

Can they recover? An assessment of adult adjustment problems among males in the abstainer, recovery, life-course persistent, and adolescence-limited pathways followed up to age 56 in the Cambridge Study in Delinquent Development

WESLEY G. JENNINGS,^a MICHAEL ROCQUE,^b BRYANNA HAHN FOX,^a ALEX R. PIQUERO,^c AND DAVID P. FARRINGTON^d

^aUniversity of South Florida; ^bBates College; ^cUniversity of Texas at Dallas; and ^dUniversity of Cambridge

Abstract

Much research has examined Moffitt's developmental taxonomy, focusing almost exclusively on the distinction between life-course persistent and adolescence-limited offenders. Of interest, a handful of studies have identified a group of individuals whose early childhood years were marked by extensive antisocial behavior but who seemed to recover and desist (at least from severe offending) in adolescence and early adulthood. We use data from the Cambridge Study in Delinquent Development to examine the adult adjustment outcomes of different groups of offenders, including a recoveries group, in late middle adulthood, offering the most comprehensive investigation of this particular group to date. Findings indicate that abstainers comprise the largest group of males followed by adolescence-limited offenders, recoveries, and life-course persistent offenders. Furthermore, the results reveal that a host of adult adjustment problems measured at ages 32 and 48 in a number of life-course domains are differentially distributed across these four offender groups. In addition, the recoveries and life-course persistent offenders often show the greatest number of adult adjustment problems relative to the adolescence-limited offenders and abstainers.

With the ascent of the developmental/life-course paradigm in criminology (Farrington, 2003a), greater theoretical and empirical attention is being devoted to how crime and delinquency unfolds across the lifespan. Theoretical and methodological advances have spurred an increase in research on these topics, broadening our understanding of trajectories of crime over time. Research has examined an array of topics, including whether distinct groups of offenders can be identified and the predictive factors that may play a role in identifying the heterogeneous groups observed within the offending population. One of the most important theoretical perspectives has been the developmental taxonomy, proffered by Moffitt and colleagues (Moffitt, 1993, Moffitt & Caspi, 2001; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996; Moffitt, Caspi, Harrington, & Milne, 2002).

Moffitt argued that the prototypical "age-crime curve," which has been identified and examined in the literature for decades (see Hirschi & Gottfredson, 1993; Sweeten, Piquero, & Steinberg, 2013), does not characterize a general pattern of offending over the life course for the population at large. Rather, the age-crime curve actually reflects two (or more) dis-

tinct groups of individuals: those who begin to offend in adolescence and return to conformity in early adulthood, and those who, due to neuropsychological and personality deficits, act out early in childhood and subsequently are severely antisocial throughout life. Much work has been carried out examining Moffitt's taxonomy, which has resulted in both challenges and adjustments to the theory, including the number of distinct trajectories that can be empirically identified and predicted using her specific criteria (see Laub & Sampson, 2003; Moffitt, 2006).

One particular theoretical adjustment, with which we concern ourselves in the current study, arose during the course of Moffitt's own research using longitudinal data from the Dunedin Study in which she identified a set of individuals who did not seem to meet the criteria of membership in either the life-course persistent (LCP) or the adolescence-limited (AL) groups (Moffitt et al., 1996). These boys were similar to the LCP individuals in early childhood, but intriguingly, did not grow up to be severely delinquent in adolescence. Labeled as "recoveries," the offending patterns of this group tended to be somewhat short-lived. However, in a follow-up study, Moffitt et al. (2002) discovered that the recoveries had poor psychological profiles and many life problems.

The existence of this group of offenders has several theoretical and policy implications, yet persons characterized as recoveries have not been the subject of much empirical

Address correspondence and reprint requests to: Wesley G. Jennings, Department of Criminology, College of Behavioral & Community Sciences, SOC 309, University of South Florida, Tampa, FL 33620; E-mail: jenningswgj@usf.edu

work beyond Moffitt and colleagues' own research. In this regard, we focus on two specific research questions: Is there a group of individuals who begin life seemingly on track for an antisocial existence but somehow "make it out?"; and if so, what do they look like and how might they be identified? This study presents the first replication of Moffitt et al.'s (2002) work, identifying individuals resembling LCP, AL, and recoveries (as well as the youth who completely abstain from offending). Using data on a sample of British males from the Cambridge Study in Delinquent Development (CSDD) from childhood through late middle adulthood, we report on an examination of these four groups, including their offending and psychological profiles over the life course. Accordingly, our work offers one of the most comprehensive and long-term investigations of the recoveries group.

In the next section, we provide a brief overview of prior research on criminal careers and a more extensive discussion of the heterogeneity that has been identified in the offending population. This heterogeneity has helped to spur interest in developmental/life-course explanations that have been a prominent feature of theoretical criminology in the past 25 years.

Criminal Career Research and Theory

While criminology arguably became "adolescence-limited" in the mid-20th century, focusing as it did on cross-sectional studies of youth delinquency (Cullen, 2011), the history of the field has generally sought to examine offending over time. In the 20th century, while relatively rare, several longitudinal studies contributed to knowledge about the life-course development of crime (Glueck & Glueck, 1950; McCord, 1978; Robins, 1978; Tracy & Kempf-Leonard, 1996; Tracy, Wolfgang, & Figlio, 1990; Wolfgang, Figlio, & Sellin, 1972). These works examined why certain youth become involved in crime and delinquency, why some persist and why others do not.

Among the most important findings arising from these pioneering efforts were that not all youth who were from disadvantaged backgrounds and who had been delinquent grew up to be persistent criminals. The Gluecks' work focused on explaining this finding by appealing to what they called "maturational reform" (Glueck & Glueck, 1937; see also Rocque, 2014). Robins's (1966) longitudinal study of over 500 children with behavioral problems in St. Louis found that while there was considerable continuity in behavior (e.g., maladjusted adults nearly always had been maladjusted children), many maladjusted children were not troubled adults. In a later review of longitudinal studies, Robins (1978) made the now famous statement that "most highly antisocial children do not become highly antisocial adults" (p. 611, emphasis in the original). These findings have important implications for research and policy, as they may shed light on the process of desistance from crime.

Research on criminal careers, with a specific focus on initiation, prevalence, length of offending career, and desistance (cessation of crime), became a mainstay in the 1980s

(Blumstein, Cohen, Roth, & Visher, 1986; Piquero, Farrington, & Blumstein, 2003). In the now classic "criminal career debates," criminologists argued over the value of examining different types of crimes and various elements of the criminal career, such as when individuals begin to offend, how long they offend, and how much they offend. On one side of the debate, Gottfredson and Hirschi (1986, 1987) argued that the same factors can explain all of these elements; thus, they are unnecessary as unique foci of study. On the other side of the debate were those who argued that, in order to fully understand how crime unfolds over time, it is necessary to examine each facet of the criminal career, separately, and such questions about different influences were primarily empirical, not theoretical (see Blumstein et al., 1986; Farrington, 1992; Piquero, Farrington, & Blumstein, 2007). The debate is not a mere academic historical curiosity, because it has real implications for understanding and reducing criminal behavior.

Heterogeneity in Longitudinal Offending Patterns

The creation of offender typologies is certainly not a new development in criminology (see Gibbons, 1975). However, the growth of criminal career research spurred an interest in identifying and explaining why some offenders persist while others desist. Empirical studies had uncovered these disparate tracks in the early to mid-20th century. In the late 20th century, theoretical work sought to make sense of these findings. One early theory was developed by Gerald Patterson, who suggested that there were two primary tracks of delinquency: late onset and early onset offenders (Patterson, 1996; Patterson, DeBaryshe, & Ramsey, 1990; Patterson & Yoerger, 1993). The early onset track or trajectory, according to the theory, indicated a longer and more severe criminal career, while late onset offending was short-lived and restricted to the period of adolescence.

Perhaps the most well-known and empirically investigated developmental/life-course theory is Moffitt's (1993, 1997) taxonomy of LCP and AL offenders. She sought to show that the general age-crime curve that has been recognized for decades actually disguises two distinct groups of offenders. She labeled the "normative" group ALs. This group constitutes the majority of individuals, who are stable and healthy as children but during adolescence become caught in a maturity gap in which, biologically, they are adults but socially they are treated as juveniles. Thus, in a process of social mimicry (see Moynihan, 1968), these youth assert their independence by engaging in delinquent acts, such as smoking, drinking, and theft. Their delinquency can be quite serious but tends to dissipate upon adulthood. When social independence catches up to biological independence, delinquency and criminal behavior lose their appeal as other concerns become paramount, such as the search for a career and creation of a family. However, some youth become "ensnared" in criminal pathways due to the collateral consequences of their misdeeds (e.g., becoming pregnant or incarcerated).

The second group, representing perhaps 5% of the population, is composed of LCP offenders. These individuals suffer disadvantages early in life, often with what Moffitt terms “neuropsychological deficits” or cognitive and personality impairments, which themselves are exacerbated in distressed economic and familial environments that do not typically have the resources needed to help children overcome their early life deficits. These factors result in children with severe conduct disorder and antisocial behavior that escalates over time and tends to be more violent and severe during adolescence than with ALs. LCPs serve as the role models for ALs during adolescence. As the term implies, LCPs persist in antisocial behavior over time and comprise the right-hand tail of the age-crime curve, while ALs drop out into conformity as adulthood ensues and they are able to obtain all of the things that they had coveted as teenagers.

Much research has been conducted on Moffitt’s taxonomy, with some supporting as well as some conflicting findings. Research examining whether there are differences between adolescent onset and childhood onset tracks has tended to support the theory (see Moffitt & Caspi, 2001; Moffitt et al., 1996, 2002). However, work that has utilized group-based trajectory analyses has identified, at least empirically, distinct trajectories of offending, but they generally include more than two groups (see, e.g., Blokland, Nagin, & Nieuwebeerta, 2005; Ezell & Cohen, 2005; Laub & Sampson, 2003; White, Bates, & Buyske, 2001; see reviews in Jennings & Reingle, 2012; Piquero, 2008). Moffitt and colleagues’ own work has often identified more than two groups of offenders (Moffitt et al., 1996, 2002). Detailed overviews of research on the taxonomy may be found in Moffitt (2006) and Piquero and Moffitt (2005).

Two unique groups that have emerged in empirical research include youth who are abstinent from crime or delinquency, and those who appear on the life-course track in childhood but seem to “recover” over time. The first group, abstainers, represents a small number of individuals who are restrained either socially or interpersonally from normal development. These restrictions prevent the process of social mimicry, and thus these youth do not engage in typical delinquency. Research on this group has indicated that, while abstainers are removed from delinquent peers, they may not be as abnormal in terms of personality traits as the theory hypothesized (Barnes, Beaver, & Piquero, 2011; Chen & Adams, 2010; Piquero, Brezina, & Turner, 2005).

The fourth group has received far less attention in the literature. Not anticipated in the initial taxonomy, this group was termed “recoveries” by Moffitt et al. (1996, 2002), as youth who “had been extremely antisocial as children [but] did not meet our research criterion for extreme antisocial status as adolescents” (Moffitt et al., 1996, p. 408). The identification of this group was not expected by Moffitt et al., and thus was the subject of increased attention in subsequent analyses. Of importance, the number of persons characterized as recoveries was quite small, representing less than 6% of the total sample. As adolescents, these boys were still somewhat

antisocial, engaging in relatively normative delinquency. However, according to the taxonomy, childhood-onset problem behavior should be strongly related to the sort of persistent antisocial behavior that is characteristic of LCP offenders, and this did not appear to be the case. Moffitt et al. argued that their data “provided no insights” as to how the recoveries escaped LCP status (Moffitt et al., 1996, p. 419).

Moffitt et al. (2002) followed up the same Dunedin sample to further explore the preidentified groups to age 26. In this study, the researchers examined the four groups with respect to behavior and personality characteristics, such as depression and anxiety. At age 26, Moffitt et al. argued that the label of “recoveries” was a “misnomer” as this group experienced multiple adjustment problems in adulthood. Many had internalizing issues, and life troubles, as indicated by low-paying jobs and financial instability. Analyses of the recoveries showed that only about 15% of Dunedin’s 87 young boys with childhood-onset conduct problems truly “recovered,” escaping all adjustment problems. However, this group did engage in much less crime, particularly serious crime, than the AL or LCP groups.

Research on these recoveries is consistent with previous work on “false positives,” or children who would be predicted to engage in long-term, serious antisocial behavior. Robins’s (1966) study found that while a significant portion of youths who were antisocial or had psychiatric problems as children improved as adults, many of these replaced antisocial problems with other problems: “[t]he finding that more than a third of the sociopathic group have given up much of the antisocial behavior that brought them into contact with court martial boards, social agencies, the police, and the divorce courts, does not mean that at present they are strikingly well-adjusted and agreeable persons. Many of them report current interpersonal difficulties, irritability, hostility toward wives, neighbors, and organized religion” (p. 236). Nevertheless, “they are in many cases no longer either a threat to the life and property of others nor a financial drain on society” (Robins, 1966, p. 236, see also Moffitt et al., 2002, p. 197).

Aside from Moffitt’s work with the Dunedin data, there have been only a handful of other investigations of the offending patterns of a group of persons resembling recoveries. For example, in an analyses of data from the CSDD, Farrington, Gallagher, Morley, and St. Ledger (1988) examined youth from criminogenic backgrounds who, by age 32, did not grow up to be antisocial or criminal adults. These “vulnerable but resilient” youth were those who came from disadvantaged childhoods but did not engage in serious crime as adults. Again, these individuals represented a relatively small portion of the group (17 of 63). Similar to the findings from Robins and Moffitt et al., these individuals suffered significant adult adjustment problems. In a previous analysis, Farrington, Gallagher, Morley, St. Ledger, and West (1988) found that “unconvicted vulnerable boys were often the least successful in many aspects of their lives” (Farrington, Gallagher, Morley, & St. Ledger 1988, p. 123). However, in the follow-up, this group was rated as the most successful in life adjustment.

Current Study

In sum, research assessing the longitudinal variability in offending across a range of data sources has consistently identified distinct trajectories of persons who follow rather unique paths of offending that vary in shape and level over time. Within these heterogeneous patterns, one of the least-researched groups includes a small group of “recoveries,” who end up being, in the parlance of Moffitt’s developmental taxonomy, false positive LCP offenders. It is interesting that before Moffitt et al. identified such persons in her Dunedin data, Farrington, Gallagher, Morley, and St. Ledger (1988, p. 116) stated that “[s]urprisingly few researchers have addressed this issue.” In the handful of studies that exist on this topic, most have identified a small number of persons who would be characterized as LCP in childhood who do not engage in persistent antisocial behavior as adults. As well, these studies do report that these same persons tend to have a higher prevalence of noncrime problems in early adulthood suggesting that “prevention programs targeting antisocial children will not be wasted on the half who are not on course to become LCP offenders” (Moffitt et al., 2002, p. 197). More research is needed to explore outcomes of vulnerable but resilient youth to determine if poor adult outcomes are unavoidable or if true recoveries do exist. If so, research on the correlates of recoveries will contribute much to policy and theory related to life-course offending patterns.¹

Accordingly, this study presents a long-term investigation of the recovery group using longitudinal data from a large sample of males from South London followed into late middle adulthood. In this regard, our effort offers several advantages over previous investigations, including the manner in which we differentiate between distinct offending typologies; the larger array of adult outcomes that we examine in addition to offending, such as personality characteristics, psychopathology, as well as personal and economic life circumstances and problems; and the extent to which we are able to measure these outcomes in late middle adulthood (the longest window of time available for researchers to examine outcomes among recoveries).

Data and Methods

The CSDD is a prospective longitudinal study of the development of offending and antisocial behavior in a cohort of 411 boys born in 1953 (on average) in South London. These men have been interviewed since they were 8 years of age and up to age 48. Further, the men represented a complete population of boys who were 8 years of age at that time (1961–1962) and were attending one of six primary schools in a deprived area of South London. With regard to general demographic characteristics, the overwhelming majority of the males were White (97%) and were raised in two-parent working-class

households (West & Farrington, 1973). In addition, the males were also predominantly of British origin (Farrington, 1995). Findings from the CSDD have been well documented in the literature in over 200 publications and several books (see Farrington, 2003b; Farrington et al., 2006; Farrington, Coid, & West, 2009; Farrington, Piquero, & Jennings, 2013; Piquero et al., 2007).

Variables

CSDD offending and offending typologies. Official offending was measured from two different strands of conviction data. The first of these was used to estimate the males’ offending trajectories (see Piquero et al., 2007) when most of the males were approximately age 40.² In the second, conviction searches of the CSDD males’ criminal records for any offenses that may have occurred beyond age 40 and up until age 56 were performed, which were obtained in 2011 (Farrington et al., 2006, 2013). Relying on the conviction data from ages 10–18, we constructed typologies by following Moffitt et al.’s (2002) classification scheme in order to represent the four groups theoretically discussed and empirically analyzed in their study. Specifically, males who had no convictions up to age 18 were classified as *abstainers*. Comparatively, males who were convicted during late childhood/early adolescence (ages 10–12) and during middle to late adolescence but whose adolescent offending (ages 13–18) was not extreme (e.g., less than two convictions) were coded as *recoveries*, whereas those males who offended during late childhood/early adolescence (ages 10–12) and during middle to late adolescence and accumulated two or more adolescent convictions (ages 13–18) were categorized as *LCPs*. The males who were only convicted during middle to late adolescence (e.g., ages 13–18) and not in late childhood/early adolescence were coded as *ALs*.

Adult adjustment problems (adult outcomes). Consistent with Moffitt et al. (2002), we included and categorized the adult adjustment problems into six life-course domains: *official offending* (4 measures), *self-reported offending* (2 measures), *personality* (5 measures), *psychopathology* (6 measures), *personal life* (8 measures), and *economic life* (2 measures). Official offending is based on adult convictions that were dichotomized (yes/no) for each developmental period of the adult life course in order to (a) mirror Moffitt et al.’s adulthood conviction developmental period (e.g., ages 19–26), and (b) to measure the prevalence of conviction at three more developmental periods in adulthood (e.g., ages 27–36, 37–46, and 47–56) that have yet to have been examined in this fashion in the literature as it relates to Moffitt et al.’s (2002) typology of abstainers, recoveries, LCPs, and ALs. In addition, self-reported offending was measured at age 32 and age 48, and these two dichotomous measures include self-reported

1. We recognize that there is a larger literature on resiliency (Smith, Lizotte, Thornberry, & Krohn, 1995; Werner, 1989; Werner & Smith, 1992), but our primary interest in the current study is on Moffitt’s recoveries group.

2. The recorded age of offending is the age at which an offense was committed, not the age of conviction.

offending for the following crimes: burglary, theft of vehicle, theft from vehicle, shoplifting, theft from machines, theft from work, fraud, assault, drug use, and vandalism.

Personality traits were assessed using the Psychopathy Checklist: Screening Version (PCL-SV; Hart, Cox, & Hare, 1995). The PCL-SV was scored from information gathered between ages 18 and 48 years. The PCL-SV is a 12-item version of the Hare Psychopathy Checklist—Revised (Hare, 1991, 2003). Like the Hare Psychopathy Checklist—Revised, each item is scored on a 3-point scale (0 = *not present*, 1 = *possibly present*, 2 = *definitely present*), with a total score that can vary between 0 and 24. In this study, we use the PCL total score as well as each of the four PCL facets. Further information regarding the PCL in the CSDD may be found elsewhere (Farrington, 2005, 2006, 2007; Piquero et al., 2012). The psychopathology domain was measured by drinking problems (driven after drinking 10+ units, heavy drinking of 40+ units in a typical week, and/or binge drinking by drinking 13+ units in one evening), drug problems (smoked marijuana and/or used another drug), and/or mental health problems (anxiety/depression based on the General Health Questionnaire; see Goldberg, 1978) at ages 32 and/or 48.

Personal life adult adjustment problems were assessed as having a poor accommodation history (not a home owner, poor home conditions, and more than one to two addresses in the last 5 years), a poor cohabitation history (not living with female partner, not married/cohabiting in the last 5 years, divorced in the last 5 years, and not getting along well with female partner), being involved in fights, and perpetrating intimate partner violence in the last 5 years (slapping, shaking, throwing an object at, kicking/biting or hitting with a fist, hitting with an object, twisting arms, beating up [multiple blows], choking or strangling, and threatening with a knife or gun; Straus, 1990; see also Piquero, Farrington, Nagin, & Moffitt, 2010). All three of these personal life problems were measured at the age 32 and age 48 interviews, respectively. Finally, the domain of economic life adult adjustment problems was measured by having employment problems (not currently employed, low social class, low take home pay, and unemployed greater than 9 months in last 5 years). Again, these economic adult adjustment problems were measured at ages 32 and 48.³

Analytic strategy

The analysis proceeds in a series of stages. In the first stage, we present descriptive information on the prevalence of the four typologies that were initially identified and analyzed

3. An anonymous reviewer raised the very good point that some of the adult adjustment problems indicated in our measure could also be characterized as “life transitions” that could either promote or impede desistance (cf. Sampson & Laub, 1993). For example, experiencing (repeated) economic problems may work to delay desistance while having a good cohabitation history and not being involved in intimate partner violence may work to promote desistance. Future research should explore these and other problems and transitions further.

Table 1. CSDD male offending typology

	Abstainers	Recoveries	LCPs	ALs
CSDD males Moffitt et al. (2002)	73.4%	2.5%	1.5%	22.6%
Dunedin males	56.0% ^a	8.0%	10.0%	26.0%

Note: CSDD, Cambridge Study in Delinquent Development; LCP, life-course persistent offenders; AL, adolescence-limited offenders.

^aThis abstainer group combines those males who Moffitt et al. (2002) categorized “abstainers” (5% of males who had no antisocial behavior reported by age 18) and those they categorized as “unclassified” (51% of males whose antisocial behavior was approximately normative; Moffitt et al., 2002, p. 183).

by Moffitt et al. (2002; e.g., abstainers, recoveries, LCPs, and ALs) in their Dunedin data among the male participants in the CSDD. These CSDD prevalence estimates for the four groups are presented alongside the prevalence estimates of the four groups identified by Moffitt et al. (2002) based on their cohort of Dunedin males. The second stage of the analysis provides statistical comparisons for the four groups across the host of 27 outcomes distributed across the 6 life-course domains of official offending; self-reported offending; personality; psychopathology; personal life; and economic life. In the final stage of the analysis, the total numbers of adult adjustment problems are evaluated to determine how their frequency of occurrence may be differentially distributed across the abstainer, recovery, LCP, and AL pathways.

Results

Table 1 presents the prevalence of the four CSDD offending groups based on the categorization schema reported in Moffitt et al. (2002). Similar to Moffitt et al. (2002), the abstainer group (73.4%) represented the largest group among the CSDD males, and this group had no convictions before the age of 18.⁴ In addition, roughly equivalent percentages of ALs, or males whose adolescent criminal history was confined to between the ages of 13 and 18, were found in the CSDD (22.6%) compared to the Dunedin male cohort (26.0%). Compared with the Dunedin male cohort, a smaller proportion of the CSDD males were identified as recoveries (2.5% vs. 8.0%) and LCPs (1.5% vs. 10.0%), which could be due to several reasons, including the length of follow-up and the measure of offending.

Table 2 provides the statistical comparisons for the multitude of outcomes for the six domains of adult adjustment problems. As presented and graphically illustrated in Figure 1, the overwhelming majority of the abstainers are not convicted at any point in their adult lives up to age 56. In contrast, a

4. It is important to note that this particular Dunedin abstainer group referred to here combines those males who Moffitt et al. (2002) categorized abstainers (5% of males who had no antisocial behavior reported by age 18) and those they categorized as unclassified (51% of males whose antisocial behavior was approximately normative; Moffitt et al., 2002, p. 183).

Table 2. Comparisons of adult adjustment problems for CSDD males by offending typology

	Abstainers	Recoveries	LCPs	ALs
Official offending convictions				
Ages 19–26	11.7%	66.7%***	100.0%***	56.8%***
Ages 27–36	7.5%	22.2%*	33.3%*	38.4%***
Ages 37–46	6.5%	0.0%*	40.0%**	23.2%***
Ages 47–56	3.4%	11.1%	25.0%*	10.7%**
Self-reported offending				
Age 32	6.5%	11.1%	0.0%	29.6%***
Age 48	2.6%	0.0%	0.0%	5.1%
Personality				
PCL Facet 1	0.34	1.50*	1.50*	0.92***
PCL Facet 2	0.48	0.83	1.50	1.17***
PCL Facet 3	0.41	1.17	2.50	1.15***
PCL Facet 4	1.03	3.83***	4.50***	3.61***
PCL total	2.27	7.33*	10.00*	6.85***
Psychopathology				
Drinking problem at age 32	28.3%	55.6%*	80.0%**	66.7%***
Drinking problem at age 48	16.6%	25.0%	50.0%*	36.7%***
Drug problem at age 32	14.5%	33.3%†	40.0%†	34.6%**
Drug problem at age 48	14.0%	25.0%	33.3%†	27.8%
Mental health problem at age 32	22.1%	11.1%	16.7%	32.1%†
Mental health problem at age 48	16.3%	25.0%	33.3%	15.1%
Personal life				
Poor accommodation at age 32	30.1%	44.4%	16.7%	39.5%†
Poor accommodation at age 48	18.1%	37.5%†	33.3%	24.1%
Poor cohabitation at age 32	21.0%	22.2%	16.7%	33.3%*
Poor cohabitation at age 48	24.2%	0.0%	33.3%	25.3%
Fights at age 32	29.7%	55.6%*	40.0%	63.0%***
Fights at age 48	10.9%	37.5%**	16.7%	25.3%***
IPV at age 32	11.3%	44.4%**	16.7%	22.8%*
IPV at age 48	14.6%	60.0%**	33.3%	22.0%
Economic life				
Employment problems at age 32	20.0%	55.6%**	80.0%***	31.3%*
Employment problems at age 48	15.1%	25.0%	50.0%**	26.6%*

Note: CSDD, Cambridge Study in Delinquent Development; LCP, life-course persistent offenders; AL, adolescence-limited offenders; PCL, Psychopathy Checklist; IPV, intimate partner violence. Asterisks indicate that this particular group differs significantly from the abstainer group.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$. One-tailed test.

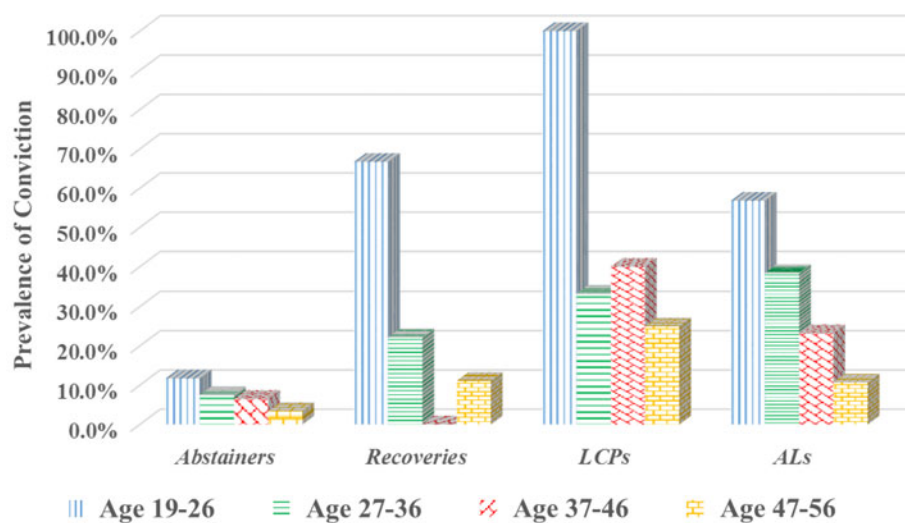


Figure 1. (Color online) Prevalence of conviction over ages 19–56 for Cambridge Study in Delinquent Development males by offending typology.

large proportion of the recoveries, all of the LCPs, and some of the ALs go on to be convicted at some point in their adult lives to varying degrees. ALs also are more likely to self-report offending in adulthood compared with the abstainers. Regarding personality traits, the recoveries, the LCPs, and the ALs had significantly higher PCL total scores, and scores for Facet 1 and Facet 4 in particular, when compared with the abstainers. Similarly, the many psychopathology problems (drinking, drug use, and mental health) are disproportionately concentrated among the recoveries, ALs, and considerably more concentrated in the LCPs, relative to the abstainers. In addition, all four groups experience personal life adult adjustment problems at various levels, although involvement in fights and perpetrating intimate partner violence seem to be noticeably characteristic of the recoveries. Finally, economic life (employment) problems are apparent among the recoveries and ALs relative to the abstainers, and the clear majority of LCPs show significant employment problems in adulthood.

The last stage of the analysis is graphically depicted in Figures 2 and 3. As can be seen, there is a general trend observed in the data that abstainers have the least number of adult adjustment problems and that the recoveries typically have a few adult adjustment problems. These trends can be observed at age 32 (Figure 2) but even more so at age 48 (Figure 3). Further, the LCPs and ALs are more evenly distributed across the number of observed adult adjustment problems at age 32, although there is a trend for the ALs to have fewer adult adjustment problems and for the LCPs to have four or more adult adjustment problems at age 48.

Discussion

The purpose of this study was to conduct a longitudinal analysis of Moffitt’s recoveries group into late middle adulthood. Our work with data from the CSDD through age 56 provided an additional 30 years of data above and beyond what had

been previously used to study recoveries (see Moffitt et al., 2002). Below, we summarize how each of the four offending groups in the CSDD compared to those observed in Moffitt et al.’s (2002) Dunedin sample, as well as the veracity of Moffitt et al.’s predictions on how individuals in the groups would fare across several life domains as they aged. A summary of the findings, described below, is presented in Table 3.

The abstainers

Abstainers were originally defined by Moffitt et al. as males with no delinquent or antisocial behavior (self-reported or official) between ages 5 and 18, ~5% of their Dunedin sample. However, because refraining from antisocial behavior in adolescence can be considered abnormal, a second group called “unclassified” offenders (the 51% of males who show some antisocial behavior, but minor enough to be more normative) are also included in the final abstainer category as described in the current study. In total, a little over half of the Dunedin sample were classified as abstainers, while 73% of the CSDD males in the present study fit the classification of the abstainer group.

Similar to findings from Moffitt et al.’s (2002) study, the abstainers in the Cambridge data showed the most successful and problem-free lives throughout the follow-up period. Even up to age 56, abstainers consistently decreased in the prevalence of both official and self-reported offending (from 12% to 3% and 7% to 3%, respectively), and other adult adjustment problems such as alcohol problems (28% to 16%), fighting (30% to 11%), accommodation problems (30% to 18%), and mental health problems (22% to 16%), as the abstainers aged. The abstainers showed no significant levels of psychopathy. The only adult adjustment issues that increased over time among abstainers were the prevalence of cohabitation issues (21% to 24%) and intimate partner violence (11%

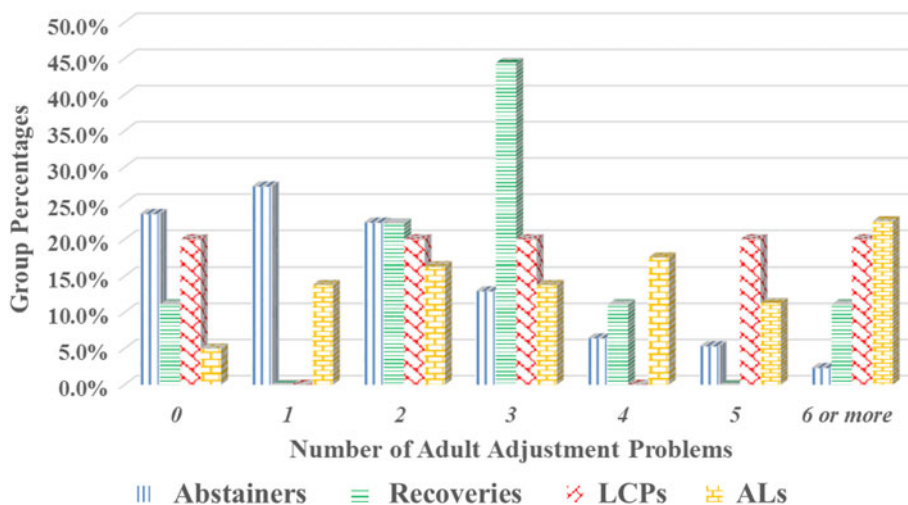


Figure 2. (Color online) Number of adult adjustment problems among Cambridge Study in Delinquent Development males at age 32 by offending typology.

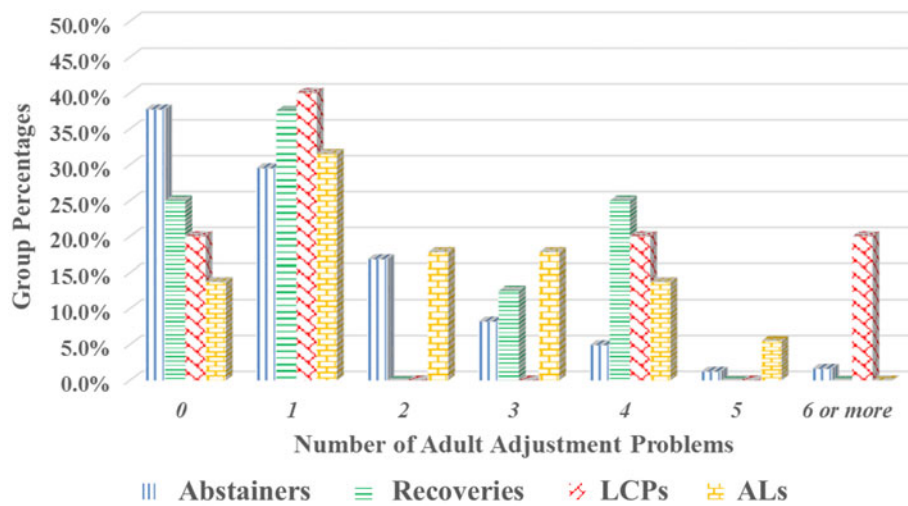


Figure 3. (Color online) Number of adult adjustment problems among Cambridge Study in Delinquent Development males at age 48 by offending typology.

Table 3. Summary of findings for CSDD males by offending typology

	Abstainers	Recoveries	LCPs	ALs
Prevalence	73%	2.5%	1.5%	23%
Official offending	Lowest at all ages; decreased over time	Higher than Abstainers at most ages but decreases over time (with a slight increase at ages 47–56)	Highest at all ages; does not decrease monotonically with age	Higher than abstainers at all ages (50% at age 32); decrease with age, but not sharply (38.4% convicted at ages 27–36)
Self-reported offending	Lower than recoveries and ALs; decreased over time	Decreases over time; not significantly different than abstainers	None reported, indicating lying	Higher than abstainers at age 32 but not age 48; decreases with age
Personality adjustment problems	Low PCL scores; each facet significantly lower than ALs	Higher PCL scores than abstainers in interpersonal, affective, and antisocial facets	Highest reported PCL scores; affective and antisocial facets highest within group	Higher PCL scores than abstainers
Psychopathology adjustment problems	Generally lowest prevalence at all ages	More drinking problems and slightly more drug problems than abstainers at age 32; decrease with age except for mental health problems	Higher prevalence than abstainers for drinking and drug problems at all ages; substance problems higher than all other groups	Lower prevalence of problems at most ages than LCPs but generally higher than other groups; highest mental health problem at age 32 of any group
Personal life adjustment problems	Generally lower than other groups and decline over time; cohabitation problems increased	Generally higher than abstainers; highest accommodation history problems and fights at age 32 and 48 across groups	Accommodation, cohabitation, and IPV increased from age 32 to 48; not significantly different than Abstainers at any age though	Highest involvement in fights of all groups; high mental health problems; poor cohabitation history at age 32 (higher than LCPs)
Economic life adjustment problems	Lowest among groups; declined over time	Higher than abstainers at age 32; decrease with age	Highest across groups and ages	Higher than abstainers at each age

Note: CSDD, Cambridge Study in Delinquent Development; LCP, life-course persistent offenders; AL, adolescence-limited offenders; PCL, Psychopathy Checklist; IPV, intimate partner violence.

to 15%). Still, abstainers in our study had the fewest overall number of adult adjustment problems across their entire life course when compared to the remaining three, more criminogenic, groups. In short, the pattern of long-term life-course issues among the Cambridge abstainers, already low to begin with, appear to further decline as the abstainers grow older, as predicted by Moffitt et al. (2002).

The recoveries

The recovery group in Moffitt et al.'s (2002) study originally consisted of males who experienced stable, pervasive, and extreme antisocial problems in childhood, but recovered in adolescence to only evince moderate criminal behavior not significant enough to meet the LCP criteria. This group was initially a surprise to developmental/life-course theorists, because Moffitt's original (1993) taxonomy predicted that a complete recovery among persistent and early onset offenders would be extremely rare. While 8% of males in the Dunedin cohort fit the recovery description, Moffitt et al.'s (2002) analysis showed that more than a quarter of the recoveries were convicted of crimes by age 26, and 10% had been arrested for violent offenses. Consequently, it was expected that the recovery group, which showed a drop-off in offending during adolescence but an increase by their late 20s, would resemble Nagin, Farrington, and Moffitt's (1995) description of "low-level chronic offenders" as time went on (Moffitt et al., 2002). To date, no other study has evaluated the veracity of this hypothesis by assessing the offending patterns and adjustment issues of the recovery group beyond age 26.

In the present study 2.5% of the Cambridge males qualified as recoveries, as they initially showed stable and pervasive delinquency during childhood, but reduced their level of offending as they aged. Between ages 19 and 26, two out of three recoveries had convictions on their records, 22% of these offenders had official convictions between ages 27 and 36, and none of those in the recovery group had an official conviction between ages 37 and 46. Similarly, approximately 11% of recoveries admitted to criminal activity at age 32, while again none of the recoveries self-reported criminal behavior at age 48. Because no follow-up of recoveries beyond age 26 has ever been conducted, there is no analogous group available to compare the present results beyond age 26. Future comparative work is needed.

Despite the dramatic decrease in official and self-reported offending among the recoveries beyond age 26, suggesting that a rare "complete recovery" may have occurred, an interesting finding emerged as 11% of the CSDD recovery males began offending again between ages 47 and 56, according to official records. These results mirror the sudden uptick in offending seen by recoveries in Moffitt et al.'s (2002) sample, albeit nearly 30 years later in the lives of the recoveries.

With respect to future negative life outcomes, recoveries were expected to suffer from several internalized forms of psychopathology to explain the group's social isolation from their offending counterparts, such as depression, anxi-

ety, and neuroticism, as well as outcomes resulting from these pathologies, including social withdrawal, low-paying jobs, accommodation problems, and more (Farrington, Gallagher, Morley, & St. Ledger, 1988; Moffitt et al., 2002). As expected, recoveries in the Dunedin sample experienced numerous life impairments such as agoraphobia and social phobia, mental illness, difficulties making friends, and none had married (Moffitt et al., 2002). It appears, then, that the recoveries, who were unlikely to be involved with drugs, alcohol, crime, and other relative social activities, were actually "protected" by their social isolation (Moffitt et al., 2002).

Similar results emerged in our analysis in the nearly 40-year follow-up of the recoveries in the Cambridge data. At age 32, when the rate of offending among recoveries was low, 44% had a poor accommodation history, 22% had a poor cohabitation history, and more than half had employment problems. In comparison, at age 48, the proportion of recoveries exhibiting a poor accommodation history decreased to 38%, those with a poor cohabitation history decreased to 0%, and about one quarter experienced employment problems. Of interest, the recoveries showed the highest proportion of individuals experiencing poor accommodation histories at ages 32 and 48. In addition, levels of psychopathy among the CSDD recoveries were also significantly increased in the hypothesized PCL facets (affective and antisocial) suggesting that this group shows strong and pervasive personality problems with respect to emotional and social issues.

However, unlike findings from both Farrington, Gallagher, Morley, and St. Ledger (1988) and Moffitt et al. (2002), the group of recoveries in the Cambridge sample experienced fewer drinking and drug problems at age 48. The recoveries were actually found to have higher levels of mental illness and intimate violence at age 48 when they were concurrently increasing their criminal participation, even though mental illness and violence was expected to be lower when the recoveries were "in remission" from crime. The recoveries had the most fights of any group at age 48, and the highest rates of intimate partner violence at both ages 32 and 48. Therefore, it appears that even the current sample of recoveries, which completely desisted from criminal behavior between ages 37 and 46, do not truly recover from their offending and long-term negative life consequences.

The LCPs

LCPs are similar to the recoveries in that they show stable, pervasive, and extreme antisocial behavior in childhood, but unlike the recovery group, the LCP's rate of criminal behavior does not significantly decline in adolescence. Approximately 10% of the Dunedin sample of males were LCPs, compared to only 1.5% of males in the Cambridge data. According to Moffitt's taxonomy and subsequent research, LCPs experience neurological and biological abnormalities that result in high levels of ongoing psychopathologies, criminality, and other adjustment issues throughout adulthood.

The results of the present study corroborate Moffitt's hypotheses regarding the criminal behavior, psychopathologies, and life problems exhibited by LCPs. In this regard, official criminal records were found for all of the Cambridge LCPs between ages 19 and 26, 40% of the LCPs between ages 37 and 46, and 25% of the LCPs were still offending according to official records as late as ages 47 to 56. Not a single LCP offender admitted to offending at age 32 or age 48, suggesting an inclination toward deception and pathological lying as predicted by Moffitt's taxonomy. The average total psychopathy score on the PCL-SV was highest among the LCPs, with the affective and antisocial psychopathy subcomponents being the most significant issues among the offenders.

The LCPs also showed evidence of other psychopathologies in adulthood, as half reported having a drinking problem, a third had drug addictions, and a third had mental health problems at age 48. It should also be noted that the LCPs had more drinking, drug, and employment problems at ages 32 and 48, when compared to the remaining three offending groups. Similarly, the personal lives of LCPs significantly worsened during the follow-up period as predicted by Moffitt, as a third of the LCPs had a poor accommodation history, a third had a poor cohabitation history, a third committed intimate partner violence, and half experienced employment problems at age 48. These findings align with Moffitt's prediction that LCP males tend to have substance-dependence problems, get into conflicts at work, possess extreme personality traits such as callousness and negative emotionality, try to control women, and lack the ability to form healthy social bonds that may serve to protect them from criminality and negative outcomes throughout the life course (see Piquero, Farrington, et al., 2010).

Overall, the LCPs in the Cambridge data reflect those seen in Moffitt et al.'s (2002) study, because both samples of LCPs had two to three times more convictions at the latest time period when compared to the ALs and the recoveries, and had consistent and pervasive negative life outcomes relating to drugs, alcohol, employment, and psychopathology. These findings provide empirical support for Moffitt's taxonomy.

The ALs

Originally, the AL offending group was defined as males who showed little or no antisocial behavior in childhood, but began to commit a high level of criminal behavior in adolescence and generally desisted from offending in their middle to late 20s. It was theorized that the ALs commit crime partly as a social activity during the more rebellious teenage years, and not because of innate psychopathologies that will persist throughout the life course. Therefore, the level of criminal behavior and adjustment issues beyond the ALs' late 20s were originally predicted to be very low, as the ALs have the skills to reintegrate into society in adulthood and live a relatively crime-free and problem-free life.

In the Cambridge data, 23% fit the criteria for ALs by age 18, aligning closely with the 26% of AL males in the Dunedin

Study (Moffitt et al., 2002). In line with Moffitt's taxonomy, more than 50% of the ALs in the current sample had official records between ages 19 and 26. However, the sharp drop in criminal behavior among the ALs in adulthood did not occur as anticipated. As seen in Moffitt et al.'s (2002) sample, a significant proportion of the ALs in the Cambridge data had official convictions beyond adolescence (in this case, almost 40% of the AL males were convicted of a crime between ages 27 and 36, 23% had convictions between ages 37 and 46, and most surprising, approximately 11% of the ALs were still committing crimes and incurring official convictions into their late 50s). In one respect, then, these persons may not really be considered ALs.⁵ While Moffitt et al.'s (2002) study illustrated the unexpected continuation of the ALs' offending into early adulthood, our study is among the first to track the pattern of AL criminal behavior into late middle age, raising the possibility that the AL offending may not be limited solely to adolescence (see also Nagin et al., 1995).

Unexpected as well was the number of psychopathologies and negative life outcomes that a high proportion of ALs experienced in adulthood. The psychopathy scores of the ALs were significantly higher than those of the abstainers. Pervasive irregularities with interpersonal issues and behavior were shown in other areas of the ALs' adult lives as well, as the ALs had the highest proportion of individuals involved in fights, experiencing mental health problems, and displaying a poor cohabitation history at age 32, even when compared to the LCPs. The ALs also showed a consistently high level of other significant issues beyond adolescence, including drinking problems, drug addictions, intimate partner violence, and employment problems at ages 32 and 48.

In short, it appears that some of the ALs may have been inaccurately expected to only confine their criminal behavior to the adolescent years when offending is a social activity used to close the "maturity gap." While the conviction records of the ALs in the Cambridge sample were not as extensive as the conviction records of the LCPs, it is clear that some of the ALs' criminal and negative life problems extend far beyond what was originally theorized. In this vein, a follow-up of the ALs to age 56 in the current study illustrated the many poor and unexpected outcomes experienced by a number of individuals in this group, as well as the noticeable proportion of ALs who offended well beyond adolescence. Similar findings were uncovered by Moffitt et al.'s (2002) follow-up of the ALs to age 26 in the Dunedin Study, although it was suggested that AL was still an appropriate title for the group because adolescence is the apex of the group's offending. Further, while many ALs desist in adulthood, those who encounter life "snares" may find themselves on a trajectory similar to the LCPs through adulthood even though they

5. Although Moffitt originally identified "recoveries," she (2006) has since noted that this may have been a misnomer and that the so-called recoveries, who often went on to have low-level chronic problems throughout their lives, may better be termed "low-level chronics."

may have started off very differently. In other words, given a significant follow-up period to allow the life-course offending patterns of the AL and LCP offenders to fully unfold, many ALs desist as expected, while others appear to be on a “trajectory toward equifinality with the LCP men’s very poor outcomes . . . proving (Moffitt’s) theory wrong” (Moffitt et al., 2002, p. 201). Additional research is needed to further evaluate the variability in behavior and outcomes among AL offenders throughout the life course.

Conclusion

Taken together, the results from the current study provide some support for Moffitt’s expectations while at the same time raising several directions for further inquiry. For example, the best prediction of later life outcomes emerged for the abstainer group as the overwhelming majority of individuals in this group live crime free and adult adjustment problem free lives. In contrast, yet consistent with Moffitt et al. (2002), the group categorized as recoveries based on their childhood and adolescent offending are by and large not generally true recoveries once the follow-up is extended beyond age 26 up to age 56 and multiple life-course domains of adult adjustment problems are considered. In addition, while the LCPs do remain criminally active and typically display elevated levels of adult adjustment problems (in type and number) up through late middle age, there remains a sizeable percentage of ALs who remain criminally active and exhibit adult adjustment problems as well. It is therefore important for future research to continue this line of inquiry to further unpack the nature and etiology of why some individuals’ adult offending and life outcomes more closely align with the expectations of their offending typology group membership and others do not. Attention to other issues that we were unable to examine, such as recoveries across race and gender, as well as other life-course domains and outcomes in adulthood, are also important to consider in the future. In addition, larger samples may help to increase the proportion of LCPs and recoveries identified in order to carry out more fine-grained analyses.

In addition, because our focus was on Moffitt’s (1993) developmental taxonomy in general (and the recovery group in particular) we did not explicitly make any direct linkages to other developmental/life-course theories. Nevertheless, it would be interesting for future research to explore the extent to which there may be a recovery group among the early onset type of offenders as described within the context of Patterson

and Yoerger’s (1993) early onset model (see also Patterson & Yoerger, 1997, 2002). Continued research in this vein and beyond is encouraged to further flesh out the nature of offending and associated life-course experiences and outcomes among recoveries as well as the applicability of this offender group for other developmental/life-course theories. Finally, because our original intent was to provide a near exact replication to the fullest extent possible of Moffitt et al.’s (2002) initial empirical test of the recovery group, we adopted and relied on their classification scheme in order to construct the abstainer, recoveries, LCP, and AL offender groups. We are certainly aware of and appreciate alternative methodologies and strategies to construct offender groups, particularly semiparametric group-based trajectory models (Jennings & Reingle, 2012; Nagin, 2005; Piquero, 2008), and to relate these identified groups to later life outcomes (Piquero, Farrington, et al., 2010). Future research should consider employing group-based trajectory models in an effort to identify recoveries and assess the degree to which our (and Moffitt et al.’s, 2002) results and classification scheme align with those produced from group-based trajectory models.

It is also important to highlight some areas where prevention and intervention may be relevant stemming from the results of the current study. For example, the evidence suggests that some (initially) high-rate offenders can recover from their antisocial ways, and efforts to promote such change from offending should be considered. In this regard, prior research has shown that there are several promising prevention (and especially) intervention efforts that can help avert initial offending and/or thwart continued offending pathways, including cognitive behavioral therapy (Landenberger & Lipsey, 2005), life-skills training (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2005), and self-control modification programs (Piquero, Jennings, & Farrington, 2010). In addition, Piquero, Farrington, Welsh, Tremblay, and Jennings (2009) have also demonstrated the utility of nurse home visitation and family parent training programs for reducing conduct problems, delinquency, and a host of later life adverse outcomes. Ultimately, policy and programming would benefit from investing in early prevention and intervention programs such as these that provide the “best bang for the buck” (Cohen, Piquero, & Jennings, 2010) and have implications for promoting desistance or “recovery” among those children who exhibit early onset problem behavior.

References

- Barnes, J. C., Beaver, K. M., & Piquero, A. R. (2011). A test of Moffitt’s hypotheses of delinquency abstinence. *Criminal Justice and Behavior*, 38, 690–709.
- Blokland, A. A., Nagin, D., & Nieuwebeerta, P. (2005). Life span offending trajectories of a Dutch conviction cohort. *Criminology*, 43, 919–954.
- Blumstein, A., Cohen, J., Roth, J. A., & Visher, C. (Eds.). (1986). *Criminal careers and “career criminals”* (Vol. 2). Washington, DC: National Academies Press.
- Chen, X., & Adams, M. (2010). Are teen delinquency abstainers social introverts? A test of Moffitt’s theory. *Journal of Research in Crime and Delinquency*, 47, 439–468.
- Cohen, M. A., Piquero, A. R., & Jennings, W. G. (2010). Estimating the costs of bad outcomes for at-risk youth and the benefits of early childhood interventions to reduce them. *Criminal Justice Policy Review*, 21, 391–434.
- Cullen, F. T. (2011). Beyond adolescence-limited criminology: Choosing our future—The American Society of Criminology 2010 Sutherland Address. *Criminology*, 49, 287–330.

- Ezell, M. E., & Cohen, L. E. (2005). *Desisting from crime: Continuity and change in long-term crime patterns of serious chronic offenders*. New York: Oxford University Press.
- Farrington, D. P. (1992). Criminal career research in the United Kingdom. *British Journal of Criminology*, 32, 521–536.
- Farrington, D. P. (1995). The development of offending and antisocial behaviour from childhood: Key findings from the Cambridge Study in Delinquent Development. *Journal of Child Psychology and Psychiatry*, 36, 929–964.
- Farrington, D. P. (2003a). Developmental and life-course criminology: Key theoretical and empirical issues—The 2002 Sutherland Award Address. *Criminology*, 41, 221–256.
- Farrington, D. P. (2003b). Key results from the first 40 years of the Cambridge Study in Delinquent Development. In T. P. Thornberry & M. D. Krohn (Eds.), *Taking stock of delinquency: An overview of findings from contemporary longitudinal studies* (pp. 137–183). New York: Kluwer/Plenum Press.
- Farrington, D. P. (2005). The importance of child and adolescent psychopathy. *Journal of Abnormal Child Psychology*, 33, 489–497.
- Farrington, D. P. (2006). Family background and psychopathy. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 229–250). New York: Guilford Press.
- Farrington, D. P. (2007). Social origins of psychopathy. In A. Felthous & H. Sass (Eds.), *The international handbook of psychopathic disorders and the law* (pp. 319–334). Hoboken, NJ: Wiley.
- Farrington, D. P., Coid, J. W., Harnett, L., Jolliffe, D., Soteriou, N., Turner, R., et al. (2006). *Criminal careers up to age 50 and life success up to age 48: New findings from the Cambridge Study in Delinquent Development* (Research Study 299). London: Home Office.
- Farrington, D. P., Coid, J. W., & West, D. J. (2009). The development of offending from age 8 to age 50: Recent results from the Cambridge Study in Delinquent Development. *Monatsschrift für Kriminologie und Strafrechtsreform (Journal of Criminology and Penal Reform)*, 92, 160–173.
- Farrington, D. P., Gallagher, B., Morley, L., & St. Ledger, R. J. (1988). Are there any successful men from criminogenic backgrounds? *Psychiatry: Interpersonal and Biological Processes*, 51, 116–130.
- Farrington, D. P., Gallagher, B., Morley, L., St. Ledger, R. J., & West, D. J. (1988). A 24-year-old follow-up of men from vulnerable backgrounds. In R. L. Jenkins & W. K. Brown (Eds.), *The abandonment of delinquent behaviour* (pp. 155–173). New York: Praeger.
- Farrington, D. P., Piquero, A. R., & Jennings, W. G. (2013). *Offending from childhood to late middle age: Recent results from the Cambridge Study in Delinquent Development*. New York: Springer.
- Gibbons, D. C. (1975). Offender typologies—Two decades later. *British Journal of Criminology*, 15, 140–156.
- Glueck, S., & Glueck, E. (1937). *Later criminal careers*. New York: Commonwealth Fund.
- Glueck, S., & Glueck, E. (1950). *Unraveling juvenile delinquency*. New York: Commonwealth Fund.
- Goldberg, D. (1978). *Manual of the General Health Questionnaire*. Windsor: NFER-Nelson.
- Gottfredson, M. R., & Hirschi, T. (1986). The true value of lambda would appear to be zero: An essay on career criminals, criminal careers, selective incapacitation, cohort studies, and related topics. *Criminology*, 24, 213–234.
- Gottfredson, M. R., & Hirschi, T. (1987). The methodological adequacy of longitudinal research on crime. *Criminology*, 25, 581–614.
- Hart, S. D., Cox, D. N., & Hare, R. D. (1995). *The Hare Psychopathy Checklist: Screening version*. Toronto: Multi-Health Systems.
- Hare, R. D. (1991). *The Hare Psychopathy Checklist—Revised (PCL-R)*. Toronto: Multi-Health Systems.
- Hare, R. D. (2003). *Manual for the Revised Psychopathy Checklist* (2nd ed.). Toronto: Multi-Health Systems.
- Hawkins, J. D., Kosterman, R., Catalano, R. F., Hill, K. G., & Abbott, R. D. (2005). Promoting positive adult functioning through social development intervention in childhood: Long-term effects from the Seattle Social Development Project. *Archives of Pediatrics and Adolescent Medicine*, 159, 25–31.
- Hirschi, T., & Gottfredson, M. R. (1983). Age and the explanation of crime. *American Journal of Sociology*, 89, 552–584.
- Jennings, W. G., & Reingle, J. (2012). On the number and shape of developmental/life-course violence, aggression, and delinquency trajectories: A state-of-the-art review. *Journal of Criminal Justice*, 40, 472–489.
- Landenberger, N. A., & Lipsey, M. (2005). The positive effects of cognitive-behavioral programs for offenders: A meta-analysis of factors associated with effective treatment. *Journal of Experimental Criminology*, 1, 451–476.
- Laub, J. H., & Sampson, R. J. (2003). *Shared beginnings, divergent lives: Delinquent boys to age 70*. Cambridge, MA: Harvard University Press.
- McCord, J. (1978). A thirty-year follow-up of treatment effects. *American Psychologist*, 33, 284–289.
- Moffitt, T. E. (1993). Adolescence-limited and life-course persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, 100, 674–701.
- Moffitt, T. E. (1997). Adolescence-limited and life-course persistent offending: A complementary pair of developmental theories. In T. Thornberry (Ed.), *Developmental theories of crime and delinquency* (pp. 11–54). New Brunswick, NJ: Transaction Publishers.
- Moffitt, T. E. (2006). Life-course persistent versus adolescence-limited antisocial behavior. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 3. Risk, disorder, and adaptation* (pp. 570–598). Hoboken, NJ: Wiley.
- Moffitt, T. E., & Caspi, A. (2001). Childhood predictors differentiate life-course persistent and adolescence-limited antisocial pathways among males and females. *Development and Psychopathology*, 13, 355–375.
- Moffitt, T. E., Caspi, A., Dickson, N., Silva, P., & Stanton, W. (1996). Childhood-onset versus adolescent-onset antisocial conduct problems in males: Natural history from ages 3 to 18 years. *Development and Psychopathology*, 8, 399–424.
- Moffitt, T. E., Caspi, A., Harrington, H., & Milne, B. J. (2002). Males on the life-course persistent and adolescence-limited antisocial pathways: Follow-up at age 26 years. *Development and Psychopathology*, 14, 179–207.
- Moynihan, M. (1968). Social mimicry: Character convergence versus character displacement. *Evolution*, 22, 315–331.
- Nagin, D. S. (2005). *Group-based modeling of development*. Cambridge, MA: Harvard University Press.
- Nagin, D. S., Farrington, D. P., & Moffitt, T. E. (1995). Life-course trajectories of different types of offenders. *Criminology*, 33, 111–140.
- Patterson, G. R. (1996). Some characteristics of a developmental theory for early-onset delinquency. In M. F. Lenzenweger (Ed.), *Frontiers of developmental psychopathology* (pp. 81–124). New York: Oxford University Press.
- Patterson, G. R., DeBaryshe, B., & Ramsey, E. (1990). A developmental perspective on antisocial behavior. *American Psychologist*, 44, 329–335.
- Patterson, G. R., & Yoerger, K. (1993). Developmental models for delinquent behavior. In S. Hodgins (Ed.), *Mental disorder and crime* (pp. 140–172). Newbury Park, CA: Sage.
- Patterson, G. R., & Yoerger, K. (1997). A developmental model for late-onset delinquency. In D. W. Osgood (Ed.), *Motivation and delinquency* (pp. 119–177). Lincoln, NE: University of Nebraska Press.
- Patterson, G. R., & Yoerger, K. (2002). A developmental model for early- and late-onset antisocial behavior. In J. B. Reid, J. Snyder, & G. R. Patterson (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. 147–172). Washington, DC: American Psychological Association.
- Piquero, A. R. (2008). Taking stock of developmental trajectories of criminal activity over the life course. In A. Liberman (Ed.), *The long view of crime: A synthesis of longitudinal research* (pp. 23–78). New York: Springer.
- Piquero, A. R., Brezina, T., & Turner, M. G. (2005). Testing Moffitt's account of delinquency abstinence. *Journal of Research in Crime and Delinquency*, 42, 27–54.
- Piquero, A. R., Farrington, D. P., & Blumstein, A. (2003). The criminal career paradigm. In M. Tonry (Ed.), *Crime and justice: A review of research* (Vol. 30, pp. 359–506). Chicago: University of Chicago Press.
- Piquero, A. R., Farrington, D. P., & Blumstein, A. (2007). *Key issues in criminal career research: New analyses of the Cambridge Study in Delinquent Development*. Cambridge: Cambridge University Press.
- Piquero, A. R., Farrington, D. P., Fontaine, N., Vincent, G., Coid, J., & Ullrich, S. (2012). Childhood risk, offending trajectories and psychopathy at age 48 years in the Cambridge Study in Delinquent Development. *Psychology, Public Policy, and Law*, 18, 577–598.
- Piquero, A. R., Farrington, D. P., Nagin, D. S., & Moffitt, T. E. (2010). Trajectories of offending and their relation to life failure in late middle age: Findings from the Cambridge Study in Delinquent Development. *Journal of Research in Crime & Delinquency*, 47, 151–173.

- Piquero, A. R., Farrington, D. P., Welsh, B. C., Tremblay, R., & Jennings, W. G. (2009). Effects of early family/parent training programs on antisocial behavior and delinquency. *Journal of Experimental Criminology*, *5*, 83–120.
- Piquero, A. R., Jennings, W. G., & Farrington, D. P. (2010). On the malleability of self-control: Theoretical and policy implications regarding a general theory of crime. *Justice Quarterly*, *27*, 803–834.
- Piquero, A. R., & Moffitt, T. E. (2005). Explaining the facts of crime: How the developmental taxonomy replies to Farrington's invitation. In D. P. Farrington (Ed.), *Integrated developmental & life-course theories of offending: Advances in criminological theory* (pp. 51–72). New Brunswick, NJ: Transaction.
- Robins, L. S. (1966). *Deviant children grown up*. Baltimore, MD: Williams & Wilkins.
- Robins, L. N. (1978). Sturdy childhood predictors of adult antisocial behavior: Replications from longitudinal studies. *Psychological Medicine*, *8*, 611–622.
- Rocque, M. (2014). The lost concept: The (re)emerging link between maturation and desistance from crime. *Criminology and Criminal Justice*. Advance online publication.
- Sampson, R. J., & Laub, J. H. (1993). *Crime in the making: Pathways and turning points through life*. Cambridge, MA: Harvard University Press.
- Smith, C., Lizotte, A. J., Thornberry, T. P., & Krohn, M. D. (1995). Resilient youth: Identifying factors that prevent high-risk youth from engaging in delinquency and drug use. *Current Perspectives on Aging and the Life Course*, *4*, 217–247.
- Straus, M. A. (1990). The Conflict Tactics Scales and its critics: An evaluation and new data on validity and reliability. In M. A. Straus & R. J. Gelles (Eds.), *Physical violence in American families: Risk factors and adaptations to violence in 8,145 families* (pp. 49–73). New Brunswick, NJ: Transaction.
- Sweeten, G., Piquero, A. R., & Steinberg, L. (2013). Age and the explanation of crime revisited. *Journal of Youth and Adolescence*, *42*, 921–938.
- Tracy, P. E., & Kempf-Leonard, K. (1996). *Continuity and discontinuity in criminal careers*. New York: Plenum Press.
- Tracy, P. E., Wolfgang, M. E., & Figlio, R. M. (1990). *Delinquency in two birth cohorts*. New York: Plenum Press.
- Werner, E. E. (1989). *Vulnerable, but invincible*. New York: Adams, Bannister, and Cox.
- Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High-risk children from birth to adulthood*. Ithaca, NY: Cornell University Press.
- West, D. J., & Farrington, D. P. (1973). *Who becomes delinquent?* London: Heinemann.
- White, H. R., Bates, M. E., & Buyske, S. (2001). Adolescence-limited versus persistent delinquency: Extending Moffitt's hypothesis into adulthood. *Journal of Abnormal Psychology*, *110*, 600–609.
- Wolfgang, M. E., Figlio, R. M., & Sellin, T. (1972) *Delinquency in a birth cohort*. Chicago: University of Chicago Press.