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Life Course Criminology

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ARJAN A. J. BLOKLAND AND
PAUL NIEUWBEERTA

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3.1 Introduction

Why do children from the same neighborhood, or even from the same family, grow up to be so different? And why do people who show similar patterns of offending sometimes come from radically different backgrounds? Why is it that adult offenders often have juvenile records, but that most juveniles arrested do not grow up to be criminal adults? And what can we do to prevent delinquent adolescents from embarking on an adult life of crime? Whom should we best target for imprisonment? And how can we best prevent ex-prisoners from returning to a life of crime? Questions like these are at the heart of life course criminology, a blooming branch of criminology that has gained momentum over the last 20 years.

Endorsing a developmental perspective, Loeber and LeBlanc [1990] define what they call developmental criminology as the study of temporal, within-individual, changes in offending. Developmental criminology, they argue, is the study, first, of the development and dynamics of problem behaviors and offending with age, and second, of the explanatory or causal factors that predate, or co-occur with, behavioral development and have an impact on its course. Similarly, Farrington [2003] describes developmental and life course criminology to be concerned with documenting and explaining developments in offending throughout the individual's life. Developmental and life course criminology does so by focusing on three main issues: the development of offending and antisocial behavior, risk factors at different ages, and the effects of life events on the course of development. Others talk of life course criminology as studying "changes in delinquency and crime that are related to age in an orderly way" [Thornberry, 1997], "the evolution of crime over the life course" [Smith, 2002], or "real events, happening in real time and in real people's lives" [Blokland and Nieuwbeerta, 2006]. In their most recent book, Laub and Sampson [2003] strikingly summarize life course criminology as the effort of "making sense of lives."

The recurring theme in these definitions—and what sets life course criminology apart from mainstream criminological thinking—is life course criminology's special focus on *within-individual developments in offending over time*. Life course criminology occupies three main research questions, aspiring to

1. *Describe* developments in individual criminal behavior over time,
2. *Explain* why these developments take place, and finally, if possible to
3. Describe and test the consequences of interventions, aiming to *redirect* these developments in ways perceived as beneficial and lead the individual away from crime.

With its focus on individual development, life course criminology poses a challenge to both criminological theory and the customary way

of performing criminological research. Traditionally, criminologists have mostly been concerned with studying *between-group* differences in crime and had made comparisons between groups of individuals at one point in time [LeBlanc and Loeber, 1998]. Life course criminology, on the other hand, concentrates on *within-individual* developments in crime over time and recognizes that the causal factors influencing development may shift as the individual progresses along his or her behavioral pathway. This, in turn, asks for the temporal ordering of events and of the causal processes leading up to these events to be made explicit. Theories that attempt to more fully address these developmental and life course aspects of criminal behavior have been advanced only in the last 20 years [Thornberry, 1997; Farrington, 2005].*

To be able to study individual behavioral development across the entire life span, life course criminology also needed to exceed the limits of the available criminal data and find innovative ways to analyze this new information. The 1980s and 1990s witnessed a surge of new longitudinal studies, while previously initiated studies increasingly yielded data covering ever-larger parts of the life span [Thornberry and Krohn, 2003]. Together, fresh theories and newly tapped data sources acted as catalysts for new and increasingly sophisticated statistical analyses that could address the novel questions prompted. Given its broad scope and its capacity to enrapture theorists and empiricists alike, the life course approach has the potential to provide a suitable metatheoretical framework that can be used to integrate different theories explaining different aspects of crime and join existing empirical literatures on different topics that until now have been building up unconnectedly.

The remainder of this chapter is organized as follows. First, we consider the roots from which life course criminology has blossomed over the past two decades. Next, we explicate important elements of the life course approach and assess their repercussions in recent criminological theories. We then briefly review the available data and methods of analysis that have been used to study crime over the life course. In the second part of the chapter we review the empirical evidence describing the course of criminal trajectories as well as factors that have been proffered to help explain them. We also address the effects and problems associated with efforts to redirect criminal pathways, especially imprisonment. We conclude with a critical reflection of the current state of affairs in life course criminology and point to possible directions to allocate further research effort.

* Still, adopting a life course stance does not mean that one has to discard of all theoretical ideas that "classical" or—perhaps more aptly phrased—non–life course criminological thinking has yielded. As Farrington (2005) notes, once we start to realize that many of the circumstances traditionally studied to explain group differences in crime not only differ between individuals but also vary within individual lives, these ideas can be, and have already been, successfully adapted to fit the life course perspective.

3.2 The Roots of Life Course Criminology

As with many ideas in science, tracing the exact origins of the life course approach to crime proves difficult. Many texts mention the first of Wolfgang's Philadelphia birth cohort studies, published in 1972 [Wolfgang, Figlio, and Sellin, 1972]. This study analyzed delinquent development up to age 17 in a sample of nearly 10,000 boys born in Philadelphia in 1945. Their finding, that more than half of the cohort's delinquency could be attributed to only a small proportion of the boys—6 % of the cohort, 18% of the delinquents in the cohort—sparked the interest of both researchers and politicians in efforts to try to prospectively identify this highly active delinquent subgroup and subject its members to policies aimed at redirecting their delinquent development by either rehabilitation or incarceration.

Others take as the point of departure the 1986 report of the Panel of Research on Criminal Careers, organized by the National Academy of Sciences [Blumstein et al., 1986]. One of the major tasks of the panel was to assess the extent to which future criminal development could be predicted and to speak about the possible contribution of such predictions to policies of general and selective incapacitation. The panel's two-volume report provided many of the basic tools and much of the vocabulary needed to analyze longitudinal data on criminal behavior.

Yet while the Blumstein report and even the Wolfgang study are important hallmarks in the life history of criminology [Laub, 2004], a number of longitudinal studies predate them, most notably the work of Sheldon Glueck and Eleanor Glueck [1950]. The Gluecks studied the delinquent development up to age 32 of 500 boys remanded to Massachusetts reform schools during adolescence.* Their work has recently been brought back into the limelight, when John Laub and Robert Sampson unearthed the raw data of the Gluecks' study, digitized all information, and reanalyzed it using modern statistical methods [Laub and Sampson, 1988]. Interest in the lives of offenders goes even further back. Others may, for example, want to point out the life history approach taken by the Chicago School. There, Robert Park, a former newspaper reporter, sent his students out of the lecture rooms into the streets of a city in turmoil to document people's own stories. Many of the qualitative studies that were conducted by students of the University of Chicago's sociology department, like C. Shaw's [1930] *The Jack-Roller* and E. Sutherland's [1937] *The Professional Thief*, have now reached the status of criminological classics. Despite differences in methodology, what these studies share is an interest in the processes and dynamics of within-individual change in criminal behavior.†

* The Gluecks performed multiple longitudinal studies, including a 15-year followup of 1,000 juvenile delinquents referred to Judge Baker Clinic and a 15-year followup of 510 reformatory inmates.

† Adolphe Quetelet and other scholars had already studied the age-crime curve in the nineteenth century, but on aggregated data.

3.3 Pillars of Life Course Criminology

Farrington [2003] encapsulates the foundations of what he calls developmental and life course criminology (or DLC for short) in four 'pillars": (1) the criminal career paradigm, (2) the risk factor prevention paradigm, (3) developmental criminology, and (4) life course criminology. The *criminal career paradigm*, as articulated in the report of the Panel of Research on Criminal Careers, though largely atheoretical and policy oriented, has left a permanent mark on the longitudinal study of delinquency and crime. A criminal career is defined as the longitudinal sequence of crimes committed by an individual offender [Blumstein et al., 1986:12]. Major contribution of the criminal career researchers was to break up the aggregate crime rate in several dimensions each to be studied separately. The first of these dimensions is participation, which relates to whether one becomes an offender or not; a second important dimension is that of frequency, which refers to the number of crimes committed by participating offenders over a given period of time (usually referred to by the Greek letter lambda or λ). The key assumption of the career paradigm is that these criminal career dimensions maybe influenced by different variables to different degrees [Blumstein and Cohen, 1987]. Other criminal career dimensions include duration, the time between first and last offense; and seriousness or crime-type mix, which refers to the nature of crimes committed while active. The driving force behind the criminal career paradigm were questions regarding policy and especially—though not exclusively—questions concerning the potential benefits of (selective) incapacitation [Blumstein, Cohen, and Farrington, 1988]. For estimating the effect of an increase in sentence length, for example, it is relevant to know whether individual offending frequency is stable or declines over time and what the expected residual career length is of the offender eligible for incapacitation. As such, the criminal career paradigm not only provided a range of conceptual tools to describe criminal development over time but also directly linked scientific research to policy outcomes. In line with its focus on official sanctions, criminal career research is mostly based on arrest or conviction data.

The second of Farrington's pillars is the *risk factor prevention paradigm*. The risk factor approach originally stems from medical research that aims to identify the variables that predict an increased probability of such various health outcomes as cardiovascular disease or cancer. Applied to delinquency and crime, the risk factor paradigm aims to identify factors that increase probability of later offending [Loeber and Farrington, 1998]. When Wolfgang, Figlio, and Sellin's [1972] finding that a small group of very active offenders was responsible for the majority of crime was replicated in other studies, researchers set out to find the risk factors that characterized this group of highly active and chronic offenders [Farrington, 2000]. Despite its name, the

risk factor paradigm also focuses on protective factors, that is, on factors that decrease the likelihood of offending (and which may not always be merely the opposite end of a risk factor scale) [Loeber and Farrington, 1998; Rutter, 1985]. While many of the variables used to try to predict offending were taken from classical criminological theories, like the criminal career paradigm the risk factor approach does not entail efforts to systematically combine the various risk factors found in empirical studies in a comprising theory of delinquent development. Consequentially, risk factor research's primary focus is not on establishing causality and explanations (e.g., parental disharmony may be a risk factor because disruptive interfamilial processes cause delinquency in children, as well as because delinquency-prone children themselves are a major source of dissonance within the family) but predominantly on merely finding correlations [Farrington, 2000].

Developmental criminology, the third pillar of DLC, entails the study of the development and dynamics of antisocial behavior and delinquency as correlated with age and tries to identify the causal factors that influence the course that development [Loeber and LeBlanc, 1990]. Elaborating on the criminal career paradigm, developmental criminology quantifies a number of dynamic concepts capturing change and stability over time, distinguishing activation (the initiation and stimulation of offending), aggravation (the increasing seriousness of offending), and desistance (the winding down of offending) as distinct processes in the course of offending [LeBlanc and Loeber, 1998]. Compared to both the criminal career paradigm and the risk factor approach, developmental criminology is more theoretically driven. Influenced by developmental psychology, developmental criminologists have proposed stage models, wherein different types of offending follow a relative orderly sequence [e.g., Loeber and Hay, 1994]. Also, as in developmental psychology, the age period under scrutiny in developmental criminology mostly spans from birth to young adulthood. Given that from a developmental point of view the minimum age of legal responsibility is an arbitrary marker, developmental criminologists mostly rely on self- or third-party reports on the level and type of delinquent involvement. Furthermore, its focus on children and adolescents has lead developmental criminology to also include among its dependent variables nondelinquent problem behaviors like bullying, truancy, or lying. Taken as a whole, developmental criminology aims to provide new insights about the etiology and precursors of offending that are of relevance to prevention and intervention programs aimed at terminating or diverting an individual's future criminal development [Farrington, 2002].

The fourth DLC pillar is *life course criminology*. At first glance, life course criminology differs most conspicuously from developmental criminology in that life course criminology focuses mainly on criminal development in adult offenders. Instead of focusing on parenting styles or delinquent peers, life course criminological research deals with the effects of such life events as

work and marriage. However, behind these superficial differences are more fundamental theoretical discrepancies. First, the life course view holds that change is not limited to some "sensitive period" during early life but occurs throughout the entire life span. As a result, life course criminologists go through great efforts to follow their subjects far into adulthood. Laub and Sampson [2003], for instance, traced the original boys from the 1930 Glueck study, who by then had reached the age of 70, and ended up interviewing 52 of them. Second, life course criminology opposes to the lawlike notion of individual development—like the idea of developmental stages—that is present in much of developmental criminology [e.g., Loeber, Keenan, and Zhang, 1997]. Life course criminology, in turn, emphasizes variability and change in individual development that cannot be explained by preexisting differences between individuals. Within the life course paradigm one's criminal career is just one of many pathways one can embark on, be it one that has the potential to strongly affect development in many others. Recognizing the interdependence of developmental pathways in different life domains, researchers understand that hitches in other pathways may bring about radical changes in the individual's criminal career.

To these four pillars may be added a fifth, namely, that of *life history narratives*. Life history narratives reveal criminal development from "the inside out," because they offer personal accounts of the many processes that developmental and life course theories presume underlie patterns of criminal behavior over time. Following in the footsteps of the Chicago School pioneers, a number of researchers have opted for a qualitative take on development and have documented detailed life histories from a wide range of different offenders [e.g., Klockars, 1978; Shover, 1996; Steffensmeier and Ulmer, 2005]. While some of these studies only cover a demarcated period, others have had the opportunity to let offenders reflect on practically their entire life span. Life histories let offenders reflect on their lives in their own words. This approach not only encompasses the many different pathways a person embarks on but also lets offenders themselves speak on the interdependency of these pathways both within and between individuals. Furthermore, qualitative research, particularly among adolescents, may reveal aspects of social timing that dictate important transitions in their worlds and may even detect developmental stages that go unnoticed by merely using quantitative data. Finally, life history narratives may offer more detailed accounts of key criminal career characteristics like escalation or desistance.

3.4 Life Course Criminology Themes

Within life course criminology, the term *life course* refers to the wide array of age-graded trajectories people engage in during their lives, like work careers

AQ1 and family pathways [Elder, 1985]. Embedded in these trajectories are transitions, like becoming unemployed or having a child, that change the individual's current conditions and future options. Trajectories and their transitions are interdependent in that development or transitions in one trajectory influence the context and future progress in other trajectories. While emphasizing variability and change and rejecting lawlike notions of development, the life course approach does not picture individuals as unguided missiles bursting through time. On the contrary, the life course approach recognizes that individual development is shaped by different levels of a person's social context [Elder, 1995]. However, like possible sequences on a combination lock, each new level adds complexity, increasing the number of possible combinations, ultimately resulting in the uniqueness of individual life courses. In an effort to understand individual development, the life course approach entertains four major themes [Elder, 1994, 1998]: location in time and place, timing of lives, linked lives, and human agency.

The first theme is that of *location in time and place*. Each historical period, each geographical place, is unique, bringing with it its own options and constraints; individual lives are bound to reflect these differences. For example, unlike Dutch children born later, those born in 1945 and early 1946 experienced exposure to prenatal famine because of the "Hunger Winter"—the period between September 1944 and May 1945, in which the German occupier blocked food supplies in retaliation for a railway strike to aid the Allied war effort. The severity of these conditions the children suffered depended heavily on their geographical location, with those in the urban areas in the Netherlands's midwest suffering the most. Results from the Dutch Hunger Winter Families Study have shown that severe nutritional deficiency in the first or second trimester of pregnancy is associated with increased risk of developing antisocial personality disorder by age 18 [Neugebauer, Hoek, and Susser, 1999].

A second theme is the notion of the *timing of lives*. Understanding the timing of lives is important, since critical life events may have very different consequences depending on when in the individual's life course they take place. Sometimes a delicate touch is required: findings from the just-mentioned Dutch Hunger Winter Families Study showed that nutritional deprivation in the third trimester, as opposed to the second or first, did not elevate the odds of developing antisocial personality disorder. The notion of the timing of lives is also directly linked to that of location in time and place. Expectations based on age regarding the incidence, duration, and sequence of behaviors and social roles tend to vary between historical eras and geographical location [Neugarten and Datan, 1973]. For instance, because of steep increases in the age of entering marriage and parenthood and the lengthening of higher education, young people in the United States and other industrialized countries

have been claimed to go through a new developmental phase dubbed "emerging adulthood," which neither simply extends adolescence because it is freer of parental control, nor can br viewed as early adulthood, since most young people have not begun to make the transitions traditionally associated with adulthood [Arnett, 2004]. In turn, this prolonged period of exploration may AQ2 partly explain why even individuals with nonproblematic childhoods are found to postpone desistance and remain criminally active until later ages [Moffitt et al., 2002].

The third theme, of *linked lives*, draws attention to people's social embeddedness. Development does not take place in social isolation: individual action has consequences for others, and the actions of others relate back to the individual. The family is an obvious example of a social institution that connects the lives of many people over many generations, linking partners to each other, partners to in-laws, parents to children, children to siblings, and grandparents to grandchildren. The strength of these ties is again dependent on age as well as developments in other life domains. Research by Meeuws, Branje, and Overbeek [2004], for example, found that AQ3 the importance of parental support in curbing delinquency decreased as adolescents acquired a stable romantic partner. At the same time, however, with age, parental support became increasingly important for those adolescents and young adults who never had a romantic partner, suggesting a reaffirmation of the parent-child relationship as prospects of other relationships diminished.

Fourth and finally, *human agency* recognizes that individuals are capable of continuously making choices that can influence the course of their development. People do not float rudderless across life's sea, victim to the macrosociological currents. Instead, the life course perspective sees people as actively constructing their own development, given the historical constraints and opportunities available to them. The idea of human agency goes beyond mere selection—the notion that people actively seek out environments that fit their qualities—in that agency itself is variable and is influenced by environmental factors. The importance of agency is illustrated by the narratives of offenders in the Liverpool Desistance Study. Maruna [2001] compared the self-narratives of 30 desisting and 20 persisting offenders matched as closely as possible on age, gender, family background, and criminal histories. He found that persistent offenders were more likely to subscribe to a "pawn" story of self; feeling that life outcomes were largely dependent on circumstance and change events and lacking a language of agency or self-initiative. Desisters, on the other hand, actively made efforts to regain what they saw as their true self and often referred to the desisting process as willfully "going against the grain" [see also Laub and Sampson, 2003:55].

3.5 Life Course Criminology Theories

Over the years various explanations—typically based on classic criminological theories—have been offered to account for important aspects of individual criminal development. Many of these explanations, however, had somewhat of a post hoc character, and often uncomplicatedly generalized results from aggregated, cross-sectional data to individual, longitudinal behavioral patterns. Over the past decades, though, there has been substantial progress in life course criminological theory. Scholars have formulated their theories more explicitly and integrated several developmental issues into a common theoretical framework. For an overview of some of the influential life course criminological theories, we refer to recent systematic reviews by Farrington [2005, 2006]. For the sake of brevity here we suffice with discussing what are without doubt the three most influential and most often cited reviews: Sampson and Laub's age-graded social control theory, Moffit's dual taxonomy, and Gottfredson and Hirshi's self-control theory. Besides being influential, these theories also conveniently illustrate the different ways the various life course themes have found their way in to criminological theory.

3.5.1 Sampson and Laub's Age-graded Social Control Theory

Main theorists in life course criminology have been Robert Sampson and John Laub. In numerous articles and two influential books, Sampson and Laub report the empirical results of their 60-year followup of 500 ex-reform school pupils first studied by the Gluecks and disclose their age-graded theory of informal social control. The basic argument of their theory is that criminal involvement results from a lack of informal social controls and that what constitute appropriate sources of social control varies throughout life [Sampson and Laub, 1993; Laub and Sampson, 2003]. Important transitions in other life course domains yield changes in the level of informal control and can therefore act as *turning points* for crime [Sampson and Laub, 1993; Laub and Sampson, 2001]. Although Sampson and Laub do recognize that individuals may select themselves in certain transitions, the researchers claim that many of these transitions are to a large extent "chance" events, occurring or not occurring independently of the individual's characteristics [Laub and Sampson, 2003:45]. The theory views both desistance and persistence in crime as outcomes of the same general causal process. While increasing ties to conventional society aid desistance from crime, criminal behavior itself may deteriorate already weak ties or cut off opportunities for conventional development, resulting in even lower levels of social control and making future crimes even more likely. Sampson and Laub [1995] refer to this downward spiral—offending, weakened ties, more offending—as *cumulative continuity of disadvantage.*

3.5.2 Moffit's Dual Taxonomy

Similar ideas resonate in Moffitt's account of limited offending in adolescence, which comprises one-half of her dual taxonomy [Moffitt, 1993]. In her longitudinal investigation of a representative cohort of 1,037 New Zealand children born in the early 1970s, Moffitt found that while most boys had no notable history of antisocial behavior before age 11, 93% reported some form of delinquent activity by age 18. Moffitt's theory explains this "tidal wave" of adolescent-onset delinquency as the product of the adolescent's desire for mature status and a modern social structure unequipped to provide this status at an early age. Whereas traditionally biological and social age tended to coincide, modernization has pushed the age of biological maturation down and that of social maturation up, resulting in what Moffitt [1994] refers to as the *maturity gap*. For want of something better, delinquent behavior becomes a release for the need for personal autonomy, defying the moral authority of the preceding generation and at the same time providing adult tokens like money and consumer goods. However, with age, legitimate adult social roles increasingly become available to these youths, and reinforcement contingencies for delinquent behavior begin to shift. Not burdened by the outcomes of a compromised childhood, adolescence-limited offenders progressively become more committed to conventional pathways, which consecutively leads them to discontinue their delinquent lifestyle.

Adolescence-limited offenders, however, constitute just one part of Moffitt's dual taxonomy. The other, far less ubiquitous taxon she proposes is formed by life course persistent offenders, hypothesized to comprise about 5% of all offending adolescents [Moffitt, 1993]. Other theories make a similar distinctions [e.g., Patterson and Yoerger, 1993; Lahey and Waldman, 2005; Thornberry and Krohn, 2005]. According to the Moffitt taxonomy, life course persistent offenders are best seen as products of neuropsychological dysfunctions, combined with failed childhood socialization, culminating in antisocial behavioral patterns increasingly resistant to change and likely to persist throughout life. Life course persisters' underlying constellation also influences major transitions in the life course domain other than crime and opportunities for change are often transformed in opportunities for continuity: military service provides a chance to learn to handle weapons, a new job provides new opportunities to steal, and a fresh marriage provides a new victim for spousal assault [Moffitt, 1997]. Life course persisters' individual characteristics are thus believed to cut through all causal domains, rendering contextual change unimportant in their behavioral development. AQ4

As such, Sampson and Laub's age-graded theory and Moffitt's theory of adolescence limited offending both underwrite core elements of the life course approach. First, both argue that development is context dependent. Second, they stress the interdependency of the many different trajectories that make up the life course and the importance of transitions within these

trajectories in constituting potential turning points for behavior. Especially Moffitt's adolescence limited theory is also closely linked to a particular location in time and place. In her view, the mismatch between biological and social maturation and the delinquent patterns that result from it, are by-products of modernization and therefore only characteristic for the twentieth-century Western world. The theory of adolescence limited offending also incorporates the notion of timing of lives. Part of why delinquent behavior is increasingly costly is because with age it is increasingly perceived as "off-timed," that is, as part of the wild oats that already had to have been sowed.

3.5.3 Gottfredson and Hirshi's Self-Control Theory

The (re)introduction of the life course approach in criminology in general that has been taking place over the last 20 years and the work of Sampson and Laub and Moffitt, in particular, has not gone uncontested. In fact, it has evolved against the backdrop of theorists arguing that personal characteristics draw so heavily on individuals' choice-making abilities, that they drive them to choose social contexts to match these characteristics. These theories argue that if personal characteristics underlie behavioral outcomes as well as choice of social context, attributing causal power to contextual factors in shaping behavioral development would be fallacious. Representatives of this ontogenetic view are Gottfredson and Hirschi [1993], who not only argue that this line of reasoning is valid for a small minority of adolescent offenders but also maintain that it is applicable to the entire population.

In Gottfredson and Hirschi's view, criminal development is inversely linked to a person's level of self-control. Self-control also shapes individuals' agency in such a way that individuals tend to select themselves into environments that match their self-control levels, rendering the causal relationship between certain social contexts and crime spurious [Hirschi and Gottfredson, 1995]. Gottfredson and Hirschi [1983, 1993] go on to argue that individual development mirrors the shape of the aggregate age-crime relationship, which they claim to be similar across individuals, places, and historical times. They further state that no variable other than age can offer an explanation for the way criminal involvement waxes and wanes. In the eyes of these scholars, the invariability of the age-crime curve in turn releases criminologists from the need to do longitudinal research, rendering Gottfredson and Hirschi important antagonists of the life course perspective on crime both theoretically and methodologically [Gottfredson and Hirschi, 1986, 1987].

3.5.4 Summary of Theoretical Discussion

Although differences in opinion continue to exist on what, for example, counts as persisting in crime and whether or not persistent offenders constitute a

separate group that can be meaningfully distinguished at an early stage, in hindsight much of the dust raised around the life course perspective seems to have whirled around whether the proverbial glass was either half full or half empty. Most life course criminologists acknowledge the influence of stable individual characteristics on development and have sought ways to incorporate such differences in their theoretical and empirical work. Similarly, many adversaries still consent to the notion that some exogenous influences are involved in development.

If anything, the counterpressure of Gottfredson and Hirschi and others has inspired life course criminologists to refine their research questions and improve their methods of investigation in their continuous effort to make even better sense of lives. Aiming to adequately describe and explain development in criminal behavior over time, longitudinal data have now become the hallmark of life course criminology.

3.6 Life Course Criminological Data

Much of the empirical foundation underlying "classical" criminological theory comes from cross-sectional studies, which by definition examine many different individuals at one point in time. Although these studies have yielded important insights on the correlates of delinquency and crime, cross-sectional studies are less suited to speak on developmental issues. For instance, many cross-sectional studies are based on offender samples drawn from such databases as police records or prison populations. Reports on why and how these people started their criminal careers are therefore exclusively retrospective and possibly biased because the offenders arepresently involved in crime. In sampling only active offenders, these cross-sectional studies are also unable to reveal why people may desist from crime. Finally, since all information is gathered at one point in time, the causal nature of the associations revealed remains opaque [Menard, 2002]. AQ8

Liberman [2008] readily highlights the importance of a longitudinal approach by stating that when planning interventions, what we really want to know is whether we are capable of making changes to the constellation of risk factors an individual is exposed to. Will this *same* individual behave any differently than before? This is a question that can best be answered by following the same individual over time. More generally put, cross-sectional studies have a hard time establishing precise temporal order; consequently, causal inferences from such studies need to be interpreted with due caution. While different types of longitudinal studies continue to be initiated, the pith of empirical life course criminology seems to move from *cohort studies*, through *panel studies*, to *multiactor studies*.

Cohort studies, like the Philadelphia study previously mentioned, do follow the same respondents over time. Respondents in cohort studies either share some characteristic, for example, their year and place of birth (birth cohorts), or have simultaneously experienced a life event, for example, a stay in a juvenile justice institution (event cohorts). Numerous cohort studies have been undertaken in the United States and elsewhere [e.g., Nevares, Wolfgang, and Tracy, 1990; Tracy, Wolfgang, and Figlio, 1990; Kyvsgaard, 2003; Blokland and Nieuwbeerta, 2005]. While especially birth cohort studies have tended to be large scale, their focus has been mainly on the late childhood to early adulthood period. In addition, most cohort studies are based only on official data. As a consequence, although these studies have fewer problems in establishing temporal order, their data typically harbor a small number of explanatory variables, especially when conducted in the United States. Although some European countries' official registers yield data on a much larger number of life course domains, such good indicators of important causal mechanisms as family practices, job satisfaction, and marital quality remain absent. Finally, cohort studies have trouble in separating age from period effects: any behavioral trend observed in a single cohort could result either from the effects of age or from historical events specific to years or periods, regardless of age [Gottfredson and Hirschi, 1987].

Fed by detailed descriptions of the various dimensions of the criminal career, their interrelations, and the way such dimensions develop over the lives of individuals, criminologists increasingly became developmentally orientated and began to produce theories that explicitly incorporated time in their explanations. To satisfactorily test these new theories, data on variables tapping into the causal mechanisms that were being put forward were necessary. This was the kind of longitudinal data the typical cohort study did not provide. To overcome these shortcomings, individual-level *panel studies* started to emerge, following subjects over time with repeated measures gathered at regular intervals. Besides self-reports on antisocial behavior and crime, panel studies usually require their subjects to convey a variety of individual and contextual characteristics, the precise nature of which depends on the theoretical framework under scrutiny. Among the panel studies that have helped shape contemporary life course criminology are the Cambridge Study in Delinquent Development; the Pittsburgh, Denver, and Rochester Youth Studies; and the Dunedin Multidisciplinary Health and Human Development Study [for more complete overviews, see Piquero, Farrington, and Blumstein, 2003; Thorberry and Krohn, 2003]. For panel studies to be able to speak on the timing of lives and the mechanisms underlying behavioral change, the frequency of measurement must be reasonable dense. If causal lags between variables are small, large temporal lags in measurement waves would still make variables appear to occur simultaneously. In efforts to isolate age, period, and cohort effects, innovative, accelerated panel designs, including multiple, partly overlapping cohorts, have been initiated [Menard, 2002].

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While panel studies gather rich data, sometimes using multiple informants, they tend to view individual development in relative isolation. That is, while panel studies involve information on the individual's social context, including family and friends, they typically do not link developmental pathways of different individuals. *Multiactor studies* do just that, thereby paying homage to the life course idea of linked lives. The Cambridge Study in Delinquent Development, for example, was augmented with data on the criminal histories of both the parents and children of the 411 boys originally sampled, thus linking criminal development of family members across three generations [Farrington, Coid, and Murray, 2008]. Similarly, starting out as a cohort AQ9
study, the Criminal Career and Life Course Study now includes information on the criminal careers of those convicted in 1977 and also on the criminal careers of all their lifetime marriage partners and their children [Van der Rakt, Nieuwbeerta, and De Graaf, 2008]. Gathering longitudinal data on individuals tied by social relationships helps to more fully appreciate the way individual development is embedded in social relationships that form and dissolve across the life span.

3.7 Longitudinal Methods: Taking Observed Heterogeneity into Account

With more and more longitudinal data becoming available, life course–oriented criminologists began to look for adequate ways of analyzing this information. Within the context of life course criminology's aims, stated in the introduction of this chapter—describing, explaining, and redirecting developments in criminal behavior over the life course—we discuss some of these methodological developments.

3.7.1 Describing Developments over the Course of a Person's Life

One of the major aims of life course criminology is to adequately describe the development of criminal behavior over the life span. The simplest way of visualizing such development is to plot the behavior of interest—for example, the frequency or severity of delinquency and crime—against age. This can be done for the entire sample under scrutiny or for subgroups defined by such personal characteristics as sex and ethnicity.

For growth processes concerning which it seems reasonable to assume that individuals develop in a more or less typical fashion, plotting the average developmental pathway may be well suited. However, when individual variation in development is expected, as is the case with criminal development, more complicated methods are needed that do justice to the complexities of the data gathered. That is why criminologists have turned to multilevel growth curve models or simply growth models [Bryk and Raudenbush, 1992].

These models allow for individual variation in the rate and shape of the developmental pathway and are able link variation in these growth parameters to individual characteristics. Still, these models assume average trends and express developmental variation in terms of variance around the average growth within the population. Theorist like Moffitt and Patterson, for example, state specifically that there are different types of offenders showing qualitatively distinct developmental pathways and that the average age-crime curve is an amalgam of very differently shaped developmental pathways. When it comes to criminal development, growth curve models therefore seem to make little intuitive sense.

More recently, scholars have developed a group-based, latent class approach for modeling criminal trajectories [Nagin and Land 1993; Nagin, 2005; Muthén 2001]. These models are more in line with theories assuming that there is no general trend in criminal behavior, but different groups of people have different trajectories. Group-based models approximate individual developmental variation by a number of discreet groups. As in growth curve models, the outcome variable is linked to age by some polynomial function; but unlike growth curve models, the group-based model allows the parameters of this function to vary freely across groups. As a result, the estimated course of development for each group can be very different both in level and time path. In addition to the trajectories themselves, the group-based model produces an a posteriori probability of membership for each individual in the sample and for each of the distinguished trajectory groups. These probabilities indicate the likelihood that an individual showing a specific behavioral pattern belongs to one of the specified groups. These probabilities can be used for creating descriptive profiles of each group by assigning each individual to the trajectory group for which his posterior probability of group membership was highest [e.g., Van der Geest, Blokland, and Bijleveld, 2008].

Group-based models have become a popular way of analyzing criminal development [for reviews, see Piquero, 2008; Van Dulmen et al., 2009]. Yet, some researchers—and the models' architect in in the lead [see Nagin, 2005]—have warned against the unintelligible use of the method and pointed at common misconceptions in interpreting its outcomes [e.g., Eggleston, Laub, and Sampson, 2004; Nagin, 2004, 2005; Nagin and Tremblay, 2005]. In the context of this chapter, we highlight three such misconceptions. First, group-based methods essentially provide a statistical tool to reduce complexity in longitudinal data sets following many individuals over time. Any trajectories distinguished describe long-term behavioral patterns but leave room for short-term individual variability. Individuals, thus, do not necessarily develop exactly according to the trajectory they are allocated to [Nagin and Tremblay, 2005]. Second, while partly inspired by typological theories, the mere finding of developmental trajectories in a particular data set does not

provide a confirmation of these theories. While the shape of the trajectories distinguished combined with the offender profiles associated with them may indicate a certain theory as promising, a true test would involve determining whether different groups of offenders are distinct in the causal mechanisms that govern their criminal development [Sampson and Laub, 2005]. Finally, while certain risk factors may elevate the probability of following a certain trajectory, not all individuals following that trajectory share these risk factors and, perhaps more important, not all individuals with those risk factors follow that particular trajectory. Interventions aimed at a distinct group of individuals defined by their risk factors thus inevitably lead to many false positives. Population-based interventions targeting risk factors specifically associated with high-rate offending trajectories may, on the other hand, be productive [Nagin and Tremblay, 2005].

3.7.2 Explaining Developments over Life: Estimating Effects of Life Course Events and Interventions

When trying to explain changes in criminal behavior by life course transitions, or when evaluating the effects of some intervention aimed at redirecting criminal development, one of the biggest hurdles life course criminologists must overcome is to properly account for variables that may produce spurious association between the transition or the intervention and crime. The preferred method to exclude the effect of confounding variables is to conduct an experiment where individuals are assigned to transitions or interventions in a completely random fashion. Randomization has the effect that all variables—whether observed or unobserved—except the assigned transition, are balanced. While some transitions, like getting a job, could be candidates for random allocation, other important life course transitions like marriage, parenthood, or long-term imprisonment are probably less suitable. The methodological challenge life course researchers therefore face is to come up with methods that can be used to make causal inferences based on observational, rather than experimental, data. Besides being methodologically challenging, controlling for confounding variables is theoretically salient, given that there are theories that ascribe criminal development only to stable characteristics and explicitly deny causal impact for contextual factors [Hirschi and Gottfredson, 1995].

The easiest and most often used method to control for underlying factors is within a regression framework. To control for confounding influences, besides using an indicator of the transition or intervention of interest, one simply adds variables representing possible confounders to the regression model. Likely confounders to be included in such models are demographic characteristics and variables describing criminal history. If the model is specified correctly, the model will represent the effect of the transition or

intervention net of the influence of the confounders added. The most important drawback to using regression models is that they only control for variation in observed characteristics, or observed heterogeneity. As a result, variation in unobserved characteristics, or unobserved heterogeneity, may still unsuitably influence any association established.

In an effort to overcome problems caused by unobserved heterogeneity, criminologists have turned to models that have allowed them to analyze within-individual change. These kinds of models make optimal use of the longitudinal data becoming available, because they compare the behavior of the individual after undergoing the transition or intervention to that of the same individual before undergoing the transition or intervention [Osgood, 2005]. In within-individual change analyses, the individual thus acts as his or her own control, thereby nullifying the confounding effects of time-stable individual characteristics, both observed *and* unobserved. Such models have been applied in criminology to estimate the effects of such important life course transitions as finding employment, getting married, or becoming a parent [Blokland and Nieuwbeerta, 2005; Horney, Osgood, and Marshall, 1995; Laub and Sampson, 2003; Layton MacKenzie and De Li, 2002]. Although within-individual change models suffer far less from omitted variable bias than do regression models, they only control for confounders that themselves do not change over time.

Another way of modeling selection resulting from confounding variables that has recently found its way into life course criminology is propensity score matching. A propensity score is the conditional probability of experiencing a transition rather than the control given the observed covariates [Rosenbaum and Rubin, 1983]. In the life course context, the propensity score could, for instance, represent the conditional probability of being married at age 25, given observed covariates up to that age. If two individuals have the same propensity score observed covariates—both time stable as well as time varying—these observed covariates will be of no further use in predicting which of these two individuals will be married at age 25. The next step in propensity score matching involves matching the individual experiencing the transition with an individual—or several individuals—with a comparable chance of experiencing the transition but who in actuality does not experience the transition. Comparing posttransition outcomes for matched individuals will yield estimates of the effect of the transition net of time-stable and time-varying observables. In the marriage example, propensity score matching would entail comparing criminal behavior in the 26-to30 age period for those who were married at age 25 with that of those who were, in important respects, similar to those married but who themselves were not married at age 25. Nevertheless, if as a result of unobserved cofounders the applied propensity model is not entirely successful in capturing selection into marriage, the resulting effect of this transition may still be compromised.

Sensitivity analyses can be conducted to test the robustness of the obtained effect against the presence and magnitude of unobserved confounding.

3.8 Empirical Research in Life Course Criminology

The growing amount of available longitudinal data, combined with increasingly sophisticated analytic methods, has yielded an enormous amount of empirical findings. We now highlight some of these findings as they reflect the aims of life course criminology cited in the opening paragraph of this chapter: describing, explaining, and redirecting criminal behavior.*

3.8.1 Describing Developments over the Life Course

The 1986 report of the Panel of Research on Criminal Careers distinguished three important dimensions that together demarcate the criminal career: participation, frequency, and duration. *Participation* asks how many people actually engage in criminal behavior over their life course. Using data from the first Philadelphia birth cohort study, Wolfgang, Figlio, and Sellin [1972] found that of those boys born in 1945, little over one-third had experienced a police contact by the time they reached 18. The second Philadelphia birth cohort study, following up a sample born in 1958, yielded a comparable participation rate [Tracy, Wolfgang, and Figlio, 1990]. Results from a Dutch cohort study tracking the entire Dutch population born in 1984 found that by the time cohort members had reached 22 years of age, 14% had at least one police contact [Grimbergen et al., 2008]. Age 25 participation in the Swedish project Metropolitan reached 19% [Wikström, 1990]. Tracking the lives of 411 London working-class males, the Cambridge Study in Delinquent Development indicated that by 50 years of age, 41% of the men were convicted [Farrington et al., 2006]. Visher and Roth [1986] reviewed several longitudinal studies and estimate a lifetime participation rate of 40–50%. In contrast, self-report studies in the United States and elsewhere have yielded participation rates close to 100%, with the vast majority of people reporting behaviors that could have resulted in a criminal conviction. Comparing participation rates across different age periods tells us that for both official records and self-reports, the peak period of first participation or onset is before age 18. In sum, most people seem to engage in criminal acts sometime during the course of their lives; and for many, their criminal behavior results in some kind of criminal justice involvement. AQ12

* For extensive reviews: Farrington (2003) summarizes the empirical data by distinguishing established knowledge and contentious issues; Piquero, Farrington, and Blumstein (2003) also provide an elaborate overview of the empirical status of criminal career research.

Estimates of the *frequency* of offending differ widely across studies, depending on the nature of the sample, the time period under study, and whether official or self-report data were used. The criminal careers of the Dutch-born offenders in the Dutch Criminal Career and Life Course Study averaged about 11 convictions [Blokland, 2005]. The distribution of conviction frequencies was highly skewed, however. About one-third of the 1977 offenders being convicted only once or twice, but the 5% most active offenders being convicted over 40 times. In the high-risk sample of the Cambridge Study, the average criminal career up to age 50 comprised five convictions (excluding driving offenses) [Farrington et al., 2006]. Self-reports revealed, however, that behind every conviction there were on average 39 offenses. One of the first efforts of estimating actual yearly offense rates were the Rand Inmate Studies. These studies questioned inmates about their criminal activity in the period preceding their imprisonment and arrived at yearly estimates of 15 and 50 burglaries, and between 5 and 22 robberies. Later studies using more refined methodologies adjusted these initial estimates downward [Rolph and Chaiken, 1987; Visher, 1986; see also Horney and Marshall, 1991]. Summarizing the literature on offending frequency, Spelman [1994] concludes that the average offender commits about eight crimes a year, whereas offenders that are imprisoned at some point in their criminal career commit as much as 30 to 50 crimes per year. In the year directly preceding their imprisonment, incoming prisoners may commit as much as 100 crimes. The distribution of offending frequency is highly skewed, with most offenders offending at low frequencies and few offenders offending at much higher rates [see also Visher, 2000].

Criminal career *duration* is defined as the period between the first and last offense. Lacking data spanning a long enough period, a number of early studies have tried to produce estimates on how long people actually engaged in criminal behavior [e.g., Greenberg, 1975; Shinnar and Shinnar, 1975]. Using data from the early 1970s, one of the most sophisticated of these earlier studies, by Blumstein, Cohen, and Hsieh [1982], yielded duration estimates ranging between four and seven years. Later studies have come up with similar results [e.g., Spelman, 1994]. In the absence of longitudinal data covering the entire life span, these early studies had to make a number of assumptions about criminal careers and the offender population. With time, however, samples in ongoing longitudinal studies grew older and criminal career data became available for increasingly longer periods of time, allowing career
AQ13 duration to be observed, rather than estimated. For instance, Piquero, Brame, and Lynam [2004] studied the data from the California Youth Authority and examined the criminal career duration of 377 male parolees. They found the majority of the criminal careers spanned 15 to 20 years. Official data on a 1953 birth cohort followed up to age 40 showed the average criminal career duration to be 9.7 and 5.6 for males and females, respectively [Tarling, 1993].

Based on data up to age 50, Farrington and his colleagues [2006] found the average criminal career in his sample of London working-class boys to be 9 years. Farrington, Lambert, and West [1998] also studied the length of the criminal careers of the boys' parents and found that the average career duration for the older generation was 15–16 years. Criminal career duration in the Dutch 1977 conviction cohort studied by Blokland and Nieuwbeerta was 15–26 years, depending on the age of conviction in 1977 and excluding one-time offenders [Blokland, 2005]. Both frequency and criminal career duration are linked to age of first participation: early onset is associated with longer career duration and higher offending frequency [Blumstein, Cohen, and Hsieh, 1982; Visher, 2000]. Boys in the Cambridge study, for example, who first participated in crime between ages 10 and 13, had an average career duration of nearly 12 years incurring nearly 9 convictions, compared to those offenders experiencing onset between ages 21 and 30, had criminal careers that averaged 2 to 3 years, and on average incurred 1.8 convictions [Farrington et al., 1998].* AQ14

With the advance of the group-based methodology in the early 1990s, criminologists were provided a methodological tool to summarize the different combinations of the three criminal career dimensions identified in the panel's report in a number of developmental trajectories [Nagin and Land, 1993]. Two recent reviews together identify more than 80 studies that have used a group-based method to describe developmental pathways in their data sets [Piquero, 2008; Van Dulmen, 2009], and new studies continue to AQ15 surface [Van Domburgh et al., 2008; Van der Geest, Blokland, and Bijleveld, AQ16 2008]. Although the number and shape of the trajectories identified differ between studies, a number of key findings emerge from these reviews. First, not all trajectories are similarly shaped and not all follow the shape of familiar age-crime curve as is evident from cross-sectional data. Trajectories differ in the age of onset, the speed of activation, and the height and timing of the peak, as well as the rate of desistance. Second, despite differences in shape, most trajectories show the rate of criminal behavior to decline when offenders start to reach adulthood. Third, most studies find trajectories that show a sharply peaked pattern. Many also find one or more "chronic" patterns: pathways showing markedly less variation in mean offending frequency across age. Finally, trajectory studies have identified a pathway not predicted by most developmental theories. In this late onset pathway, offending is virtually absent until middle to late adolescence, but after that it starts to rise [e.g., Van der Geest, Blokland, and Bijleveld, 2008]. During the adult period, offenders on this pathway continue to offend at levels much higher than that of the majority of the population under study.

* Piquero, Farrington, and Blumstein (2003) provide a more extensive review of the empirical knowledge on criminal participation, offending frequency, and criminal career duration.

Finally, researchers have studied the content, or *crime mix*, of criminal careers. An important question researchers were keen on answering was whether or not offenders tend to specialize in offending over time. Different studies have defined what is meant by specialization in offending in very different ways, depending on the methods used in these studies. Broadly speaking, two types of specialization can be distinguished. First, specialization can be defined as a tendency to repeat the same or a similar type of crime on subsequent occasions. If this tendency becomes stronger with every subsequent offense, it might signal a causal effect of prior offending on future offending, perhaps through learning. Second, specialized offending can be defined negatively as the absence of diversity. Moffitt's dual taxonomy predicts between-individual differences in offending versatility, with persistent offenders being most versatile [Moffitt, 1997]. Both lines of research have found evidence of specialization, but often amid much versatility [Piquero, Farrington, and Blumstein, 2003:455]. That is, while offenders do seem to repeat the same kind of offense more often than could be expected by chance, the image of the highly specialized "professional" offender, as might have been derived from earlier qualitative studies, requires adjustment. At least during adolescence, persistent offenders do seem more versatile than nonpersistent offenders [Mazerolle et al., 2000]. There is also some evidence to suggest that offending versatility declines
AQ17 with age [Piquero et al., 1999; Mazerolle et al., 2000]. Recently Francis and others [2004] designed a clustering approach, not unlike that used to distinguish trajectories, for identifying clusters of offense types that commonly go together. Applying this methodology to a cohort of British offenders, these researchers were able to show that offenders in the Criminal Career and Life Course Study showed continuity in offense clusters across age, which, recognizing that crimes are not isolated events but are, instead, embedded in the daily lives of offenders, was interpreted as stability in the
AQ18 underlying lifestyle that was giving rise to the behavioral pattern [Blokland et al., 2008].

3.8.2 Life Course Developments—at the Micro Level

We have mentioned that in their efforts to explain the developmental course of individual criminal careers, life course criminologists have turned to the influences of important transitions in trajectories other than that of crime. Most research focuses on important life course transitions that based on DCL theories are expected to contribute to desistance from crime. Since in many DLC theories desistance is thought to result from increasing ties to conventional society, the life course transitions studied foremost represent transitions that subject individuals' routine activities to higher levels of social control, like joining the military, becoming employed, and starting a family.

Yet, realizing that over the life course people circle in and out of these states of intensified control, life course criminology has also focused on the effects of unemployment and divorce.

3.8.2.1 Military Service

Joining the military is considered an important life event for many young men (and women) in modern Western societies [Elder, 1986]. For those volunteering for service, the military may offer a way out of poor living conditions or a stressful social environment. Military service may also provide a stable source of income and the opportunity to learn skills beneficial in civilian life. By the same token, however, those drafted may find their academic or employment careers disrupted and their social relationships burdened by long periods of absence. In addition, during times of conflict, the atrocities of war may scar soldiers physically and mentally, thereby permanently altering their developmental prospects in many life course trajectories, including crime. AQ19

Empirical studies of the effects of military service on subsequent criminal development have yielded contradictory results. A number of studies find evidence of behavioral continuity across age and find military service to have little or no impact: those reporting to have engaged in crime prior to joining the military also reported committing crimes while in service and after discharge [Allen, 2000; Allen Bouffard, 2003; Hakeem, 1946; Lunden, 1951]. In the only study thus far, to our knowledge, that used non-American data, Van Schellen and Nieuwbeerta [2007] found no effect of military service in Dutch men drafted for military service, once personal characteristics were properly controlled for. Other studies have found that military service can have a dampening effect or subsequent criminal involvement. Reporting on the delinquent development of over 900 boys, Mattick [1960] found that military service reduced later delinquency. Similar effects were reported by Sampson and Laub [1993, 1996; Laub and Sampson, 2003, 2004] in their analysis of the criminal careers of the 500 reformatory pupils first studied by Sheldon Glueck and Eleanor Glueck. Those respondents that had joined the military had a higher change to refrain from crime. In addition, often referring to the training received in the service and the benefits received after discharge, several of the men who desisted from crime described the military as an important turning point in their lives [Sampson and Laub, 1996; Laub and Sampson, 2003]. AQ20 AQ21

The interplay of lives and historical time seems especially important here. The studies that did find beneficial effects of military service comprised men who spent their time in the military during either World War II or Korea. For the soldiers who served in Vietnam, military service actually had a criminogenic effect [Shaw, Churchill, Noyes, and Loeffelholz, 1987; Resnick, Foy, Donahoe, and Miller, 1989]. Many men returning from Vietnam suffered from

posttraumatic stress disorder and other emotional and behavioral problems that impacted heavily on their future prospects [Yager, Laufer, and Gallops, AQ22 1984; Wilson and Zigelbaum, 1983]. Others have pointed to the widespread (mis)use of drugs among American soldiers, a habit many brought with them on their return home [Wright, Carter, and Cullen, 2005]. Finally, recent longitudinal research by Bouffard [2005] studied levels of self-reported crime in young men who joined the military, either as volunteers or draftees. This research showed that while, on average, military service had no effect on subsequent levels of self-reported criminal behavior, effects were found when the sample was disaggregated into several subgroups. For Afro-American boys, military service led to a decrease in self-reported delinquency, whereas for those of low socioeconomic status or reporting prior delinquency, the opposite effect was found.

3.8.2.2 Work

Legitimate work has a number of features that make it a good candidate to curb delinquency and crime. Work reduces the economic need for crime, exposes the worker to the social controls of the workplace, restructures daily routines, and through commitment and stability may lead to internalized sources of control and a conformist sense of self [Sampson and Laub, 1993; Uggen and Staff, 2001]. Therefore, for many criminologists and policymakers alike, the notion that employment prevents crime is to state the obvious [Hirschi, 1983]. Nevertheless, the empirical findings on the effects of work on crime seem less straightforward and draw attention to the life course idea of timing.

The overall conclusion of empirical research on the work-crime association seems to suggest that if work has any effect on crime, it does so only for some offenses and some offenders [Bushway and Reuter, 2002]. Examining the work-crime relationship in the Cambridge data, Farrington and his colleagues [1986] found that being unemployed was related to increased levels of property crime, but only for those individuals who were already relatively crime prone. Horney and others [1995], on the other hand, studying criminal development in a sample of convicted felons, found that full-time employment reduced violent offending, but at the same time led to an increase in property offending. Of more direct relevance to the life course perspective, there is also some empirical evidence that suggests that employment is negatively associated with crime in adult samples, but not in adolescent samples. Using data from a large-scale experimental employment program that involved over 3,000 participants across nine American cities, Uggen [2000] found employment—in this case, minimum-wage jobs mainly in construction and service industries—to reduce crime, but only in those aged 27 or older. Among those under 27, random allocations to employment did not significantly affect criminal behavior. Numerous nonexperimental studies even suggests that intensive work—working over 20 hours per week—may increase, rather

than decrease, crime and other problem behaviors in adolescents [e.g., Greenberger and Steinberg, 1986; McMorris and Uggen, 2000; Mihalic and Elliot, 1997; Mortimer et al., 1996]. Moreover, Uggen and Staff [2001] report that job characteristics that lead to desistance in adults had the inverse effect in adolescents. In effect, adolescents in high-status, autonomous, and better-paying jobs reported more delinquency than adolescents in low-status, less autonomous, and low-waged jobs. AQ23

For teenagers in modern Western societies, high-intensity employment might be considered an "off-time" transition, which could help explain its detrimental impact on subsequent adolescent development. Yet, because crime-prone adolescents may also select themselves into a work environment, rather than school, results from nonexperimental studies need to be interpreted with care. Various studies have found that selection bias explains much, if not all, of the association between work and crime [e.g., Bachman and Schulenberg, 1993; Ploeger, 1997; Paternoster et al. 2003; Steinberg, Fegley, and Dornbusch, 1993]. In a recent paper on the link between adolescent employment and delinquency, Apel and others [2007] used a propensity score matching approach to control for selection effects. A naive comparison between youths working intensively at age 16 and those not working showed working youths significantly more likely to use drugs or report criminal behavior. However, after controlling for prior levels of substance abuse and criminal behavior, no effect of intensive work remained, suggesting that the association between intensive work and crime is predominantly attributable to preexisting differences in youth choosing work and those choosing not to work.

3.8.2.3 Marriage

Marriage has long since been coined as a social institution capable of providing a turning point in many different life domains, including crime. The notion that marriage provides a catalyst for criminal desistance is a prominent feature of the work done by Sampson and Laub. Their age-graded theory views the social ties in marriage as an important source of social control. Marriage is thought to promote desistance because offenders know themselves to be in danger of losing the social capital generated through the marital union were they to persist in their criminal ways. Others have emphasized the changes in routine activities and patterns of association that usually accompany married life [Osgood and Lee, 1993; Warr, 1998]. In their most recent contribution to the literature on the topic, Laub and Sampson [2003] proffer various mechanisms through which marriage could promote desistance, in addition to direct social control exerted by spouses, like changes in the time spent with same-sex peers, new opportunities for socialization, changes in exposure to delinquent friends, and the residential change that might accompany the start of a family.

The majority of the empirical literature finds that being in a married state is associated with lower levels of crime. Evidence for what is sometimes called "good marriage effect" comes from studies employing high-risk samples, population studies, studies relying on official data, and self-report studies and is found for both men and women, for minorities, and in various countries, including the United States and Canada, the United Kingdom, the Netherlands, and Norway. In their pioneering work on the Glueck sample, Sampson and Laub [1990] found that being in a state of marriage was negatively associated with crime, even when prior criminal involvement was taken into account. In a later analysis, Laub and Sampson [2003] applied a within-individual change model to better control for heterogeneity and selection. Their findings showed marriage to reduce crime by 33 percent, even when between-individual differences in marriage propensity, juvenile delinquency, and childhood risk factors were taken into account. Most recently, Sampson, Laub, and Wimer [2006] applied propensity score weighting and still found being married inhibited crime. Testing the hypothesis derived from typological theories that persistent offenders are unaffected by changes in life circumstances, Blokland and Nieuwbeerta [2005] analyzed the criminal careers of a cohort of Dutch offenders. They found that being married was associated with a 27 percent drop in conviction rates for low-rate offenders and a 55 percent drop in moderate-rate offenders. Marriage, however, did not significantly decrease the conviction rate of high-rate offenders. Still, high-rate offenders were not totally immune to changes in life circumstances: transitioning to a divorced
AQ24 state significantly elevated their already high conviction rates.* The combined results of these studies strongly suggest the relationship between marriage and crime to indeed be inversely causal in nature, thereby refuting prior claims that the marriage-crime association is spurious and solely results
AQ25 from social selection [Gottfredson and Hirschi, 1995].

As with all other life course transitions, it is important to consider the historical time in which the marriages examined in these studies were taking place. Much of the evidence on the crime-inhibiting effects of marriage is derived from respondents marrying in the 1950s and 1960s, an era in which men were, above all, conceived of as breadwinners and women as housewives. Economic prosperity provided ample opportunity in all segments of society to showcase one's ability to be a good provider, and divorce was largely considered unseemly. Because the life course of every particular cohort reflects the particular spacio-temporal context in which the lives of its members unfolded, the generalizability of findings across historical times is hampered. In fact, when discussing the so-called good marriage effect

* Studying marriage effects up to age 32, Laub, Nagin, and Sampson (1998) did find being married to inhibit crime, even in offenders following high-rate chronic trajectories.

in the Glueck sample, Laub and Sampson noted that the "prospects for current cohorts may not be as promising." Elaborating on Blokland and Nieuwbeerta [2005], Bersani, Laub, and Nieuwbeerta [2008] specifically addressed the question of whether the marriage-crime relationship differs across sociohistorical contexts. Comparison of the marriage effects across three different cohorts of Dutch offenders—respectively marrying in the 1960s, 1970s, and 1980s—revealed that being in a married state reduced offending regardless of historical context. Actually, the marriage effect was strongest in the youngest cohort. One possible explanation is that because in the Netherlands cohabitation has become a normative phase in the life course prior to marriage, those individuals that eventually do marry experience greater marital stability and quality.

3.8.2.4 Linked Lives

The principle of linked lives is central to the life course perspective because social support and regulation occur to a major extent through social relationships, and macro-contextual influences are expressed through such relationship networks. Whereas the amount of support may depend on the strength of the tie, the kind of support is influenced by the characteristics of the persons to whom one is linked. Yet, in considering the effect of marriage on crime life course, criminologists have focused either on the regulatory features of the institution itself or on the quality of the marital bond. Far less attention has been paid to the kinds of lives that tend to become linked in marriage. The latter, however, is especially salient in criminology, since people are known to form relationships with persons who are in many aspects similar to themselves—a tendency known as assortative mating. In the case of delinquency and crime, research shows that people behaving delinquently tend to associate with partners also involved in crime.

A number of criminological studies speak either directly or indirectly on the association of criminal behavior between partners. The majority of these studies find partners to resemble each other in their criminal behavior [e.g., Baker et al., 1989; Farrington et al., 1996; Farrington et al. 2001; Galboud du Fort et al., 2002; Moffitt et al., 2001; Taylor et al., 2000]. Studies on drug and alcohol use corroborate these findings [Yamaguchi and Kandel, 1993; Olmsted, Crowell, and Waters, 2003]. This association holds across different ages and across different measures of crime. For instance, in the Dunedin Study, respondents in steady partnerships at age 21—relationships with a duration of months or more at the time of the interview—resembled their partners in self-reported delinquency ($r = 0.55$) [Krueger et al., 1998]. Similar results ($r = 0.43$) were found in the Oregon Youth Study [Kim and Capaldi, 2004]. Analyzing conviction data on the biological parents of the boys in the Cambridge Study, Rowe and Farrington [1997] found an association of 0.55. Following respondents far into adulthood, Van Schellen, Nieuwbeerta,

AQ26 AQ27 AQ28 AQ29 AQ30

and Poortman [2008], using data from the Criminal Careers and Life Course Study, found that convicted men were more likely to have married a convicted partner than were unconvicted men. Partners were also found to resemble each other in the level of their criminal behavior.

Resemblance does not equal influence, however. Combining research on
AQ31 the "good marriage" effect and that on assortative mating, Simons and others [2002] set out to study whether involvement with an antisocial romantic partner actually lead to increased criminal behavior. Both males and females evidenced assortative mating, as prior delinquency and having delinquent friends predicted having an antisocial partner in young adulthood. Furthermore, for females but not for males, having an antisocial partner was strongly associated with adult crime, indicating that for females, aside from social selection, deviant romantic partners had a negative impact on
AQ32 criminality. Most recently, Van Schellen, Apel, and Nieuwbeerta [2009], using the Criminal Careers and Life Course Study dataset, showed that marrying a criminal spouse increases one's criminal activity—for both sporadic and persistent offenders.

Another example of the principle of linked lives in life course criminology is that of intergenerational transmission of criminal behavior. Children may resemble their parents either because important risk factors for delinquency—for example, ineffective childrearing practices, low education, or poor living conditions—are passed on or because assortative mating leads both individual and contextual risk factors to cumulate in the family environment. Children can also be expected to learn from their parents' behavior and be influenced by their moral standards. Finally, children of criminal parents may suffer indignities because of a parent's bad reputation [Farrington, 2002].

Several empirical studies have linked the criminal behavior of the parents (or father) to that of the children. Gorman-Smith and others [1998], analyzing data from the Chicago Youth Development Study, found that persistent delinquents are more likely to originate from families with deviant conducts, a finding that was replicated in the Pittsburgh Youth Study [Farrington et al., 2001]. These studies also showed the father to be the most important relative in predicting the criminal behavior of the child. Data from the Glueck study also showed the criminal behavior of fathers and that of their sons—born in the late 1920s and early 1930s—to be positively associated [Sampson and Laub, 1993]. Over the years, the Cambridge Study in Delinquent Development has expanded into a multigenerational study, reconstructing the criminal careers of the original sample of 411 London boys (Generation 2), their parents (Generation 1) and that of their children (Generation 3), the latter of whom have reached ages between 18 and 35. Rowe and Farrington [1997] found a correlation of 0.43 between the criminal behavior of the research subjects and that of their fathers, whereas children of delinquent boys evidenced

behavioral problems in 39% of the cases, compared to 20% of the children from non-delinquent boys [Smith and Farrington, 2004]. Results from the Cambridge Study further suggest this correlation to be caused, in part, by the intergenerational transmission of environmental risk factors [Farrington et al. 2007]. The Dutch Criminal Career and Life Course Study was also recently expanded to include the children of the original subjects. Van de Rakt, Nieuwbeerta, and De Graaf [2008] studied the criminal trajectories of over 4,271 offenders convicted in 1977 and their 6,952 children for a period of over three decades. Confirming findings from earlier studies, the number of convictions of fathers was positively related to that of children, even when controlling for age and sex. The likelihood of conviction was especially high for children whose fathers exhibited moderate to high levels of criminal behavior and persistence in crime. Comparing criminal trajectories for fathers and children was shown that having a father on a persistent criminal trajectory increased the likelihood of the child also showing persistence in crime.

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In sum, these findings underline the life course notion that an individual's criminal trajectory does not take place in isolation; rather, it proceeds in continuous dialogue with the developments occurring in the lives of the criminal's neighbors.

3.9 Redirecting Criminal Development

Ultimately, knowledge on the hows and whys of criminal development is to aid the design and implementation of policies that either successfully prevent individuals from embarking on a criminal path or significantly curb development of those already engaged in crime. Both empirical and theoretical life course criminology studies have inspired a wide range of interventions. Here our focus is on imprisonment, and for several reasons. First, questions of incapacitation have featured prominently in the field ever since the Panel of Research on Criminal Careers was asked to evaluate the feasibility of predicting the future course of criminality and assess the possible effects of selectively incapacitating those offenders who were predicted to show prolonged criminal careers. Second, from the late 1970s onward, prison rates have skyrocketed in many Western countries, and an increasing number of offenders are currently facing imprisonment [Aebi et al., 2006; Sabol, Couture, and Harrison, 2007]. Against the backdrop of mass imprisonment, life course criminologists have increasingly called attention to possible detrimental effects of imprisonment for subsequent development in crime and also in many other life domains [Hagan and Dinovitzer, 1999]. Finally, research on the effects of imprisonment once again highlights many of the topics addressed in this chapter, including problems with disentangling

selection and causation, the interdependence of criminal and conventional trajectories, and reciprocity between the larger social structure and individual development.

Recidivism rates among ex-prisoners are as high as 60% over a three-
AQ34 year follow-up [Langan and Levin, 2002]. These high rates could lead one to conclude erroneously that imprisonment has no effect beyond incapacitation and that most offenders are resistant to efforts aimed at changing their criminal ways. Such high rates are deceptive, however, since imprisonment is not meted out randomly but reserved for those offenders who have the longest criminal records, have committed the most serious crimes, and are assumed to have the highest chances of recidivating. High recidivism rates among ex-prisoners therefore partly result from selection—this time not by the offender, the employer, or the spouse, but by the criminal justice system. The ideal way of dealing with selection effects would be to conduct a randomized experiment. However, ethical concerns—especially when considering longer prison terms—stand in the way of testing for the effect of
AQ35 imprisonment experimentally. A recent review by Nagin, Cullen, and Lero Jonson [2009] identifies only four true experiments that involved random allocation of custodial versus noncustodial sanctions. It also mentions a Dutch study making use of the natural experiment that occurred when, at the occasion of the wedding of then Princess and currently Queen Beatrix, during a specified period, persons convicted to prison sentences of no longer than 14 days were pardoned. Based on these studies, Nagin, Cullen, and Lero Jonson conclude that the experimental evidence shows imprisonment to have a criminogenic, rather than a preventive, effect, while at the same time recognizing that this conclusion is weak, given the small number of studies, their limited generalizability to current prison populations, and the many estimates not reaching statistical significance. Without many opportunities for conducting true experimental studies, criminologists interested in the effects of imprisonment have taken refuge in a number of different statistical methods, including regression methods and propensity score matching, to control for selection in their observational data. In their review, Nagin, Cullen, and Lero Jonson also discuss a large number of nonexperimental studies. Regression-based studies as well as matching studies are found to back the conclusion reached on experimental evidence that imprisonment has a criminogenic effect. However, since many studies were able to take into account only a limited number of confounding variables, these results may still be open to bias resulting from selection.

The life course perspective offers much ground to explain why imprisonment would conduce to future criminal involvement. First, a prison experience could directly affect the offender's knowledge and skills for committing certain offenses. It may also affect the offender's appraisal of the costs and

benefits associated with crime,or change his or her goals or ambitions and general outlook on society. Imprisonment may also indirectly affect criminal development through the effect imprisonment has on other life course domains that are, in turn, associated with crime. Sampson and Laub [1997] AQ36 argue that legal sanctions may contribute to the endurance of criminal involvement by cutting off conventional developmental pathways. Society's negative reaction to ex-prisoners contributes to the offender becoming marginalized from conventionally structured opportunities and conventional others, which in turn increases the likelihood of their subsequent offending [Bernburg and Krohn, 2003].

Several empirical studies support the idea that legal sanctions downgrade conventional attainment [Freeman, 1996; Nagin and Waldfogel, 1995, 1998; Sampson and Laub, 1993; Waldfogel, 1993; Western, 2002; Western, Kling and Weiman, 2001] and increase future offending [Bernburg and Krohn, 2003; Hagan and Palloni, 1990]. A telling example is a study by Pager [2003], who finds that employers advertising entry-level job openings were less than half as likely to call back job applicants who reported having been convicted of a felony and having served time in prison, compared to applicants with no prison history.

The collateral effects of imprisonment may even extend beyond the person of the ex-prisoner and be felt in a wider social radius. As imprisonment removes the offender from his or her social surroundings, it exacts a financial and psychological toll on those whose lives are most closely linked, like parents, spouses, and children. Research based on the National Longitudinal Study of Youth (NLSY), for example, showed that married prisoners, during incarceration, were more than twice as likely to experience a transition to divorce than did their nonincarcerated counterparts [Lopoo and Western, 2005]. In the Fragile Families and Child Wellbeing Study, Western [2006] similarly found that incarceration significantly increased the risk of separation for men in marital or cohabitational unions.

Applying propensity score matching to data from the Criminal Career and Life Course Study, Apel and others [2008] also studied the effect of first-time imprisonment on marriage formation and stability among male offenders. These researchers found that while imprisonment had no effect on the probability of getting married, imprisonment did negatively affect marital stability. By the fifth year after release, ex-prisoners had a divorce probability that was over 50% higher than that of nonimprisoned, but otherwise comparable, men. The impact of imprisonment on the marital union appeared especially strong when spouses did not yet make the transition to parenthood. Furthermore, Murray, Van de Rakt, and Nieuwbeerta [2009], AQ37 using the same data set, showed that a father's imprisonment has substantial criminogenic effects on their children's criminal behavior.

3.10 Conclusion

Life course criminology is a vibrant branch of criminology that continues to stimulate the scientific imaginations of many. Its impressive pedigree makes it impossible to review in a single chapter everything known about the development of crime over the life course. We therefore urge the interested reader to further consult the many excellent reviews on specific criminal career and life course topics mentioned in this text. This chapter was framed around what we consider the three main aims of life course criminology, namely, description, explanation, and redirection, and has examined how the four major themes of the life course paradigm (location in time and place, the timing of lives, the notion of linked lives, and human agency) cut across each of these undertakings.

On the basis of the numerous descriptive studies that contribute to our current knowledge of the development of offending, Farrington [2005] lists 10 widely accepted conclusions about criminal careers. Among these conclusions are that the prevalence of offending peaks during the late teens, that a small fraction of chronic offenders account for a disproportionately large fraction of all crimes, that an early onset predicts both prolonged criminal involvement and frequent offending, and that criminal behavior appears versatile and part of a larger syndrome of antisocial behavior. Yet, as Farrington rightly notes, these findings—and the theories brought to bear to explain them—generally apply only to post–World War II lower-class urban males in Western industrialized societies, particularly the United States. Important from a life course perspective is how far these findings extent to other historical times and places, an issue that is often left unaddressed. To properly appreciate the importance of the sociohistorical context, one needs to realize that criminal careers often develop in defiance of the societal reactions they evoke. For this reason, criminal career patterns are bound to reflect the marked differences in penal policy between countries. The high-rate persistent pathway found in the Dutch Criminal Career and Life Course Study data, for instance, is likely to have resulted from the Dutch tendency to view drug abuse as a public health matter, rather than an issue of criminal justice. This, in turn, allowed drug-addicted offenders to build up a long list of—albeit less serious—convictions without having to face long prison terms. Given the criminalization of drug use in the United States, their drug use alone would have caused these offenders to be incarcerated for prolonged periods of time, drastically altering their criminal trajectory.

Taking a life course perspective similarly makes us aware of the fact that the yardstick by which we customarily chart development, namely, age, is itself in many ways a social construct. Rather than a mere biological reality, life course criminologists view age as a structural feature of societies differentiating both individuals and roles [Riley, Foner, and Waring, 1988]. As societies

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change, so does what it means to be young or middle aged, or even what it means to be 25. Age-graded descriptions of the development of criminal behavior, therefore, to a nontrivial extent reflect the prevailing social conditions of the era in which the data were collected. The social construction of age is especially salient in criminology, for researchers often rely on data generated by social agents (e.g., child protection agency, police, and courts) called into existence to enforce the accepted social roles of the time.

Much research aimed at explaining the development of criminal behavior over the life course has focused on desistance from crime and the possible "turning point" effects of transitions in other life course domains, primarily the transition into the military, to work, and to marriage. As with describing the development of criminal behavior across the life span, in explaining this development it is important to be alive to the importance of the historical era in which the data were collected. "Being in the military" or 'being married' or even more specifically "being married at age 19" may constitute a different set of experiences for the individual depending on the sociohistorical context. Research testing expectations regarding the changed nature of important life course transitions highlights the historical complexity of such transitions, since the historical context is likely to influence the content as well as the selection processes into important transitions [Bersani, Nieuwbeerta, and Laub, 2008]. AQ38

Human lives are extensively linked and developments in the live of one individual may resonate in the lives of many others. The notion of linked lives is important in viewing individual criminal behavior as part of a more general intergenerational developmental pattern, as well as for fully recognizing the potential effects of interventions on the lives of those other than the offender. It also calls attention to the fact that a shared transition—like getting married or becoming parents—may differentially affect the development of the individuals involved. For the man, marrying a less delinquent spouse may dampen his criminal involvement; at the same time, for the woman, marrying a more delinquent husband may increase her likelihood of future criminal behavior. Rather than partner characteristics per se, it is the relative difference between partners that is important here.

From a life course perspective, most efforts at redirection of criminal development can be viewed as intentionally induced transitions in the offenders' lives that are meant to either directly (e.g., incarceration), or indirectly (e.g., job training) alter the offender's future behavior. At the same time, adopting a life course perspective makes one conscious that the effects of any particular intervention will not be merely confined to the offender's criminal trajectory but, rather, will affect his or her development in other life course domains as well. Furthermore, such often unintended effects of formal sanctions may be felt differently at different ages and in different life stages. Current research has mostly dealt with the collateral effects of

imprisonment, but this argument extends to other types of sanctions as well. The focus on the collateral effects of imprisonment should not be mistaken for a total rejection of the use of imprisonment. It is, however, part of a more general appeal to shape interventions such that the benefits gained in one life domain are not nullified by losses experienced in another.

3.11 Future Goals

In recent decades, life course criminology has come a long way. Still, while our knowledge base continues to expand, in some areas it remains spotted. Based on the life course considerations explicated earlier, we offer four possible avenues for future research. First, given their dependence on historical time and place, comparisons between countries or historical periods should become part of future efforts in life course criminology. Besides strengthening the validity of the conclusions reached, extending their view beyond Anglo-Saxon countries will allow researchers to capitalize on the unique data position of many European countries—especially the Netherlands and the Scandinavian countries—in which detailed, individual-level life course data are available from official registers. Second, with regard to explaining criminal development, in our view the time has come to shift the focus of the debate away from the empirical question of whether life circumstances and criminal justice interventions have an effect on criminal development—which numerous studies have shown they do—to empirical and theoretical questions about the dynamics of that connection. This will allow life course criminology to move beyond the ontogenesis-sociogenesis debate and start testing hypotheses on why and how transitions and important life events and interventions are connected to criminal development.

Third, thus far life course criminology has focused mainly on the role of life course transitions in desistance from crime. As a result, far less is known about transitions that play a role in either the onset of an individual's criminal career or its maintenance, especially during the adult years. Future life course criminological research ought to fully recognize the variability of offending across the life span and also try to explain why some individuals start their criminal careers later in life, what factors contribute to the prolongation of criminal behavior, and why criminal development is often characterized by spells of intermittency.

Fourth, while the life course is seen as the totality of interconnected age-graded trajectories people engage in during their lives, much of the empirical research in life course criminology has concentrated mainly on the effects changes in life circumstances may have on crime. Considerably less attention has been paid to the effects crime may have on development

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in other, conventional domains. The studies that do so often address the collateral effects of official sanctions, not of criminal behavior as such, and focus mainly on employment. Therefore, future life course criminological research should also be aimed at studying the way crime affects both the development and the outcomes of other life course trajectories, including but not limiting itself to the effects of crime on employment, interpersonal relationships, drug use, and physical and mental health.

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Author Queries

AQ1: Elder 1985 not in Refs. Wrong date or missing entry?
AQ2: Arnett 2004 not in Refs. Please add.
AQ3: Meeuws, Branje and Overbeek 2004 not in Refs. Please add.
AQ4: Please add Patterson and Yoerger 1993 to Refs.
AQ5: Please add Gottfredson and Hirschi 1993 to Refs.
AQ6: Please add Gottfredson and Hirschi 1983 to Refs.
AQ7: No Gottfredson and Hirschi 1987 in Refs. Wrong date or missing Ref?
AQ8: Please add Menard 2002 to Refs.
AQ9: Farrington, Coid and Murray 2008 is "Forthcoming" in Refs. Which is correct?
AQ10: Please add Osgood 2005 to Refs.
AQ11: Layton MacKenzie and De Li 2002 not in Refs as such. Please add/correct.
AQ12: Grimbergen et al. 2008 not in Refs. Wrong date or missing entry7?
AQ13: Piquero, Brame, and Lyname 2004 not in Refs. Should this date be 2002?
AQ14: Farrington et al. 1998 not in refs. Do you mean Farrington, Lambert, and West 1998?
AQ15: Van Dulmen 2009 not in Refs. Do you mean Van Dulmen et al. 2009?
AQ16: Van Domburgh is 2009, not 2008, in Refs.. Which is correct?
AQ17: Please add Francis et al. 2004 to Refs.
AQ18: Please add Blokland et al. 2008 to Refs.
AQ19: Elder 1986 not in Refs. Please add.
AQ20: Van Schellen and Nieuwbeerta 2007 not in Refs. Pleae add.
AQ21: "higher change"? Do you mean higher probability of refraining from crime? Please rephrase.
AQ22: Wilson and Zigelbaum 1983 is 1984 in Refs. Date error or missing entry?
AQ23: Mihalic and Elliot 1997 should be Milhalic and Delber 1997, as in Refs, or is this a missing entry?
AQ24: Please add Laub, Nagin, and Sampson 1998 to Refs.
AQ25: Gottfredson and Hirschi 1995: should this be 1996, or is this a missing entry?
AQ26: Farrington et al here is Farrington, Barnes, and Lambert 1996?
AQ27: Please add: Gslbouf du Fort et al. 2002, Moffitt et al. 2001, and Taylor et al. 2000 to Refs.
AQ28: Missing from Refs. Please add: Yamaguchi and Kandel 1993; Olmsted, Crowell, and Waters 2003.

AQ29: Please add Krueger et al. 1998 to Refs.
AQ30: Please add Kim and Capaldi 2004 to Regs.
AQ31: Add Simons et al. 2002 to Refs.
AQ32: Add to Refs Van Schellen, Apel and Nieuwbeerta 2009.
AQ33: Farrington et al. 2007—please add to Refs.
AQ34: Langan and Levin 2002 missing from Refs. Please add.
AQ35: Nagan, Cullen and Lero Jonson 2009 missing from Refs. Please add.
AQ36: Sampson and Laub 1997 (not in Refs) or 1996?
AQ37: Please add to Refs Murray, Van de Rakt and Nieuwbeerta 2009.
AQ38: Bersani, Nieuwbeerta and Laub 2008 not in Refs as such. Should the name order be Bersani, Laub, and Nieuwbeerta, as in Refs entry?
AQ39: Farringrton et al 1986: ST. should be St., or is this a typo?
AQ40: Grimbergen et al. 2009 data available, or change to Forthcoming?
AQ41: Wrong date, or should there be Nagin and Tremblay 2005a and 2005b? Please review/correct as necessary.
AQ42: Van Dulmen 2009-in press. Update?

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