuss the findings dealing with social bonds and how they influence criminological theory.

Religious participation was found to reduce low-level offending and drug use. These findings are consistent with previous research and are of value because research in emerging adulthood has found that emerging adults are less likely to attend religious services (Arnett 1998). However, this study found that religious participation is still an effective social bond and, as such, has utility in explaining the relationship between offending and drug use for emerging adults. Furthermore, drug and alcohol treatment programs targeting emerging adults may want to incorporate a faith-based component, as religion may provide a key factor in drug rehabilitation.

One of the most interesting findings dealt with economic instability which was related to both low-level offending and drug use, with those having higher levels of economic instability having higher expected counts of both behaviors. This is of importance for criminological theory because it supports the idea that economic instability is a significant predictor of offending and drug

use for emerging adults. The role of economics has been included in prior theoretical discussions (see Wilson 1987; 1996), but recent economic shifts that have led to emerging adulthood, as well as the current economic crisis may play a vital role in offending patterns of emerging adults. Life course theory in particular, should place greater emphasis on economic well-being, a concept typically discussed in other theoretical arenas such as strain theory. Merton's (1938) theory argued that society's mainstream culture places pressure on individuals to accomplish societal goals, such as a middle class lifestyle reflected in the notion of "The American Dream," but that few actually have access to the opportunities and means necessary to reach these goals. This mismatch between cultural goals and structural means to achieve them leads some to use crime as an innovative adaptation to this to this societal strain and as a way of attaining cultural goals. The cultural pressure to achieve society's (material) goals has increased since Merton first proposed his theory, yet, as discussed extensively here, many have a decreased likelihood of living a middle class lifestyle and attaining those goals. Future studies may want to integrate Arnett's theory of emerging adulthood with strain theory and the increasing mismatch of goals and means due to the economic downturns of the last several years.

Parental attachment was a predictor of low-level offending, with higher levels of parental attachment predicting a reduction in low-level offending. These findings support prior studies (e.g., Hirschi 1969; Moffitt et al. 2001) and support the hypotheses that bonds with parents are a valid and important relationship that can reduce offending for emerging adults. The findings of this study indicate that theorists should continue to place an emphasis on familial bonds as they explore theoretical explanations of criminal and delinquent behaviors.

Other measures of turning points and social bonds were not found to be significantly related to crime and drug use. These findings are inconsistent with prior research (Arnett 1998; Chassin et al. 2002; Laub and Sampson 2003; White et al. 2005). It is possible that marriage may no longer be as strongly related to criminal behavior because the social changes that have contributed to emerging adulthood prevent marriage from serving as the major turning point it once had in the past. Alternatively, marriage has been increasingly postponed, and it is possible that the influence of marriage on offending trajectories may not been seen until the sample is older and more participants are married. Additionally, other forms of relationships (e.g., cohabitation, same-sex relationships) may need to be examined as they may function as a proxy for traditional marriage.

Future Research/Limitations

Like many prior studies, the findings of this project answer many questions, but also bring others to the forefront. One important avenue for future research will be the long-term influence of emerging adulthood for the "prolonged adolescent" offender and life course persistent offenders. As discussed previously, future studies using these data may be able to identify offending trajectories retrospectively, a more suitable way to identify and compare types of offenders.

There were two limitations to this study that are of interest. First, the diminished role of military service is important because prior studies found military service acted as a turning point for most away from crime and deviance for the World War II generation, but was less effective for later generations. What has yet to be explored thoroughly is how military service has impacted emerging adults, particularly those serving in the Middle East. This current conflict, like Vietnam, has been contentious in general society, with much initially supporting military presence, but as time has passed, the presence of the military has become more controversial. Based on the findings of studies using samples of Vietnam veterans (see Write, Carter and Cullen 2005), it is possible that military service may act as a negative turning point for emerging adults. In contrast, public sentiment supporting the conflict in the Middle East has cooled over time, but overall support for those in the military has remained fairly consistent, and they have yet to face the same level of vitriol from the public (e.g., protests against soldiers, refusal to hire veterans) that those who served in Vietnam experienced. As a result, modern veterans may not experience military service as a negative turning point. Future studies may seek to examine data gathered from those who have served in the most recent Middle East crisis. A detailed qualitative analysis using a sample of emerging adults would help clarify the role of military service as a turning point for modern cohorts.

Another limitation is that these data were limited to a sample of emerging adults in the United States. It is possible that social and cultural differences between nations may influence how turning points and social bonds operate cross nationally. Future studies may want to compare samples such as the Add Health cohort with those from European or African nations in order to study the influence of culture on both emerging adulthood and the role of age-graded transitions in reducing offending.

CONCLUSION

This study examined the criminogenic effects of emerging adulthood and provided empirical support for a new conceptual idea, the prolonged adolescent offender. Results supported many previous findings about factors that influence participation in criminal and delinquent behaviors and had implications for both criminological theory and criminal justice policy. In regards to theory, findings of this study support the notion that emerging adulthood may be an important component of offending in young people today, possibly altering the offending trajectories of low-level offenders past the traditional point of desistance. Studies are needed to explore the long-term effects that emerging adulthood has on offending.

The findings of this study have potential policy implications as well. Prolonged adolescent offenders commit crimes usually seen in adolescents, but unlike most adolescent offenders (e.g., Moffitt's AL's), they face adult prosecution and penalties. Early intervention and diversion programs such as drug courts could target those in emerging adulthood, so that they may avoid further criminogenic effects of incarceration and decrease extended costs to the criminal justice system. Policy makers may find it beneficial to recognize the unique age effects of emerging adulthood. Because many low-level, delinquent offenses traditionally seen in teenagers are now seen in emerging adults, policies may need to be adapted to the needs of cohorts that differ substantially from their predecessors. Instead of adopting purely punitive or reactive measures, greater emphasis may need to be placed on primary and secondary prevention strategies (Center for Disease Control and Prevention 2004).

Acknowledgement

Endnotes

[1] It should be noted that this study is a preliminary examination of the prolonged adolescent offender. As future waves of the Add Health Study are conducted and data released a retrospective approach may be employed to more accurately identify prolonged adolescent offenders and explore the long term influence of emerging adulthood on offending over the life course.

[2] Coefficient alpha is one of the most commonly used measures of reliability. Not only is it influenced by the average correlation among items (internal consistency), but also by the number of items in the scale (Nunnally, 1978). As a result, it may be difficult to obtain a high alpha, especially in longitudinal data where variables present at one wave may not be present at the next. Psychometricians (e.g., Cronbach, 1951; 1970) have warned of this limitation, but it is often overlooked (Welsh, 2001). Further, alpha coefficients in the .40-.50 range have generally been considered acceptable for etiological research (Thorndike, 1971).

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About the authors:

Christopher Salvatore is an assistant professor of Justice Studies in the Department of Justice Studies at Montclair State University. His research interests include developmental criminology, drug treatment, and public perceptions of the criminal justice system. Recent publications have appeared in the *American Journal of Public Health*, *Drug Court Review, the Security Journal, and Deviant Behavior.*

Travis Taniguchi is a Police Criminologist at the Redlands Police Department (Redlands, CA). His research interests include the spatial distribution of gangs and drug markets and advancing GIS methods for crime research. Recent publications have appeared in *Crime Patterns & Analysis, Justice Quarterly,* and the *Journal of Research in Crime and Delinquency*.

Wayne N. Welsh has conducted research that examines how criminal behavior is shaped by interactions between variables at multiple levels of analysis, including individuals, institutions, and communities. He is the author of several articles and books, including *Criminal Violence: Patterns, Causes and Prevention (3rd ed.)*, co-authored with Marc Riedel (Oxford University Press, 2010), and *Criminal Justice Policy and Planning* (3rd ed.), co-authored with Philip Harris (LexisNexis/Anderson, 2008).

Contact Information: Dr. Christopher Salvatore, Assistant Professor of Justice Studies, Montclair State University Department of Justice Studies, Dickson Hall, One Normal Avenue, Montclair, NJ 07043; Phone: 973-655-7515; email salvatorec@mail.montclair.edu

Dr. Travis Taniguchi, Senior Research Associate, Police Foundation, 1201 Connecticut Ave, NW Suite 200, Washington, DC 20036; (909)577-6972; email ttaniguchi@policefoundation.org

Dr. Wayne N. Welsh, Professor of Criminal Justice, Temple University, Gladfelter Hall, 5th floor, Temple University 1115 W. Berks Street, Philadelphia PA 19122; Phone: 215.204.6520; email: wwelsh@temple.edu