Abstract

Why is it that a small proportion of the population accounts for the majority of crime? This question has stimulated a great deal of theoretical and methodological controversy in criminology. In essence, the debate is rooted in different theoretical underpinnings of continuity and change in crime, and the extent to which it is possible to foresee a life of crime by zeroing in on at-risk juvenile offenders. The current thesis explores four contentious empirical issues that may move this debate forward: the long-term predictability of persistent offending in adulthood on the basis of childhood risk factors (Study I); the magnitude of adult-onset offending (Study II); the predictive value of gender for criminal recidivism (Study III); and the association between birth cohort membership and criminal career parameters (Study IV). All four studies employ longitudinal Swedish administrative data, based on cohorts of individuals born between the early 1940s and the mid-1980s, and followed on the basis of detailed conviction data. The thesis also utilizes qualitative life-history narratives with former at-risk juvenile delinquents. The results suggest that theories aiming to explain crime beyond the transition to adulthood should incorporate factors presumed to cause within-individual change, even among high-risk juvenile offenders. Although childhood cumulative risk, including a wide range of individual, family, school, and peer measures, were clearly associated with adult crime, they had limited value for predicting those persistent offenders who eventually ended up in the tail of the crime distribution. Furthermore, although gender is generally one of the main demographic predictors of criminal convictions, the results indicate that it is important to include females for the purpose of understanding continuity and change in adulthood. This is in part because adult-onset offending is more prevalent within the female offending population than within the male offending population and in part because the risk for criminal recidivism among female offenders becomes increasingly similar to that found among male offenders as convictions accumulate over the life span. Finally, the results suggest that the typical criminal career has undergone significant changes both within and across gender groups during the period since the mid-1970s, a period which has witnessed a historical decline in the aggregate conviction rate in Sweden. Taking this into consideration, the employment and extensive analysis of longitudinal multiple cohort data ought to provide a basis for furthering our knowledge on the inherent complexity of crime trends, while at the same time also locating the study of criminal careers in its historical context.

Keywords: Criminal career, Recidivism, Life course, Longitudinal, Birth cohort, Gender.
CRIMINAL CAREERS IN THE LONG RUN

Fredrik Sivertsson
Criminal Careers in the Long Run
Patterns and Predictions of Criminal Convictions across Age, Time, and Gender

Fredrik Sivertsson
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List of studies

Study I

Study II

Study III

Study IV
Contents

Acknowledgements

List of studies

Introduction

Background
  The Criminal Career Paradigm
  Developmental and Life-Course Criminology
  Two influential and rival theories of continuity and change in crime
  Moffitt’s Dual Taxonomy
  Sampson and Laub’s General Age-Graded Theory of Informal Social Control
  Developmental versus Life-Course Criminology

Aim of the Thesis

Methods
  Swedish administrative data for criminological research
  The 1956 Clientele Study of Juvenile Delinquents
  Methodological considerations
  Ethical considerations

Summary of the Studies
  Study I: Continuity, change, and contradictions: Risk and agency in criminal careers to age 59
  Study II: Adulthood-limited offending: How much is there to explain?
  Study III: Catching up in crime? Long-term processes of recidivism across gender
  Study IV: Participation and frequency in criminal convictions across 25 successive birth cohorts: Collectivity, polarization, or convergence?

Discussion
  Adulthood matters
  Locating criminal careers in their historical context
  Policy implications
  Concluding remarks

Sammanfattning (Swedish summary)

References
Introduction

Like many other social phenomena, crime is heavily skewed – a large proportion of individuals account for none or a few crimes while a small proportion of individuals account for the majority of crime (Andersson, 1990; Elonheimo, Frederiksen, Bernasco, and Blokland, 2017; Farrington, Piquero and Jennings, 2013; Kyvsgaard, 2002; Persson, 1976; Skardhamar, 2004; Wikström, 1990; Wolfgang, Figlio and Sellin, 1972; for a systematic review, see Martinez, Lee, Eck, and SooHyun, 2017). This well-established finding has stimulated a great deal of theoretical and methodological controversy within the criminological discipline. During a period of increasing rates of violence and imprisonment in the United States in the 1970s and 1980s, the skewed crime distribution was also a contributing factor to the rise of longitudinal research on crime, and to the criminal career paradigm (Hagan, 2010; Visher, 2016). In essence, the longitudinal study of crime has stressed that crime is a dynamic phenomenon and has at the same time offered a framework for the study of crime causation which has become dominant in contemporary criminology (Cullen, 2011). The criminal career paradigm laid out the basic concepts which made it possible to measure and describe the longitudinal sequence of crimes committed by an individual offender (Blumstein, Cohen, Roth, and Visher, 1986); theories which aim at explaining continuity and change in crime are often collected under the umbrella of Developmental and Life-Course Criminology (Farrington, 2003).

The current thesis is formulated within this field of longitudinal crime research. Previous studies have generated a number of key observations on criminal career patterns. These include the finding that the peak age of offending tends to occur somewhere during middle to late adolescence, after which there is a steady decline, that there is a positive association between past and future offending, and that an early onset in crime is predictive of a lengthy, high-frequency criminal career (DeLisi and Piquero, 2011; Farrington, 2003). Some of the most prominent theories aimed at explaining crime across the life course are fundamentally built around the robustness of these patterns. There are, however, also a number of contentious empirical issues that require further scrutiny. The current thesis deals with the following issues: (1) the long-
term predictive value of childhood risk factors for persistent offending in adulthood, (2) the magnitude of adult-onset offending, (3) the predictive value of gender for criminal recidivism, and (4) the association between birth cohort membership and criminal career parameters.

The studies included in this thesis have a number of common features, the main one being that they all utilize the potential of Swedish administrative data for longitudinal criminological research, and in particular the opportunity provided by these data to reliably link administrative data, such as information on criminal convictions, to a single individual (for an overview of the potentials with Nordic administrative data for criminological research, see Lyngstad and Skardhamar, 2011). The extensive longitudinal scope of Swedish registers and the possibility of linking the information from these registers, has provided a unique opportunity to analyze issues related to the longitudinal study of crime.

The four studies together include individuals born between the early 1940s and the mid-1980s, and they all cover an age range beyond what might be termed “emerging adulthood” in contemporary Western societies (Arnett, 2000). At this transitional stage of life, (roughly) at age 18 to 25, individuals are loosely attached to traditional markers of adulthood such as a stable job, a stable relationship, and parenthood, and they feel like neither juveniles nor adults, but rather something in between (Arnett, 2000). Given this developmental typology of age phases, quite little is actually known about criminal career patterns beyond emerging adulthood. The shortest follow-up of the four studies included in the thesis follows individuals to age 30 (Study IV) and the longest to age 59 (Study I). Three of the studies (Studies II-IV) are based on complete birth cohorts of the Swedish population, and these studies also make systematic comparisons across one of the main demographic predictors of crime: gender. Taken together, by analyzing the development of criminal activity to late adulthood, across gender, and across a substantial range of birth cohorts, the four studies in this thesis together extend the empirical knowledge base related to the longitudinal study of crime.

Following this introduction I present an historical overview of longitudinal research on crime, from the rise of the criminal career paradigm to contemporary research on crime and the life course. As part of this overview, I also review key empirical observations, important concepts, and what are probably the two most influential and rival theories in the field: Terrie Moffitt’s Dual Taxonomy and Robert Sampson and John Laub’s General Age-Graded Theory of Informal Social Control. I conclude the background chapter by elaborating on what is a broader dispute between a developmental perspective and
a life-course view of crime. Next, I present the overarching aim of the thesis and the specific aims of the four empirical studies, which together speak to this dispute. In the subsequent chapter, I describe the data and methods on which the four studies are based. This thesis is largely based on analyses of administrative data on criminal convictions using quantitative longitudinal methods, and I describe both advantages and disadvantages associated with this approach. In this section I also reflect on ethical issues linked to the use of highly sensitive individual data in empirical research. In the next chapter I provide summaries of the four studies included in this thesis. I conclude by discussing the overarching findings of the current thesis with respect to their implications for theoretical and methodological controversies in the longitudinal study of crime, and also with respect to policy and practice in the field of crime prevention.
Background

Before moving on to the historical and intellectual background of this thesis, it may be useful to illustrate two well-established patterns of crime – the skewed crime distribution and the age-crime relationship. These patterns are shown in Figure 1 and 2 respectively, using Swedish longitudinal conviction data for cohorts born during the first half of the 1960s who resided in Sweden at age 15 and were followed to age 50.¹

Figure 1. Lorenz curves for the distribution of convictions by gender. Birth cohorts born between 1960 and 1964 residing in Sweden at age 15 and followed to age 50.

Figure 1 illustrates the skewness of criminal convictions by means of Lorenz curves where Graph (a) relates to all cohort members whereas Graph (b) relates to the convicted subpopulation of offenders in these cohorts (see also Wikström, 1991). If convictions were perfectly evenly distributed among the cohort members (or convicted individuals) then the Lorenz curves would have aligned with the grey diagonal line. Clearly, this is not the case. In the male cohorts, around 40 percent of the cohort members account for all male convictions, and below five percent account for 50 percent of all male convictions.

¹ This is the dataset used in Study II.
In the female cohorts, just above ten percent of the female population account for all female convictions and close to one percent account for 50 percent of all female convictions. Turning to the convicted subpopulation of cohort members (Graph b), around ten percent of male and female convicted offenders account for 50 percent of all convictions in their respective populations.

When it comes to the relationship between age and crime, Figure 2 shows that the cohort members were most frequently convicted during their late teenage years after which there is a steady decline through the early years of adulthood and a flattening out in middle to late adulthood. While the level of frequency is much higher among the male cohort members across all age phases, the general pattern is similar across gender.

These patterns – the skewed crime distribution and the age-crime relationship – constitute parts of the foundation for influential theories in contemporary longitudinal criminological research (Soothill, Fitzpatrick, and Francis, 2013). In a broader sense, they have been pivotal for the rise of longitudinal research on crime, which in many ways emerged with the formulation of the criminal career agenda.

The Criminal Career Paradigm

The Journal of Research in Crime and Delinquency recently published a 30th anniversary special issue commemorating the 1986 publication of a two-volume report entitled “Criminal careers and Career Criminals” (Blumstein et al., 1986). The issue gathered some of the most influential criminological scholars
who contributed their respective views on the rise of the criminal career paradigm, its current state, and its future. This endorsement and the fact that the issue was published in one of the top journals in criminology indicate the lasting influence that the 1986 criminal careers report (hereafter the 1986 report) has had on criminological research in establishing a research agenda for the longitudinal study of crime.

Before moving on to the specifics of the criminal career agenda it must be recognized that the 1986 report was preceded by an earlier study, Delinquency in a Birth Cohort, which attracted a great deal of attention both in the US and internationally for stressing that a small number of offenders, the so-called “chronic offenders”, accounted for a disproportionately large amount of all the crimes that resulted in arrests in a birth cohort of 9,945 males born and raised in Philadelphia (Wolfgang et al., 1972). More specifically, Wolfgang et al. (1972) found that around 35 percent of the birth cohort had experienced a police contact by age eighteen, and that just 6 percent accounted for 52 percent of the arrests in the entire birth cohort.

The skewed nature of the crime distribution was not really a new discovery phenomenon, but as Hagan (2010) has argued, the publication of Delinquency in a Birth Cohort was very timely, coming at the beginning of a new era, which he termed “the age of Reagan”, when the crime problem, with increasing rates of violence and imprisonment, was deemed to be in need of new solutions (see also Laub, 2004). In 1980, when the Republicans took control over the House of Representatives, violent crime was at an all-time high in the US, and the crack cocaine epidemic was soon to reach its peak, thus facilitating a renewed focus on street criminality and the individual offender (Visher, 2016, see also Garland, 2001). Against this backdrop, the results from the Wolfgang et al. (1972) study were particularly promising in suggesting that a large proportion of the total volume of crime could be prevented if efforts were accurately targeted at a rather small proportion of the population, thus spurring an increasing need for knowledge on longitudinal patterns of crime.

In Sweden, Delinquency in a Birth Cohort was one of the studies utilized by Statistics Sweden in their development of recidivism and cohort statistics on crime (von Hofer, 2014), and a number of similar studies, which also showed that the crime distribution was heavily skewed, were also carried out in Sweden (Carlsson, 1975; Persson, 1976; Tham, 1979). Shortly after World War II, Sweden experienced an increasing trend in street criminality, and particularly in property-related crime (von Hofer, 2011). In contrast to the US, however, Sweden did not experience the near explosion of imprisonment rates between the mid-1970s and the early 1980s, referred to by Garland (2001) as
“mass imprisonment”, and political parties from the left to the right were more or less in agreement in their preference for a rehabilitative rather than a punitive model for crime prevention (Tham and von Hofer, 2014). Around the mid-1980s and early 1990s, the political climate changed in Sweden and more punitive measures were proposed and introduced, not least in relation to the drug problem, where the focus of the criminal justice system became increasingly directed towards the drug user (Tham, 1995). Other changes in the political discourse that indicated something of a punitive turn were an increasing focus on the victim (Tham, 2018), and on youth criminality (Estrada, 1999). The vocabulary on crime in the age of Reagan employed in both the political and academic discourse, including terms such as “the chronic offender”, was adopted by Swedish authorities and academics, although it is not clear what impact this had on Swedish crime policy (Tham and von Hofer, 2014).

Although the term criminal career had a history prior to the 1986 report, it was this report that formulated a general framework for the paradigm by setting out an agenda for future criminological research (Farrington, 2003). More specifically, the 1986 report defined fundamental concepts to be studied in longitudinal research designs and argued that this research could be of particular value to crime prevention efforts, most notably via the use of targeted intervention strategies, such as selective incapacitation. The report stated that the criminal career was “the longitudinal sequence of crimes committed by an individual offender” (Blumstein et al., 1986, p. 12). Importantly, there is no moral value induced in the scientific meaning of the term, but any person who has some detectable rate of offending during some period can be subject to the study of criminal careers (Blumstein, Cohen and Farrington, 1988). The use of the term career in this sense should not be confused with its use in relation to the means of making a living. Also, as is implied by the title “Criminal careers and career criminals”, it was important to distinguish between these terms, a distinction which resulted in some misunderstandings following the release of the 1986 report. While the “career criminal” construct was indeed derived from the general concept of a “criminal career”, this construct aimed to capture those relatively few offenders who were located in the tail of the skewed crime distribution and who “commit serious offenses at high rates and over extended periods of time” (Blumstein et al., 1988, p. 2).

An important distinction was also made between the proportion of individuals in the total population who engage in crime, that is, participation, and the rate at which the individual offender commits crime, that is, frequency – also referred to as “lambda”. It was argued that these two measures did not necessarily vary by age in the same manner. More specifically, while it was well
known at the time that the aggregate crime rate peaked during middle to late adolescence and then declined, the report suggested that individual offending frequencies may be much more stable as offenders age, and that this was one specific topic for future criminal career research. More generally, the 1986 report laid out a number of measures which would together capture the longitudinal sequence of crimes committed by the individual offender, for example by stating that the criminal career had a start (“onset”), an end (“termination”), and a period in between (“duration”). Its development could be “versatile” or “specialized” with respect to different offense types, and could possibly also “escalate” with regard to the level of seriousness. By presenting a new research agenda in criminological research, the report initiated a heated debate, known as the “Great Debate”, between its authors and proponents, such as Alfred Blumstein and David Farrington, and its opponents, most notably Michael Gottfredson and Travis Hirschi (Soothill et al., 2013).

Gottfredson and Hirschi (1986) were highly skeptical about the criminal career agenda and its wide range of concepts, and particularly the suggestion that individual offending frequencies might possibly be stable by age and thus differ from the aggregate age-crime relationship. As a reminder, the aggregate age-crime relationship essentially shows that crime tends to peak somewhere around the mid to late teenage years, after which there is a steady decline through the early years of adulthood and a flattening out in middle to late adulthood (Hirschi and Gottfredson, 1983; Farrington, 1986; Steffensmeier, Allan, Harer, and Streifel, 1989; Sveri, 1962). A few years before the 1986 report Gottfredsson and Hirschi (1983) had made the bold claim that the age-crime curve was “invariant over a broad range of social conditions” (p. 552), and could therefore not be explained by either sociological or psychological variables, which was clearly in conflict with the criminal career notion of possibly stable individual offending frequencies in need of explanation (for an overview of static and dynamic explanations for the age-crime curve, see Sweeten, Piquero, and Steinberg, 2013).

If the skewed crime distribution was the pattern that sparked the criminal career agenda, the age-crime relationship may be argued to be the pattern which laid the grounds for Gottfredson and Hirschi’s (1990) General Theory of Crime. Gottfredson and Hirschi (1990) argue that the essential nature of criminality is captured in the concept of self-control, which is relatively stable within an individual across the life span once it has been established during childhood. According to this theory, the decline in crime that comes with age to everyone is not the result of a change in individual crime propensity, or “criminality”, but instead reflects the fact that the opportunities to commit
crime decline with age. Therefore, Gottfredson and Hirschi argued, there was no need for concepts to measure the longitudinal sequence of crimes by the same individual – a long, frequent and versatile criminal career was simply the result of a low level of self-control. With regard to policy implications, they argued against the idea of intervening in adulthood, since this would not have an impact on criminality at this stage of life. Instead, they favored the idea of early intervention strategies designed to enhance socialization and parenting, since these are the social conditions presumed to be causally related to the development of self-control (for a review of the Great Debate from a “General” viewpoint, see Gottfredson and Hirschi, 2016).

The Great Debate was not restricted to the usefulness of criminal career concepts, but also focused more broadly on the usefulness of conducting longitudinal research on crime and thus on the road that the future of criminological research should take (Soothill et al., 2013). Today it is clear that this debate was won by the proponents of the criminal career approach. As Blumstein (2016) noted in the 30th anniversary issue: “the criminal career paradigm has become a major element of continuing criminological research, especially in relation to policy” (p. 300), although it may be debated in retrospect whether the 1986 report itself had any real impact on US crime policy (Visher, 2016).

In a more general sense, it is clear that the longitudinal study of crime has become the main organizing framework for the study of crime causation, or as Francis Cullen stated in his 2010 Sutherland Award address: “Life-course criminology […] now is criminology” (Cullen, 2011, p. 310), referring to the conflict that had started with the Great Debate.²

In 2012 the Division of Developmental and Life-Course Criminology was established under the American Society of Criminology, and in 2015 the Journal of Developmental and Life-Course Criminology was launched. In addition, there are a number of introductory books and anthologies that highlights the interest around the longitudinal development of crime (e.g. Blokland and van der Geest, 2017; Carlsson and Sarnecki, 2015; Liberman, 2008). At the same time, it should also be noted that some of the ideas that were formulated in Gottfredson and Hirschi’s General Theory of Crime, despite it fundamentally being a critique of the longitudinal study of crime, have had a lasting influence on both theory and methodology in longitudinal criminological research. These include the assumption that the causes for crime are general rather than specific, as adopted by Sampson and Laub (1993), the selection issue caused by persistent between-individual differences, which are often connected to the concept self-control (Nagin and Paternoster, 1991; 2000), and the promotion of early intervention practices to curb childhood risk factors (Farrington and Welsh, 2007).
Developmental and Life-Course Criminology

In its infancy, the study of criminal careers was policy-oriented and little engaged with theory (Kyvsgaard, 2002; Sampson and Laub, 2016; Sullivan and Piquero, 2016). In a paper aiming to clarify some misunderstandings resulting from the 1986 report, Blumstein et al. (1988) stated that: “The construct of the criminal career is not a theory of crime … Rather, it is a way of structuring and organizing knowledge about certain key features of offending for observation and measurement” (p. 4). Traditionally, the study of criminal careers has therefore been very much a descriptive and quantitative field of research, with common research questions such as: When do offenders begin their criminal careers, how long is the typical criminal career, and what types of crimes does it typically include?

In his 2002 Sutherland award address, David Farrington, summarized a number of widely accepted conclusions drawn from longitudinal research on crime. For example, the prevalence of, or participation in offending peaks in the late teenage years, an early age of onset predicts a relatively long criminal career duration and the commission of a relatively large number of offenses, that there is a strong association between past and future offending behavior, and offending tends to be versatile rather than specialized (Farrington, 2003; see also DeLisi and Piquero, 2011). Importantly, Farrington (2003) suggested that any theory developed to explain these criminal career patterns could be included under the umbrella of Developmental and Life-Course Criminology (hereafter DLC). In essence, DLC is concerned with three broad orientations: the development of offending and antisocial behavior, risk factors at different ages, and the effects of life events on the course of development (p. 221).

A dichotomy that is commonly used within DLC to capture on the one hand the strong association between past and future, and on the other the decline in offending tendencies that most offenders experience with age is “persistence in crime” and “desistance from crime”. While the study of criminal careers had previously been almost entirely focused on describing the longitudinal sequence of crime in an event-based fashion (e.g. with the last offense marking the termination of the criminal career), these dichotomies have often been used to highlight a processual view of the longitudinal sequence of crime. For example, Maruna (2001) has argued that the criminal career does not simply end at a distinct point in time, and that desistance from crime should rather be seen

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1 Indeed, the 1986 report itself stated that: “While not a theory itself, the construct of the criminal career should prove to be very valuable for the development of theory” (Blumstein et al., 1988, p. 4).
as a maintenance process: “the long-term abstinence from crime among individuals who had previously engaged in persistent patterns of criminal offending” (p. 26). Such a processual view has partly developed in tandem with a qualitative and deepened understanding of the criminal career in which the “why-question” has in part been replaced by the “how-question” (see also Carlsson, 2014).

While the criminal career was organized around the longitudinal sequence of crime committed by the individual offender, it is important to note that DLC theories also concern the development of antisocial behavior. Although it is not entirely clear, one could argue that antisocial behavior is a more abstract concept than offending, and thus that offending is one aspect of antisocial behavior. This is obvious when working with a legal definition of crime, since individuals below the age of criminal responsibility in a given judicial context cannot be regarded as criminals in a legal sense. Understanding the origins of delinquency therefore necessitates a consideration of “antisocial behavior that is outside the realm of the law” (Rutter, Giller, and Hagell, 1998, p. 1; see also Loeber and Le Blanc, 1990; Moffitt, 1993). For example, one branch of developmental studies focuses on the early years of life and measures the onset of antisocial behavior by means of clinical diagnoses, such as conduct disorder (e.g. Tremblay, 2013). The age-graded aspect of antisocial behavior has been highlighted by Moffitt (1993) and the concept of “heterotypic continuity”: “biting and hitting at age 4, shoplifting and truancy at age 10, selling drugs and stealing cars at age 16, robbery and rape at age 22, and fraud and child abuse at age 30; the underlying disposition remains the same, but its expression changes form as new social opportunities arise at different points in development” (p. 679). There may also be certain disparities between the concept of antisocial behavior and a legal definition of crime such that particular types of crime are not usually the ones that developmental and life-course theories are directed at explaining. This is the case for example with minor traffic and tax offenses (Farrington, 2003).  

Having said this, the legal definition of crime appears to be relatively well aligned with what DLC theories should be designed to explain. As Farrington (2003) has noted “‘Offending’ refers to the most common crimes of theft, burglary, robbery, violence, vandalism, minor fraud and drug use, and to behavior that in principle might lead to a conviction in Western industrialized societies

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4 It may also be noted that while white-collar crime has not been a typical focus of developmental and life-course criminology, there has been a growing interest in also studying the longitudinal sequence of these types of antisocial and criminal behavior (e.g. DeLisi et al., 2018).
such as the United States and the United Kingdom. These theories should explain results on offending obtained with both official records and self-reports” (p. 223). Indeed the main bulk of developmental and life-course research has used administrative data on arrests or convictions to track individual offending behavior, and particularly those studies that concern themselves with offending beyond the juvenile years. As Bushway and Tahamont (2016) have argued, it may in this sense be more accurate to speak of the estimation of “criminal justice careers” (p. 375). It must of course be emphasized that official crime records capture both the behavior of the individual and the behavior of the criminal justice system, an issue which I will discuss in more detail in the methods section.

From a methodological point of view, Bushway and Tahamont (2016) have observed that at the time of the 1986 report there were two main hurdles to analyzing change in individual offending frequencies: a lack of individual-level longitudinal data and a lack of analytical models for studying within-individual change over time (p. 373). As time has passed, longitudinal criminological research has progressed in these two respects. There are now a number of well-known longitudinal datasets which follow individuals into adulthood on the basis of crime data, such as the Cambridge Study in Delinquent Development (Farrington et al., 2013; West and Farrington, 1977), the Dunedin Multidisciplinary Health and Development Study (Beckley et al., 2016; Poulton, Moffitt, and Silva, 2015), and Sampson and Laub’s (1993; Laub and Sampson, 2003) update of the classical Glueck study (Glueck and Glueck, 1950). In Sweden, there are two particularly influential longitudinal datasets that have been used to study the longitudinal sequence of crime and its correlates: the Stockholm Birth Cohort Study (Andersson, Levander, Svensson, and Torstensson-Levander, 2012; Estrada and Nilsson, 2012; Kratzer and Hodgins, 1999; Wikström, 1990), and the Individual Development and Adaptation Study (Bergman and Andershed, 2009; Corovic, Andershed, Andershed, and Collins, 2014). There are also a number of modeling approaches available for analyzing within-individual continuity and change in crime, which has certainly served to stimulate increasing interest, and also a number of controversies, in DLC (see Bushway, Brame, and Paternoster, 1999; Kreuter and Muthen, 2008).

One clear benefit of incorporating a number of different research traditions and disciplines into an interdisciplinary field such as DLC is that it may bring together scholars and ideas, which would otherwise not meet, in efforts to understand complex phenomena such as criminal offending. Indeed, Farrington (2003) has noted that DLC incorporates a number of previous research fields,
such as criminal career research and risk factor prevention research “in the hope of including everyone” (p. 222). Whether explicitly formulated as DLC research or not, a lot of empirical research surrounding the development of offending has certainly been carried out across the world since David Farrington’s presidential address, and in line with his suggestions many of these studies have also been formulated with a focus on theoretical controversies within the field (see DeLisi and Piquero, 2011). The two theories that have probably been most highlighted, and contrasted, in this respect are Moffitt’s (1993) Dual Taxonomy and Sampson and Laub’s (1993; Laub and Sampson, 2003) General Age-Graded Theory of Informal Social Control.

Two influential and rival theories of continuity and change in crime

As has been described above, one of the well-established criminal career patterns is that there is considerable continuity in offending over the life course, a pattern which has also been expressed in terms of their being a positive association between past and future offending (Nagin and Paternoster, 1991; 2000). Before moving on to present two rather complex theories aimed at explaining this association, it may be useful to consider a simplified model. Nagin and Paternoster (1991; 2000) have argued that theories aimed at explaining the association between past and future offending may broadly be categorized under the headings state dependence or population heterogeneity. These processes are illustrated in Figure 3.

The state dependency model posits that there is a causal effect of prior involvement in crime on further participation in crime, with the state dependence process being one of “contagion in which an offender’s current activities make their life circumstances worse, accelerating the probability of future crime” (Nagin and Paternoster, 2000, p. 118). This process is exemplified in Graph (a) in Figure 3 where continuity in crime is sustained through a lowering of informal social control, such as dropping out of school in adolescence and having low- to no attachment to the job market in adulthood. Criminal involvement may, according to this model, be seen as both an outcome and as an important explanatory factor for future crime. As labeling theorists have emphasized, this may particularly be the case if deviant behavior is followed by a response from the criminal justice system (Becker, 1963).

In contrast, the population heterogeneity model attributes continuity in offending to time-stable individual traits or characteristics that are established
early in life. As depicted in Graph (b) in Figure 3, when this persistent criminal propensity has been established, during early infancy or in childhood, it causally affects crime at any subsequent age, which implies that the association between past and future offending is spurious. Note that every “life failure” which, in the state dependency model, were seen as explanatory factors for crime, are now understood as outcomes of persistent traits.

Figure 3. Two rival models of continuity in crime. Explanatory factors in squares and outcomes in circles.

(a) A state dependency model

(b) A population heterogeneity model

The state dependence and population heterogeneity models have also been referred to as the “kinds of context-argument” versus the “kinds of people-argument” (Laub and Sampson, 2003, p. 24), or “Life-course theories” versus “Latent trait theories” (Simons, Johnson, Conger, and Elder, 1998). These perspectives are ideal-typical, in the Weberian sense of the term, because few would probably claim that individual behavior is unaffected by the individual’s surroundings or, alternatively, by internal driving forces. Nevertheless, this framework is useful in that it contrasts differences in emphasis among
theories on the association between past and future offending (Blokland and Nieuwbeerta, 2010; Ezell and Cohen, 2005; Piquero, Brame, and Moffitt, 2005). It also highlights the fact that one cannot assess the impact of either one of these processes without taking the other into account.\(^5\)

**Moffitt’s Dual Taxonomy**

In her seminal article entitled “Adolescence-limited and life-course persistent antisocial behavior: A developmental taxonomy”, Moffitt (1993) addresses continuity and change in offending and antisocial behavior by essentially suggesting that these two processes have different origins. Continuity and change in offending are a matter of belonging to either an adolescence-limited group or a life-course persistent group, “each in need of its own distinct theoretical explanation” (p. 674). In essence, this dual taxonomy is designed to explain the robust association between past and future offending (i.e. continuity), and the well-established aggregate age and crime curve (i.e. change). Hence, continuity is accounted for by the theory of life-course persistence, while change is accounted for by the theory of adolescence-limited offending.

Life-course persistence is a feature that characterizes a small and distinct group of maladaptive individuals who begin their antisocial path early in life and continue it well into adulthood. The stability of their antisocial behavior is due to traits developed in early infancy, or even prenatally, and which in interaction with an often criminogenic environment cause offending across the entire life span. While not specifically specifying a concept for the individual deficit presumed to cause life-course persistence, Moffitt (1993) notes that it is located in the central nervous system, and may be linked to a disruption in the ontogenesis of the fetal brain (p. 680). This resonates well with the population heterogeneity argument, in that the root causes of persistent antisocial behavior are fundamentally a matter of stable between-individual differences.

However, the theory also posits that there are social components involved in life-course persistence. For one thing, Moffitt notes that children with neuropsychological deficits are generally not born into supportive environments,

\(^5\) For example, the population heterogeneity model highlights the fact that exposure and outcome may be confounded by a common factor, and this is indeed what Gottfredson and Hirschi (1990) have argued, i.e. that the association between past and future offending is caused by between-individual differences in the level of self-control. An awareness of this methodological issue and the parsimony of the theoretical argument posited by Gottfredson and Hirschi may be one of the reasons why the theory of self-control has remained attractive despite having “lost” the Great Debate (Soothill et al., 2013).
and that there is an intergenerational component to neural development which is in turn linked to maternal health, malnutrition, and drug abuse. Further, the theory also opens up for a state dependency like process whereby the behavior of the life-course persistent individual tends to be exacerbated by interactions with the individual’s social environment, a process that Moffitt terms “cumulative continuity”. For example, teenage parenthood, drug addiction, school dropout, job failure and incarceration are experiences which mean that life-course persistent antisocial behavior is “supported by narrowing options for conventional behavior” (p. 684).

The second part of the Dual Taxonomy – the theory of adolescence-limited offending – sets out to explain why so many teenagers engage in normative delinquency during youth but then desist from crime in connection with the transition to adulthood. Hence, this is the theory aimed at explaining the age-crime relationship. In contrast to the theory of life-course persistence, the root causes of adolescence-limited offending are essentially social, with the main mechanism being the so-called “maturity gap”. In essence, the maturity gap refers to the way in which adolescents enter into biological maturity, often indicated by puberty, at a time when they are unable to acquire adult status. This gap causes adolescents to become involved in antisocial behavior as a means of achieving maturity status, “with its consequent power and privilege” (p. 686). The onset of antisocial behavior among adolescence-limited youth is a process of “social mimicry” in which the early-onset, life-course persistent delinquents become the role models for achieving maturity status. Further, adolescence-limited antisocial behavior may become “reinforced”, for example by provoking responses from the adult world and by damaging the quality of the intimacy between adolescents and their parents, since these serve as additional resources for cutting childhood bonds and thus achieving maturity status. As adolescents age, the gap between biological and social maturity begins to close and adolescence-limited offenders gradually transition to adulthood status, which results in a decline both in the aggregate age-crime relationship and in the within-individual development of offending for this normative group of offenders.

The Dual Taxonomy certainly reflects some of the tensions surrounding the criminal career agenda. The arguments put forward by Moffitt are well in line with the 1986 report in stressing the importance of distinguishing between participation and individual offending frequencies. More specifically, the Dual Taxonomy suggests that the aggregate age-crime curve is mainly a matter of participation and obscures the small group of individuals for whom there is no downward trend in the frequency of offending and antisocial behavior.
This is in contrast to the argument put forward by Gottfredson and Hirschi (1986), who argued that participation and frequency captured the same development by age. At the same time, the theory of life-course persistence has, in a similar way to Gottfredson and Hirschi’s (1990) General Theory of Crime, been closely associated with population heterogeneity theory because of its strong emphasis on stable between-individual differences in accounting for continuity in crime (see Nagin and Paternoster, 2000). Hence, both of these theories imply a strong and direct causal connection between childhood risk and the unfolding of crime in adulthood.

Sampson and Laub’s General Age-Graded Theory of Informal Social Control

Sampson and Laub (1993; Laub and Sampson, 2003) depart from a general perspective by positing that the same mechanisms account for both stability and change in criminal offending. Their integrated theory combines a number of classical criminological theories including social control, routine activity theory, and labeling theory. A central point they make is that most classical criminological theories have focused on explaining why some individuals become delinquents and not others, when observations from longitudinal criminological research suggest that most of those who are involved in delinquency during their youth go on to live conventional, crime-free lives in adulthood (Sampson and Laub, 1997).

The age-graded notion suggests that social institutions play different roles across the life span: the school and parents produce informal social control during the juvenile years whereas employment and marriage are important social institutions during adulthood. Although Sampson and Laub acknowledge that childhood vulnerability is related to subsequent offending, they are strongly opposed to the population heterogeneity notion that offending in adulthood is a matter of selection on childhood risk factors. Instead, life events in adulthood have an effect on subsequent crime net of childhood risk. In accounting for continuity in crime, Sampson and Laub (1997) suggest, in line with the state dependency argument, that criminal behavior and criminal sanctioning may trigger subsequent crime through a process of “cumulative disadvantage”. Their notion of cumulative disadvantage implies that the effects of criminal behavior and criminal sanctioning on recidivism are most likely to be indirect in that they undermine the individual’s bonds to the conventional society, which in turn increases the risks of becoming involved in crime once
more. In addition to the unfavorable effects of criminal behavior on this development, Sampson and Laub emphasize the stigmatizing consequences of labeling, and thereby the role of the criminal justice system in processing offenders.

Although Laub and Sampson (2003) acknowledge that there are high-rate offenders who continue with a criminal lifestyle over a substantial portion of their lives, they have, in connection with their latest follow-up of the Glueck study, come to argue that desistance from crime is the norm. In this sense, they strongly emphasize the downward trend in the age-crime relationship, which they argue is something that neither a pure population heterogeneity theory nor a pure state dependency theory is able to account for. Laub and Sampson’s (2003) solution is to suggest that the life course may to a substantial degree be described as a random process, and that events that happen earlier or later, such as meeting a future spouse, may have the capacity to redirect a troubled past even for the most hardened offender. The notion of “turning points” in the life course is in this respect a fundamental concept in their theory. The mechanisms involved in turning points are largely hypothesized to be a matter of “knifing off” an antisocial past, and the emergence of various means for investment in prosocial relationships, the introduction of new routines and opportunities, and essentially the transformation to a new prosocial identity. This transformation is partly one of conscious decision making, and purposeful “human agency”, but is also to substantial degree a matter of an unconscious process whereby individuals eventually find themselves in a new situation in which they have invested so much time and resources that it becomes irrational to turn back, a process that Laub and Sampson have conceptualized as “desistance by default” (p. 278).

In a broader sense, Sampson and Laub have been deeply inspired by the life-course paradigm (Elder, 1994; Elder, Johnson, and Crosnoe, 2003). While “career research”, including that of criminal careers, has in part been criticized for being preoccupied with the description and measurement of its own central construct (Elder et al., 2003), Sampson and Laub have argued for a view that sees crime as merely one of many facets of the life course (see also Nilsson, Bäckman, and Estrada, 2013). Citing Elder (1994), the life-course refers to “the interweave of age-graded trajectories, such as work careers and family pathways, that are subject to changing conditions and future options, and to short-term transitions ranging from leaving school to retirement” (p. 5). Hence, to understand continuity and change in crime across the full life course, in Sampson and Laub’s view, it is not enough to consider the distant past, since it is also important to consider those proximate circumstances preceding
the criminal event relatively close in time. This has placed Sampson and Laub among those who have advocated a shift in the focus of longitudinal criminological research from early life and adolescence to adulthood. At the same time, it should be noted that the generality assumption of their theory resonates well with that of Gottfredson and Hirschi, and contrasts with the position held by the 1986 report that different theories may be needed to account for different parameters of the criminal career.

Developmental versus Life-Course Criminology

Although the field of DLC has been described as an interdisciplinary research field with the explicit purpose of comparing DLC theories in order to bring “consensus about key elements that should be included in any DLC theory” (Farrington, 2003, p. 222-223), the controversy between Moffitt and Sampson and Laub is broader in scope and may be argued to also relate to a conflict in research designs and methods between a developmental perspective and a life-course view (see also Skardhamar, 2010a). In an article entitled “A life-course view of the development of crime”, Sampson and Laub (2005) have described what they see as three main issues of contention in “the developmental paradigm”: (1) the assumption that there are developmentally distinct groups of offenders with unique etiologies, (2) the role of turning points, and (3) the overlooked importance of human agency. In addition, Sampson and Laub (2016) have also presented a number of reflections on the future of life-course criminology in the journal issue commemorating the 30th anniversary of the 1986 report, which may be summarized into a fourth point in which they essentially argue for a stronger emphasis on the linkage between individuals and socio-historical developments. In the following, I briefly address these issues in an attempt to capture the distinction between the developmental perspective and the life-course view on conducting longitudinal criminological research.

As was mentioned previously, one fundamental principle of Sampson and Laub’s perspective is that crime is a general phenomenon which can be meaningfully understood within a single theoretical framework. This is not to say

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6 While it is not entirely clear whether Sampson and Laub’s notion of developmental criminology constitutes a criticism of Farrington’s (2003) formulation of DLC, they have certainly been highly critical of various longitudinal criminological studies that have followed the path outlined by Farrington.

7 These issues have in part been responded to, or elaborated on, by Moffitt (2006; 2018), but the life-course critique is also relevant to contrast against other proponents of a developmental perspective on crime, such as Loeber and Le Blanc (1990; Le Blanc and Loeber, 1998).
that the specific factors that are causally related to crime are the same for everyone at every stage of life, but rather that there are few grounds for assuming developmentally distinct groups of offenders that require separate explanatory models. However, this latter alternative is basically the assumption that has, more or less consciously, been made in numerous empirical studies that have followed the publication of Moffitt’s Dual Taxonomy. In large part, the life-course critique is directed at the tendency to employ data-driven methods with the purpose of testing the Dual Taxonomy, most notably in the form of the semi-parametric group-based trajectory methodology developed by Nagin and Land (1993).

In short, the group-based method assumes a discrete rather than a continuous underlying distribution of the ways in which crime varies by age, and thereby also makes it possible to estimate the number of trajectories that fit the data structure of a given dataset (Nagin and Tremblay, 2005). It follows that the studies that have adopted the group-based method have also identified distinct trajectories, some of which display an early onset followed by a relatively high and stable offending frequency, often labeled “high-rate persisters”, with others displaying a later onset and a subsequent development that in large part follows the typical age-crime curve, sometimes labeled “low-rate desisters”, and yet others which may display some variation of these two (see Piquero, 2008). There are also studies that have extended the analysis and compared these trajectories in relation to childhood risk factors, and that have found the persistent group to score significantly higher on most of the factors presumed to cause life-course persistence, ranging from individual factors such as hyperactivity, cognitive deficits and a difficult temperament to environmental factors including maltreatment and poverty (see Moffitt, 2006). In a review commemorating the 25th anniversary of the Dual Taxonomy, Moffitt (2018) stated that “[s]ince the advent of group-based trajectory modelling methods, the existence of trajectory groups fitting the LCP and AL taxonomy has now been confirmed by reviews of more than 100 longitudinal studies” (p. 180).

Criticisms of this conclusion have focused inter alia on three central factors; first, a model cannot be said to discover what it assumes (Raudenbush, 2005; Sampson, Laub, and Eggleston, 2004; Skardhamar, 2009), second, distinct trajectories may also result from the mechanisms predicted by general theories (Skardhamar, 2010b; Walters, 2011), and third, the number of estimated groups is sensitive to the data under study, for example the length of the follow-up period and the use of censoring (Eggleston, Laub, and Sampson, 2004). It may be added that longitudinal studies which have employed the
group-based method have most often estimated more than the two groups hypothesized by the taxonomic theory (see Piquero, 2008). More generally, this methodological issue may be summarized in terms of a conflict between the adoption of data-driven or theory-driven research designs, with the life-course view, as defined by Sampson and Laub (2005), arguing for the theory-driven approach. For example, with respect to the testing of typological theories, they argue that if groups are valid, then they ought to display distinctiveness in trajectories based on the criteria presumed to cause them, which by extension is an argument for a prospective approach to the prediction of life-course persistence (Laub and Sampson, 2003).

The second issue, as manifested in relation to Sampson and Laub’s (2005) life-course view, relates to how turning points should be reconciled with developmental theory. Here it is important to recall that one of the main conclusions of Laub and Sampson’s (2003) most recent follow-up of the Glueck study is that desistance from crime is the norm, even for those groups of delinquents with the most troubled pasts. This is a phenomenon, they argue, that any theory aimed at explaining crime across the life course needs to account for, and that neither pure population heterogeneity models nor pure state dependency models are able to do. Their own solution to this issue is to incorporate the notion of randomness into the life-course, essentially captured by the conceptualization of turning points. While the Dual Taxonomy allows for the kind of change that narrows the options for a prosocial life among persistent offenders, Sampson and Laub argue that it does not allow for positive change, which they claim is the norm among all groups of offenders.

With respect to crime, the disagreement has concerned what a trajectory should look like to indicate persistence. While Moffitt (2006) has argued that her theory does not predict a flat rate of crime, like that of a “straw man”, but rather one that is characterized by a high-rate compared to the average, Sampson and Laub (2005) maintain that a flat rate trajectory is what they and many others have interpreted as being predicted by the theory. Moreover, they argue, if groups merely differ in their rate, and not in the overall shape of their trajectories, the differences between them may equally well be interpreted as being one of degree rather than kind, which would undermine the evidence for the fundamental assumption of the typology (p. 19).

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8 For example, the theory of life-course persistence posits that early individual traits may “set in motion a downhill snowball” through adulthood, including failure in the job market and in prosocial relationships, which may lead the young delinquent to in part become “ensnared in a deviant life-style by crime’s consequences” (Moffitt, 1993, p. 683).
In a broader sense, the controversy around life-course persistence is conceptual and concerns the distinction between antisocial behavior and crime. From the moment she formulated her theory, Moffitt (1993) has emphasized that it is intended to explain of antisocial behavior across the life course, and that crime is merely one expression of this type of behavior. As such, the antisocial lifestyle, or “heterotypic continuity”, of life-course persistent offenders may simply change its form with advancing age, and may in later adulthood instead comprise substance abuse, intimate-partner violence and workplace deviance. In a similar manner, Loeber and Le Blanc (1990; Le Blanc and Loeber, 1998), argue that deviant manifestations may change while the underlying propensity for deviance remains stable. In her recent review of evidence for the taxonomy, Moffitt (2018) also noted that mid-life follow-ups suggest that life-course persistence often culminates in hospitalization, sickness disability and premature mortality, and that many also end up incarcerated, thus “selectively removing LCP offenders from criminal record data” (p. 181). More generally, while Moffitt appears to have become increasingly skeptical about the use of official crime records for the analysis of antisocial behavior and offending across the life course (see also Loeber and Le Blanc, 1990; Le Blanc and Loeber, 1998), Sampson and Laub (2016) have maintained the importance of the use of criminal records for future life-course criminology, for example by arguing that the ways in which government policy, including criminal justice policy, may shape life-course trajectories is an underdeveloped area in longitudinal criminological research.

Third, and in line with one of the fundamental principles of life-course research, Laub and Sampson have emphasized that individuals are not simply passive receivers of risk, irrespective of whether this risk is due to neuropsychological deficits or social factors, but rather that they construct their own lives within the opportunities and constraints determined by society (see Elder et al., 2003). More specifically, in their life-history interviews with a subsample of the Glueck men, they discovered that these men often spoke about both the decision to persist in a criminal lifestyle and the decision to go straight in a relatively conscious and calculated manner. For example, the accounts relating to persistence were often coupled with notions of defiance against authorities and the seductive rewards of crime, whereas accounts of desistance were coupled with perceptions of a future self as that of a hard-working family man and a good provider.

Sampson and Laub have argued that this view that persistence in and desistance from crime are not only about the absence or presence of risk, but also
about perceptions and human decision making, is largely missing from developmental research. Further, this issue again bears a methodological component in that the incorporation of human agency into their theory was stimulated by their mixed-methods approach, which combined quantitative data with life-history narratives. As was mentioned previously, the use of qualitative methods is one of the developments that has occurred since the rise of the criminal career paradigm and that has deepened our understanding of the criminal career (Carlsson, 2014; Maruna, 2001).

The fourth and final issue concerns the linkage between historical and individual development. Sampson (2015) recently stated that, “[d]evelopmental approaches to the study of crime in particular continue to operate from a largely social-psychological view where individual dispositions are the dominant focus and major social changes or structural contexts are merely backdrop” (p. 280). While historical context was also a backdrop in Sampson and Laub’s theorizing of continuity and change in crime, particularly in the original formulation of their age-graded theory (Sampson and Laub, 1993), it appears to have moved increasingly to the forefront of their life-course view (see also Bäckman, Estrada, Nilsson, and Shannon, 2014).

In reflections made in the journal issue commemorating the 30th anniversary of the 1986 report, Sampson and Laub (2016) suggested that “research is needed on how broad societal changes such as the precariousness of labor markets, increasing inequality, the technological revolution, declines in violence, and the decline in marriage may be changing the context of development, a key point of emphasis in the life-course perspective” (p. 328). For example, with respect to marriage, which is one of the turning points they had previously emphasized, the significance of this social institution has changed during the period between the early adulthood of the Glueck men in the 1950s and the present day, which in turn raises the question of what this historical development may mean with regard to the capacity of marriage to

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9 It should be noted that in the recent journal issue commemorating the 30th anniversary of the 1986 criminal careers report, Sampson and Laub (2016) appear to have shifted somewhat in relation to their previous emphasis on the importance of human agency. This is perhaps not so much a shift in principle as in practice. More specifically, Sampson and Laub (2016) have become skeptical about the use of narratives “to try and get inside the minds of offenders in order to theorize human ‘agency’ and ‘identity’” and further state that “while interesting and often fruitful in the inductive discovery of possible mechanisms, offender-given reasons for committing crime (or stopping crime) are not in themselves dispositive. If they were, we would not need criminologists” (p. 330). In relation to previously hypothesized mechanisms of identity change, this implies a stronger emphasis on desistance by default, and a view that the behavior of individuals may precede their transformation of identity rather than the reverse.
redirect a criminal lifestyle. In a related point, they also suggested that insufficient recognition has been given to the way in which life-course trajectories may be shaped by government policy, here referring mainly to how the explosion in the use of imprisonment in the US since the 1980s may have shaped the life courses of successive cohorts who grew up during the period in which these historical developments took place (see also Hagan and Dinovitzer, 1999).

It should finally be noted that while the Dual Taxonomy is often associated with the theory of life-course persistence, particularly in empirical research (see Moffitt, 2006), it is less well-recognized that historical context constitutes one of the main levels of explanatory abstraction in the theory of adolescence-limited offending. This is seen, for example, in the role of the maturity gap and a delayed transition into adulthood in explaining the shape of the age-crime relationship. Indeed, in her recent review of the taxonomic theory, Moffitt (2018) noted that more research is needed into the predictions made by the adolescence-limited theory, particularly against the backdrop of the decline in youth crime that has been witnessed in many Western nations over recent decades (p. 183). Hence, the linkage between individual and historical developments may indeed be an avenue for future research from both a developmental perspective and a life-course view, although their emphasis in this area will probably differ.
The skewed crime distribution and the age-crime relationship have been pivotal for the rise of longitudinal research on crime. The controversy around how to explain these patterns is, essentially, rooted in different theoretical underpinnings and perspectives of continuity and change in crime across the life course. The overarching aim of the current thesis is to contribute to this debate by extending empirical knowledge on longitudinal patterns of crime. In this respect the thesis has a strong focus on knowledge gaps in the developmental and life-course literature on crime, particularly when it comes to the significance of adulthood, gender, and birth cohort membership. The specific aims of the four studies, which are presented in more detail below, were to explore: (1) the long-term predictive value of childhood risk factors for persistent offending in adulthood, (2) the magnitude of adult-onset offending, (3) the predictive value of gender for criminal recidivism, and (4) the association between birth cohort membership and criminal career parameters.
Methods

The four studies included in the thesis employ longitudinal data and methods to analyze the development of crime over the life course. Study I uses a mix of quantitative and qualitative methods (i.e. mixed methods) in examining the predictive value of childhood risk factors for offending in adulthood. The data employed in this study is the so-called 1956 Clientele Study of Juvenile Delinquents which is part of a longitudinal project conducted at the Department of Criminology at Stockholm University, the so-called Stockholm Life Course Project (Carlsson and Sarnecki, 2015). Studies II-IV use Swedish population-based administrative data. The data employed in these studies are drawn from two other longitudinal research projects at the Department of Criminology at Stockholm University, which concern structural opportunities and constraints in the life course (Bäckman et al., 2014), and the inequality of the crime drop (Nilsson, Estrada, and Bäckman, 2017).  

This chapter first describes Swedish longitudinal administrative data, with a focus on the Swedish convictions register, and their relevance for analyzing patterns of crime across different phases of the life course. A common methodological feature of the four studies, which is characteristic of Nordic register-based research in general, has been the possibility to link every individual in the selected study population to several different administrative registers (see Lyngstad and Skardhamar, 2011). Next, I provide a brief description of the 1956 Clientele Study of Juvenile Delinquents, and particularly its relevance for analyzing how the life course may develop for a sample of troubled youth. Next, I consider methodological choices made with regard to the use of administrative register data and the longitudinal methods employed. Finally, I consider ethical issues surrounding the studies included in the thesis.

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10 For an overview of the three research projects, see https://www.criminology.su.se/english/
Swedish administrative data for criminological research

All four studies in this thesis utilize Swedish convictions data to measure criminal behavior. In addition, the population register (Registret över totalbefolkningen, RTB) has been used to select the desired birth cohorts (i.e. study population) in three of the studies (Studies II-IV), and the mortality register (Studies I-IV) and migration register (Studies II-IV) have been used for censoring purposes. The fundamental basis of register-based research in Sweden, in line with the other Nordic countries, is that all residents in Sweden have a personal identification number. This ten-digit number is given to the individual by the tax authority on the day that the individual becomes registered as a resident of Sweden and it is based on the individual’s birth date and an additional four-digit number. This identification number is used by Swedish authorities for administrative purposes, and for research purposes it also facilitates the linkage of information from a multitude of registers to a single individual. In order to follow legal regulations and ethical standards, the authority that handles the request to provide data to the researcher (usually Statistics Sweden) generates an anonymized pin code on the basis of the personal identification number. The researcher can then create a research database by merging different registers to a selected study population without disclosing individual identities.

All four studies in this thesis have required data management in the form of selecting the desired study populations (e.g. individuals born during a specific year and residing in Sweden at age 15), reorganizing data structures (e.g. from event structure to individual structure), and the merging of data (e.g. linking individual crime data from the convictions register to the population register).

Studies II-IV are based on birth cohorts of individuals from the population who were resident in Sweden at age 15 (or 16 in Study III). The Swedish population is defined as those who are residing in Sweden on 31st December of a given year. It should be noted that this definition does not include all individuals who are present in Sweden and that there are substantial numbers of individuals who are present in the country on a temporary basis (for less than one year) in one form or another. These groups include tourists, citizens from the EU who are in Sweden to work or study without having to apply for visas.

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11 It should be noted that Swedish administrative crime data also comprise data on crime suspects and incarceration data. However, these registers have not been available in the research projects in which the four studies in this thesis have been conducted. In this section I therefore focus on the convictions register, although it should be noted that for other research purposes it may be relevant to use data on crime suspects or incarceration data.

12 For information on the potentials of Swedish register-based research, see www.registerforskning.se
and refugees and other immigrants who are seeking residency permits or staying in Sweden illegally. While these groups do contribute to the official crime statistics, which include both residents and non-residents, they are not part of the analyses in this thesis.

Mortality is an event in the life course that has been discussed in the context of criminal careers to some degree (e.g. Laub and Sampson, 2003). The current thesis does not explicitly deal with the question of the relationship between crime and mortality (e.g. how crime is linked to the risk for mortality) but information on mortality has been used for censoring purposes. This links into the discussion on “false desistance”, that is, when the non-conviction of a given individual over some given period of time is simply a matter of this individual being deceased (Kazemian, 2007). Another event in the life course that is also linked to this same discussion, but which has been given significantly less emphasis in the criminal career literature, is migration. Importantly, both mortality and migration become more prevalent the longer the follow-up period employed by a longitudinal study, and it has also been shown that individuals with a history of crime are at higher risk of premature death than the general population (Elonheimo, Sillanmäki, and Sourander, 2015). It is therefore particularly relevant to consider mortality and migration in the context of this thesis, since the four studies follow convicted individuals over a considerable part of the life span.

Since Swedish convictions data constitute the fundamental source for the measurement of criminal behavior in this thesis, they require a thorough description. The Swedish convictions register is a population-wide and event-based register that contains every criminal conviction from 1973 to present day. Figure 4 illustrates the criminal justice process from the point at which a crime is committed to the point at which it results in a conviction. The black arrows illustrate the flow that has to be successful for the crime to be included in the convictions register, and the stacked boxes illustrate situations at different stages of the criminal justice process that lead to criminal events not being included in the convictions register. The filled grey boxes represent different types of convictions. As in many other judicial systems, the three main justice system agencies are the police, the prosecution authority and the courts, and

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13 This model shows a broad view of the criminal justice process as it has looked from 1973 to present day. It should be noted that in a more detailed sense this process is much more complex, for example with regard to the different possible outcomes, and that during this time there have also been certain changes in this process. The idea of the model is to illustrate what constitutes a conviction in the Swedish judicial context and not to conduct a thorough evaluation of every stage in this process.
the criminal justice process is in many respects a reciprocal one among these agencies, as is illustrated by the two-sided arrows. For example, the preliminary investigation of a crime is often initiated and led by the prosecutor although the collection of information surrounding the criminal event is conducted by the police, and it is the prosecutor who works to represent the state in criminal proceedings if the criminal case is taken to court.

Figure 4. A schematic view of the process from crime to conviction in the Swedish justice system.

As can be seen from Figure 4, a crime can result in a conviction both at the level of the prosecutor and of the court. If a prison sentence is not the typical outcome on the basis of the penal code, the prosecutor can choose to issue a summary sanction order or a waiver of prosecution. A waiver of prosecution is often given to individuals who are below the age of 18 and who have no history of recorded crime. Importantly, for the prosecutor to issue a waiver of prosecution or a summary sanction order, there cannot be any uncertainty with regard to the guilt of the suspect, which in practice means that the suspect has to admit having committed the crime. The next form of conviction is a court adjudication of guilt, on the basis of which the court must then determine the type of sanction. These sanctions may broadly be categorized into non-custodial/conditional sentences, custodial/prison sentences, and fines.

Swedish police and prosecutors are bound by the legality principle, which means that they are required to report all offenses that come to their attention, and that there are no legal grounds for the use of discretion in the handling of the criminal offenses during this phase of the criminal justice process (von
Hofer, 2014). The Swedish police only have a sanctioning mandate in relation to the imposition of fines for certain minor traffic offenses such as speeding, and as shown in Figure 4 these crimes are not included in convictions data. While convictions data may generally be characterized as a “back-end” measure in the criminal justice process (Nygaard Andersen and Skardhamar, 2017), it should be recalled that convictions in the Swedish context also include sanctions at the level of the prosecutor (i.e. waivers of prosecution and summary sanction orders). Indeed, waivers of prosecution and summary sanction orders comprise around 15 percent and 35 percent respectively, i.e. a total of half, of all convictions in the convictions register from 1973 to present day. With the exception of minor offenses sanctioned by the police, Swedish convictions data therefore have a relatively high degree of coverage in relation to the number of offenses committed (von Hofer, 2014). It may also be noted that, in contrast to comparable countries such as the US, there is no youth court system in Sweden, and sanctioning decisions relating to both juveniles and adults are made by the same courts (Sarnecki, 2017). Moreover, the convictions register contains detailed information on the types of crimes included in the conviction, the sanction imposed, the length of a prison term, the date of conviction, and the date of the crime. The convictions register thereby provides a number of choices with regard to the measurement of crime which I discuss below in the section on methodological considerations.

Generally, conviction records may be said to capture offenders who have committed several offenses, and/or serious offenses, and/or traditional person- and property-oriented offenses (Kyvsgaard, 2002). In this sense, convictions data capture quite well those offenders and offenses which developmental and life-course theories of crime are intended to explain (see Farrington, 2003). In contrast to panel surveys, convictions data are subject to negligible issues with regard to attrition, and they also facilitate the measurement of both the timing of offenses and crime type with good precision (Eggleston and Laub, 2002). Self-report questionnaires may be considered particularly problematic in relation to high-frequency offenders, since these individuals may be expected to be less prone to participating in such surveys, and to underreport their level of offending if they do participate (Bergman and Andershed, 2009). For example, a recent study found that a substantial proportion of the females who had accumulated five or more officially recorded offenses self-reported having
committed zero offenses (Jennings, Loeber, Ahonen, Piquero and Farrington, 2018).  

Conviction records may also be less affected by Police behavior, such as racial profiling, than arrest records. For example, Pettersson (2006) has shown that criminal investigations involving violent crime are more often discontinued when the cases involve foreign-born individuals than when they relate to individuals born in Sweden (see also Kardell, 2006), which may indicate that foreign-born individuals are on average arrested on weaker grounds than those born in Sweden. What can safely be concluded is that arrest records involve a higher degree of uncertainty with regard to the guilt of the suspect than conviction records, and that this uncertainty may not be randomly distributed within the population.

An important advantage of Swedish convictions data, in contrast to data from many other jurisdictions, is that there is no removal of old criminal convictions from the database. This allow researchers to reliably follow-up individuals prospectively as they age, although the approach involves the retrospective selection of a cohort. As highlighted by Kazemian and Farrington (2006), retrospective data collection may otherwise involve a number of serious issues; one regarding the exclusion of individuals who have desisted from crime during the year of the data collection (when historical data is collected on a cohort of offenders), and another concerning the fact that a large proportion of the sample is usually lost because individuals have died or migrated (p. 90).

There are also downsides to the use of conviction data to analyze criminal behavior, the most obvious being that only a minor portion of all the crimes committed comes to the notice of the criminal justice system. It should also be noted that administrative crime data in general are restricted to measuring the legal definition of crime, which makes the legislator and not the social scientist the determinant of the boundaries for what is studied (Sellin, 1938). The significance of these issues is highly dependent on the aim of the research in question. Official crime data, including convictions data, are obviously not very good sources for measuring the absolute number of “antisocial” acts committed during a given period of time, and comparative studies are also

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14 Systematic comparisons of official records and self-reported offending in the study of criminal careers have been inconclusive. Some studies have found a considerable overlap (e.g. Payne and Piquero, 2016) while others have found considerable disparities (e.g. Kirk, 2006). It is not the aim here to evaluate all the pros and cons of conviction data and self-reported data, however, but rather to describe the prerequisites for using Swedish convictions data, and the pitfalls associated with their use, in the context of criminal career research.
sensitive to differences between countries in laws and legal processes (Far-lington, 2015). For example, the age of criminal responsibility can vary from as low as age 6 in North Carolina in the US to as high as age 18 in Belgium. In the Nordic countries the age of criminal responsibility is 15, which means that the average age of onset as measured by criminal justice data naturally occurs somewhat later in the Nordic context than in the US and the UK. For example, in a 1960 Swedish birth cohort followed to age 37, the median age at first conviction was 21 (Svensson, 2002) which would be considered atypical in the Anglo-Saxon context. It should therefore be emphasized that notions of early and late onset are relative terms when viewed in relation to official records, and that other sources of data may provide a better means of capturing the early onset of criminal behavior.

Some of the issues with using administrative data in criminological research involves changes over time regarding the judicial definition of crime, the allocation of criminal justice resources, and changes in registration routines (Payne and Piquero, 2016, von Hofer, 2014). For example, against the backdrop of the political slogan “a drug-free society”, since the 1980s Sweden has witnessed an expansion in the criminal justice measures taken in relation to drug users (Tham, 1995). This represents an example of how a change in the allocation of criminal justice resources can have implications for the use of conviction data in the study of criminal careers, most notably that individuals who are followed over the course of the period in question will become increasingly likely to be convicted of drug offenses as they age. I discuss this issue in more detail below in the section on methodological considerations.

The 1956 Clientele Study of Juvenile Delinquents

Study I departs from the other three studies in using an offender sample of juvenile delinquents, the so-called 1956 Clientele Study of Juvenile Delinquents (hereafter The Clientele Study). The Clientele Study consists of a randomly drawn sample of 200 delinquent boys born in Stockholm between 1943 and 1951 who in the most recent follow-up have been followed on the basis of convictions data until close to retirement age. This dataset may be characterized as a Swedish version of the famous Glueck sample (Glueck and Glueck, 1950), and like the updated versions of the Glueck study (Sampson and Laub, 1993; Laub and Sampson, 2003), it is particularly well suited to testing the salience and predictive value of childhood risk factors for long-
term criminal careers. This is mainly due to the extensive data collection conducted during the boys’ juvenile years, and the long follow up using crime data. It should also be noted that while the age of criminal responsibility in Sweden is 15, the sample of study participants was drawn on the basis of lists maintained by the Stockholm Police Authority, which only included criminal debutants who had been registered for a crime considered non-trivial (usually theft) prior to the age of criminal responsibility.

Given the well-established finding that an early onset of criminal behavior is predictive of criminal career severity (DeLisi and Piquero, 2011), the nature of this sample, together with the possibility of further differentiating among the boys on the basis of childhood risk factors, has facilitated analyses focused on theoretical controversies relating to life-course persistence (for a similar justification for using the Glueck sample to test typological theories of crime, see Sampson, Laub, and Eggleston, 2004). In addition, we were able to link the quantitative data to life history interviews conducted during the 1980s when the boys were aged between 32 and 40 (Sarnecki and Sollenhag, 1985).

In short, we were interested in the life narratives of the men who did not display the criminal careers that we would expect on the basis of the risk scores noted in our quantitative analysis. The qualitative analysis in Study I was therefore intended to shed light on the complexities of individual lives that most quantitative studies reduce to false positives and false negatives. Importantly, Study I complements the other three large-scale and population-based studies as a result of its rich quantitative data and the exploratory nature of the use of life history narratives.

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15 The Clientele Study is a project originally initiated during the 1960s against the backdrop of an increasing trend in juvenile delinquency (SOU, 1971). The initial data collection was exploratory and interdisciplinary in the sense that it was intended to extend our understanding of the predictors of juvenile delinquency beyond social class and poverty. Different teams (medical, psychiatric, psychological, and sociological) collected a variety of data using an array of methods. For example, the sociological study consisted of interviews with parents, teachers, and the Clientele boys themselves, as well as the collection of register data. The data in the psychiatric and psychological parts of the study include clinical assessments and different kinds of tests. The boys’ recorded and self-reported delinquency was also included. The study has been followed up by means of new data collections on two occasions, the first in the middle of the 1980s when the men were in their mid to late 30s (Sarnecki and Sollenhag, 1985) and the second in 2010 as part of The Stockholm Life Course Project initiated at the Department of Criminology, Stockholm University (see Carlsson, 2014; Carlsson and Sarnecki, 2015).
Methodological considerations

As was noted above, the use of administrative data sets a number of boundaries for the research, but it also opens up for a number of methodological decisions on the part of the researcher. In this section I discuss the methodological choices I have made with regard to the selection of the study populations, the utilization of the information included in the convictions register, and the employment of quantitative methods.

In this thesis, Studies II-IV are based on datasets comprising complete birth cohorts of individuals residing in Sweden. It should in this respect be noted that analyses of the general population are by no means a standard approach in the criminal career literature. Even though many contemporary longitudinal datasets comprise population-representative samples of individuals, such as birth cohorts born in a given geographical area, the analyses of criminal careers based on these datasets are often restricted to the subpopulation of offenders (e.g. Kazemian and Farrington, 2006). This may stem from the definition of a criminal career as beginning with a criminal event (Blumstein et al., 1988). However, it should be emphasized that those who are at risk of entering a criminal career are part of the general “non-offender” population. For example, a number of recent long-term recidivism studies have explicitly emphasized that the non-offender population constitutes a relevant comparison group for the offender population since both groups are at risk of being arrested or convicted for a crime when followed over some specified period of time (Blumstein and Nakamura, 2009; Bushway, Nieuwbeerta, and Blokland, 2011; Kurlychek, Brame, and Bushway, 2006). The relevance of considering the non-offender population is also obvious when analyzing the onset of convicted offending since every individual who passes the age of criminal responsibility is at risk for this event.

As was noted above, by using the Swedish population register to select the study population, Studies II-IV have been restricted to analyzing the population of Swedish residents. Given the longitudinal nature of the studies in this thesis, the question then is when a person should be a resident in order to be included in the study. Some studies have selected everyone who was born in Sweden (e.g. von Hofer, 2014), while others have selected those who were resident at a particular age (e.g. Bäckman et al., 2014). I have chosen the latter approach for a number of reasons. First, a proportion of the individuals who are born in Sweden either die or migrate from the country before reaching the age of criminal responsibility. These individuals are not at risk of being convicted for a crime and it is therefore not relevant to include them. Second,
quite a substantial number of Swedish residents are born outside Sweden and have received residency permits subsequently. I have included those individuals who received their residency permits prior to or at age 15 and who were still residents at age 15.\(^\text{16}\) The inclusion of individuals who entered Sweden and received residency permits subsequent to the age of 15 would introduce the issue of left censoring, since it would not be possible to know whether a crime had been recorded prior to the individual migrating to Sweden. It should, however, be noted that this selection process excludes a large part of the immigrant population from the analysis. In sum, by linking information on mortality and migration it has been possible to select those individuals who were formally considered residents in Sweden at age 15.

The Swedish convictions register contains detailed information on the types of crimes included in the conviction, the sanction imposed, the length of any prison term, the date of the conviction, and the date of the crime. A single conviction may include several crimes and a decision has to be made with respect to how to count criminal events. The database includes information for each listed crime with a number of variables specifying when the offense was committed and listing the relevant chapters and sections of the law relating to the offense.\(^\text{17}\) The first crime listed in the conviction is the principal offense, that is, the most severe offense according to the penal code. The other crimes in the conviction are then listed in no specific order. The procedure employed in the four studies included in the thesis has been to count convictions and not crimes, since in the absolute majority of cases the listed crimes related to the same situation or event. Counting the number of crimes might also introduce an element of uncertainty which is more related to the behavior of the justice system than of the offender. The number of crimes in the database per conviction is also truncated at 30 although a conviction may theoretically include more than 30 crimes. Further, I have chosen to examine every crime in the conviction when coding the offense-type categories (see also Skardhamar, 2010a). This is because coding only the principal offense would have resulted in an underrepresentation of less serious offenses. Given the long follow-up period, it would also introduce issues resulting from changes over time in the legislator’s view of the severity of different types of crime.

\(^{16}\) In study III I employed an existing dataset in which this selection had been set to age 16 (see Bäckman et al., 2014).

\(^{17}\) It should be noted that the legal definition of crime is primarily described in the Swedish penal code (Brottsbalken), but that there are also a number of special laws involving criminal sanctions that describe particular crime categories, such as the Road Traffic Offenses Act (Lag om straff för vissa trafikbrott) and the Drug Offenses (Penalties) Act (Narkotikastrafflagen).
Moreover, the crime categories have been selected on the basis of those that are typically emphasized in developmental and life-course theories, which are largely focused on explaining the typical street crimes of violence, property, and drug/alcohol crime (Farrington, 2003; Laub and Sampson, 2003). It should therefore be noted that the preparation of the data has produced disparities by comparison with the data employed to produce Sweden’s official statistics.

There is a time lag between the date of an offense and the conviction date, and it may in many instances be preferable to use the date of the offense (Farrington et al., 2013). Swedish conviction data include the exact date of the principal offense for every conviction that was based on a court decision or where the prosecutor issued a waiver of prosecution, but it was missing in a substantial proportion of those cases where the prosecutor had issued a summary sanction order. In total, around 65 percent of all convictions included the date of the principal offense. This may cause issues in some respects, since the date of the offense then has to be replaced with the date of the conviction. However, recall that the summary sanction does not include the often time consuming process that precedes a court decision. It may therefore be assumed that the time between the date of the offense and the summary sanction order is relatively short, although it may be advisable to conduct sensitivity analyses depending on the research question.

The convictions register also includes information on the sanction determined by the prosecutor or the court, and when the offender is given a prison sentence, there is also information on the length of the prison term. In the context of the studies included in this thesis, the question has been whether the length of the prison term should be subtracted from the time at risk, and thus whether the analyses should weight the exposure time of offender groups who have been given different types of sanctions. In Study III it was deemed particularly important to consider this issue since the study’s focus was directed at comparing male and female recidivism patterns and since gender may be an extra-legal factor that affects criminal justice processing, not least in the form of sentencing decisions (Curry, 2014, but see Kruttschnitt and Savolainen, 2009).

As has been demonstrated by Nygaard Andersen and Skardhamar (2017) the absolute risk for recidivism, is heavily dependent on the choice of the sample at risk (who), the measure of recidivism (what), and the period during which an individual at risk is followed (when). The authors show that the risk for recidivism varies from being as low as 9 percent to as high as 53 percent depending on these three aspects of the study design. As the title of their study...
rhetorically suggests, one may as well simply “pick a number” depending on
the statement one wishes to make. From a broader perspective it may be con-
cluded that the absolute level of crime is a highly ambiguous construct and
that it often has to be related to some reference point in order to make sense. I
would therefore like to stress that the absolute level or development of crim-
inal activity has been of secondary importance in the four studies included in
this thesis. The primary focus has been directed at relative differences in the
level or development of criminal activity between demographic groups de-
fined by gender, age and birth cohort membership, and between offender cat-
egories defined by the number of prior convictions and age of onset.

It should also be stressed that the four studies in this thesis may be charac-
terized as exploratory, meaning that the focus has been directed at describing
and comparing longitudinal sequences of crime across demographic catego-
ries and subcategories of offenders, without making any causal claims for ex-
ample with respect to whether life events, such as being convicted of crime,
have a causal impact on subsequent offending. The assessment of a possible
causal link between past and future offending would require stronger quasi-
experimental research designs, such as natural experiments (e.g. Andersen,
2015), or the employment of statistical methods that produce stronger internal
validity such as fixed effects regression on repeated event data (e.g. Aaltonen,
Macdonald, Martikainen, and Kivivuori, 2013). Instead, the approach has
been to identify distinct patterns in the data that speak to the theoretical contro-
versy in question (see also Farrel, Laycock, and Tilley, 2015). As a conse-
quence, I have also deliberately used formulations that imply statistical asso-
ciations, such as “predict” and “correlate”, and avoided formulations that may
be interpreted as referring to causal claims, such as “effect” and “impact”. I
do, however, argue that the patterns presented should be accounted for by the-
ories that claim to explain the development of crime across the life course.

Finally, some notes should to be made in relation to the controversy sur-
rounding the use of prospective versus retrospective methods in criminal ca-
reer research. Recall that general theories of crime, such as Sampson and
Laub’s (1993) General Age-Graded Theory of Informal Social Control, posit
differences in degree whereas typological theories, such as Moffitt’s (1993)

\[\text{In Study II, one of the main aims was to estimate the proportion of individuals who are con-}
\text{victed of offenses for their first time in adulthood. However, a second step of the analysis in-}
\text{volved a strong comparative emphasis, looking for example at adulthood crime trajectories}
\text{among males and females who were convicted of crimes committed during different phases of}
\text{the life course.}\]
Dual Taxonomy, posit differences in kind. It then appears reasonable for proponents of the first set of theories to employ methods that assume a continuous underlying distribution of criminal behavior, such as conventional growth curve modeling, and for proponents of typologies to employ methods that assume a discrete underlying distribution of criminal behavior, such as the semi-parametric group-based trajectory method introduced by Nagin and Land (1993).

However, it should by now be clear that a model cannot be said to discover what it assumes, and that the large number of studies that have found distinctly different trajectories using the group-based trajectory method cannot be regarded as evidence for typological theories (Raudenbush, 2005; Skardhamar, 2010b). Conversely, the mere employment of conventional growth curve modeling is not a validation for general theories, although the (implicit) assumption made by the researcher when employing these methods is in line with general theories. As suggested by Sampson and Laub (2005), theoretically guided research ought to leave the (a priori) categorization of groups to the researcher and not to the method, and if the aim is to test the validity of typologies then the groups should be selected on the factors that the theory presumes to produce disparities in subsequent offending trajectories. The four studies in this thesis have generally followed this line of reasoning.

Ethical considerations

The four studies in this thesis focus on individual-level data on criminal convictions and penal sanctions. This kind of personal data is included under the term “sensitive data” according to §13 of the Swedish Personal Data Act and research that analyzes data of this kind requires ethical approval according to the Swedish Ethical Review Act. It should first be stressed that all four studies in this thesis are part of research projects which have been found to be in

19 The Personal Data Act is applicable because the project is based on personal data that can be attributable to living individuals. According to §19 of the Personal Data Act, sensitive personal data may be used for statistical purposes if the treatment is necessary as described in §10, and if the societal interest of the statistical project is clearly greater than the risk that may be produced by the resulting intrusion into the individuals’ personal integrity. §10 of the Personal Data Act states that the researcher must first obtain the informed consent of the registered person unless the treatment of the data relates to a legitimate interest of the individual responsible for the data, and this interest outweighs the interest of the registered person’s protection against the resulting violation of their personal integrity.

20 More specifically, according to §21 of the Personal Data Act, it is prohibited to use crime data in research unless the treatment of the data is legitimate according to the Ethical Review
accordance with the relevant legislation and that have been approved by ethical vetting boards in Sweden. However, while ethical norms and the legislation often overlap, ethical norms tend to be broader and more informal (Resnik, 2011). Even though the research project is in line with the legislation, it remains important for the researcher to reflect on ethical principles.

First, with regard to personal integrity, the data in all of the four studies have been anonymized. The quantitative data in three of the studies (Studies I, II, and IV) have been stored at Statistics Sweden and the researchers' access has been enabled via their Micro Data Online Access system (MONA), which as far as possible ensures secure storage and handling of the data. Study III was carried out using a dataset that was stored at Stockholm University, and the qualitative data (tape recorded interviews and transcriptions) employed in Study I were stored in a locked archive room at the Department of Criminology, Stockholm University. The handling of the data was conducted securely. The data files were stored and analyzed on stationary computers at the Department of Criminology and did not leave the facility.

Second, it has not been possible to obtain informed consent from every individual included in the data. This concerns studies II, III, and IV, and is mainly due to the large-scale, register-based nature of these studies. The research projects have been announced on the Criminology Department’s website (www.criminology.su.se) together with the kind of information that is usually required when obtaining informed consent, that is, the aim of the research, a description of the data and the researchers, and a description of how the data will be handled. Abstracts of publications and easily comprehensible descriptions of findings have also been published on the website. This approach increases the benefit of the research, and is also in line with the ethical principle of openness according to the OECD guidelines.

Third, one might discuss whether the benefit of the proposed research outweighs the risk of harm to specific individuals. In general, Nordic administrative register data provide a rich source for research which some have argued has been largely untapped by the field of criminological research (Lyngstad and Skardhamar, 2011). If there are strong reasons to believe that register-based research can improve our knowledge of crime and its correlates, then this is in itself a strong argument for utilizing this potential. The decision on
whether the aims of the respective research projects has outweighed the risk of harming specific individuals has essentially been made by the ethical review board.

Finally, Study I departs from the other three studies in utilizing a dataset comprising a relatively small sample which is uniquely rich in information, both quantitative and qualitative, and it is therefore deserving of additional ethical consideration. The wide range of data collected on the study sample, consisting of interviews with teachers, parents, the boys themselves, psychological tests, evaluations of their home environment, and the collection of data from a multitude of registers, is unique in its potential to answer research questions regarding continuity and change in crime. At the same time, the ethical standards of the 1950s and 60s were probably less rigorous than those of today, and it may even be doubtful whether it would have been possible to launch a research project of this kind today (Carlsson, 2014). A relevant question then is whether the mere use of these data is in accordance with the ethical standards of today. I believe it is, with the main argument being that the potential harm that was caused to the individuals during the original data collection more than 50 years ago and during the first interview follow-up around 30 years ago would have been in vain had the data not been used. While the life-course paradigm had yet not been established at the time of the initiation of the Clientele Study, this dataset may today be considered one of very few which have the potential to develop the knowledge base on continuity and change in crime. In this sense, the academic community has a responsibility to utilize this potential, while, of course, being aware of the ethical issues surrounding the original project as well as exercising caution in the handling of the data.
Summary of the Studies

Study I: Continuity, change, and contradictions: Risk and agency in criminal careers to age 59

The point of departure in Study I is the debate over the ability to make prospective long-term predictions of criminal offending based on childhood risk factors. This debate is rooted in the theoretical underpinnings of continuity and change in offending behavior over the life course. More specifically, one side emphasizes the existence of a distinct category of life-course persistent offenders, whose behavior is rooted in static individual traits (Moffitt, 1993), thus suggesting that with proper assessment devices, adult offending could be accurately predicted on the basis of childhood risk factors. The life-course framework, as formulated by Sampson and Laub (2005), however, questions the logic of prediction that drives the search for early risk factors and instead emphasizes the continuous influence of random events and human agency.

Against the backdrop of the influential group-based method (see Piquero, 2008), there seems to be a lot of additional room for a theory-driven or “prospective approach” to empirically test the validity of typologies. Such an approach does not begin by categorizing the outcome that is to be explained but instead begins with those explanatory factors which the theory presumes to cause the trajectory in the first place (Laub and Sampson, 2003). With respect to offending trajectories, conventional growth curve modeling may be employed to explore the degree of variation in the trajectories of prospectively defined risk groups. From a policy-oriented perspective, the prospective approach truly speaks to the predictive value of childhood risk factors for subsequent crime, and to the issue involving what have become known as the false positives. The overarching issue is thus also linked to the logic that drives risk factor research and the continuous search for appropriate assessment devices that might generate perfect predictions (Case and Haines, 2009).

We employed a longitudinal dataset comprising a random sample of 200 boys with early signs of delinquency who were born in Stockholm between 1943 and 1951 and who were followed to age 59 with convictions data, the
so-called 1956 Clientele Study of Juvenile Delinquents (Carlsson and Sarnecki, 2015). Different teams (medical, psychiatric, psychological, and sociological) had collected a variety of data using an array of methods during the participants’ juvenile years, which provided a unique opportunity to test how well cumulative childhood risk predicted a future life of crime. In total we took into account 26 highlighted risk indicators relating to individual behavior, family, school, and peers (see Murray and Farrington, 2010). In addition, life history interviews were conducted during mid-life which provided an opportunity to explore the narratives for a subset of cases in which the individual-level prediction had failed, that is, those “deviant” cases who had a bad prognosis but who ended up living conventional lives, and those who had a good prognosis for the future but ended up among the most persistent offenders in the sample (see Sullivan, 2011). Hence, the approach involved combining quantitative and qualitative methods in order to first try to maximize the accuracy of long-term prediction, and in the next step to explore the possible reasons for why some cases did not turn out as expected on the basis of their prognoses.

The results indicated a clear association between cumulative childhood risk and the risk of being convicted of crime in adulthood. Around 80 percent of the individuals in the high-risk group had been recorded for at least one non-trivial crime after adolescence, compared with around 40 percent of those with the lowest risk level. It should here be recalled that the sample comprised at-risk juveniles, suggesting that the early criminal record captured heterogeneity in future risk which could be further differentiated using a wide array of childhood risk factors. However, we were only able to predict one-third of those persistent offenders who ended up in the tail of the crime distribution. Furthermore, using growth curve analysis to compare subsequent offending trajectories among the childhood risk groups, we found a consistent pattern in all groups that reflected the typical age-crime curve, with declining trends as middle adulthood approached. The exploration of a small subset of life-history narratives where the individual-level prediction had gone wrong indicated that this was not a matter of measurement error, but that the lives of these individuals had taken non-predictable turns following the transition to adulthood, partly in parallel with changes in Swedish society. We therefore suggest that these cases are informative with regard to features of social life that cannot simply be reduced to expressions of childhood risk.
Study II: Adulthood-limited offending: How much is there to explain?

Study II addresses the phenomenon of adult-onset offending, and the theoretical controversy concerning how much attention should be devoted to explanations focused on this category of offenders. In essence, this controversy has concerned whether developmental theories, such as Moffitt's (1993) Dual Taxonomy, are sufficient to account for adult-onset offending, or whether there is a need for theories whose focus is instead directed at more proximate explanations during adulthood. In Moffitt’s view, the main bulk of adult-onset offending can be accommodated by the adolescence-limited category of offenders, because the offending careers of both groups are very similar, with adult-onset careers tending to be brief and non-serious (Moffitt, 2006). The remaining adult-onset offenders, Moffitt argues, are life-course persistent offenders who, despite significant criminal and antisocial behavior, have avoided detection by the criminal justice system; their delayed appearance is thus an artifact of the use of official crime data (see also Sohoni, Paternoster, McGloin, and Bachman, 2014). In contrast, life-course theories, such as the General Age-Graded Theory of Informal Social Control (Sampson and Laub, 1993), allow for the kind of change implied by the initiation of a criminal careers in adulthood.

The adult-onset offender has in practice been shown to be an ambiguous concept, with one of the main controversies being the question of when adulthood begins. Previous research, mainly from the US, has defined adult-onset as being arrested or convicted for the first time at age 18 or later (DeLisi, 2006; DeLisi et al., 2018; Eggleston and Laub, 2002; Gomez-Smith and Piquero, 2005). These studies usually find that a significant proportion of the offender population are adult-onset offenders (e.g. Eggleston and Laub, 2002), and that their criminal careers may also be severe (e.g. DeLisi, 2006). In developmental terms, however, this cut-off point should be questioned: The individual may be of legal adult age but in modern, Western societies the phase of adolescence tends to be prolonged (Moffitt, 2006), which has prompted Arnett (2000) to develop the notion of “emerging adulthood” to cover the often transitional stage between ages 18 and 25. In addition, when using official crime data there is a risk that official onset lags behind self-reported onset by a few years, which increases the risk for confusing adolescence-onset offending with adult-onset offending when using a legal definition of adulthood (Moffitt, 2006). Therefore, the magnitude of adult-onset offending may have been exaggerated.
The study employs a Swedish population-based dataset comprising five successive birth cohorts which are followed prospectively on the basis of detailed conviction data to age 50. Recognizing the criticism directed at the use of a legal definition of adulthood, adult-onset offending was defined as having been convicted for the first time for a crime committed at age 25 or later (see also Beckley et al., 2016). The results indicated that the magnitude of adulthood-onset offending is likely to be underestimated in studies that do not follow individuals over a substantial segment of the life course.

In the convicted subpopulations of males and females, around 22 percent of males and 38 percent of females were first convicted for crimes they had committed in adulthood (between age 25 and 50). While the adult-onset males contributed to 19 percent of all male adulthood convictions and to 16 percent of male violent convictions, the corresponding figures among the adult-onset females were 47 percent of all female adulthood convictions and 48 percent of female violent convictions in adulthood. Furthermore, while the adolescent-onset trajectories displayed generally decreasing trends for offending in adulthood, adult-onset females displayed increasing trends in relation to trajectories of violence and drug/alcohol-related offending as they approached middle adulthood. The overarching message communicated by the study is that there is a need for developmental and life-course theories to provide more explicit accounts for explanations concerning adult-onset offending, particularly in relation to gender disparities (see also Andersson and Levander, 2013).

Study III: Catching up in crime? Long-term processes of recidivism across gender

Male offenders outnumber female offenders in all societies and historical periods for which records are available. In Sweden in 2017, around 84 percent of all convictions referred to males, a gender ratio that has remained stable for ten years (Brå, 2018). In a recent review of gender, offending and the life course, Macmillan and McCarthy (2014) concluded that this pattern is largely consistent across the life course – while there are several similarities between males’ and females’ offending patterns, the main difference is that males are overrepresented in terms of magnitude across all life stages. Macmillan and McCarthy (2014) further argued that this finding is somewhat problematic for developmental and life-course criminology because it does not signal a need for a dynamic perspective in relation to our understanding of gender differ-
ences in offending (p. 10). At the same time, their review shows that the research on gendered aspects of continuity and change in offending is either contradictory or thin, and they therefore concluded that this may be a particularly promising area for improving the knowledge on gender, offending and the life course.

Indeed, while being male is one of the main demographic predictors for convicted crime at the population level, previous research has shown that gender is not as important for predicting criminal recidivism. At the same time, no previous research has systematically examined the manner in which the criminal history modifies the predictive value of gender in relation to recidivism in a life-course setting. This is most probably mainly due to the fact that there are few longitudinal datasets that follow a substantial number of female offenders beyond the transition to adulthood (Piquero et al., 2005). With the overarching aim of furthering our understanding of the role of gender in continuity and change in crime, Study III examines gender similarities and differences in recidivism tendencies with regard to a number of criminal career parameters, with a focus on how the predictive value of gender varies with criminal history. The study employs population-based administrative data for an entire Swedish birth cohort born in 1965 and followed from age 15 to 47.

The results show that a male conviction, on average, results in a reconviction substantially more quickly than a female conviction. For example, viewed over all the accumulated convictions among males and females respectively, it took 2.9 years for half of the total number of male convictions to result in a reconviction, compared to over 17 years for the female convictions. However, this picture was substantially nuanced by looking into repeated recidivism and the ways in which the recidivism risk varied by the number of previous convictions. While convicted males have a higher risk for recidivism than convicted females following a first conviction, and, to some extent, also following a second conviction, the predictive value of gender diminishes at higher levels of previous convictions. This pattern remained when controlling for age at conviction, age of conviction onset, offense type, and sanction type. The study also shows that being convicted of a drug offense is generally an important predictor for recidivism, but even more so among females than among males. Hence, the results suggest that the selection into persistent offending is stronger among females than among males, and furthermore, that substance misuse may be a particularly important factor to consider in understanding persistence in crime among females.
Study IV: Participation and frequency in criminal convictions across 25 successive birth cohorts: Collectivity, polarization, or convergence?

The question of constancy, or invariance, in criminality has a long history in the criminological discipline, and it was also one of the controversies that spurred the development of longitudinal research on crime. Influential theories have been characterized by an assumption that criminality is relatively constant, or invariant, across birth cohort membership (Hirschi and Gottfredson, 1983; MacLeod, Grove, and Farrington, 2014). However, such an assumption would appear to be in conflict with one of the paradigmatic principles of life-course research which, in contrast, posits that individuals from different birth cohorts grow up in shifting historical conditions, which may in turn produce cohort effects on life-course trajectories (Bäckman et al., 2014; Elder, 1994; Sampson, 2015). This is an important controversy that essentially relates to the link between historical and individual development. With the exception of a few studies, however, there is little published data that might shed light on this controversy, which is partly due to the fact that most contemporary longitudinal datasets on crime and the life course have been designed as single birth cohort studies (Sampson, 2015).

However, one branch of recent studies has touched on this issue somewhat indirectly in its efforts to explore whether the crime drop that has taken place in many Western societies since the early 1990s (Farrell, Tilly, and Tseloni, 2014; Tonry, 2014) has implied changing patterns of criminality. More specifically, these studies have employed longitudinal multi cohort data and have explored whether falling crime rates have been linked to any divergence in the trends in the proportion of individuals within the population who offend, that is, participation, and the rate at which active offenders offend, that is, frequency (Andersen, Anker, and Andersen, 2016; Berg, Baumer, Rosenfeld, and Loeber, 2016; Matthews, 2016). The general conclusion of these studies appears to be that the crime drop is linked to a decline in participation in crime, first and foremost among young males.

However, it is not clear whether this decline has been reflected in offending frequencies within the offender population across successive cohorts. Further, most studies in this research field have been based on male populations, and have thus not been able to provide knowledge regarding the possibility of changing criminal career patterns among females during the course of the crime drop. Since the crime drop among young males also appears to have
reduced the gender gap in crime (Estrada, Bäckman, and Nilsson, 2015; Matthews, 2016), it is relevant to ask also how participation and frequency in crime have played out across successive cohorts in the female population.

Against the backdrop of a declining aggregate crime trend in Sweden, the overarching objective of Study IV has been to explore the extent to which the crime rate across successive cohorts conceal any degree of divergence between participation and frequency in criminal convictions. The study employs a dataset comprising 25 complete Swedish birth cohorts born between 1960 and 1984 and followed to age 30 using detailed convictions data. The panel structure of this dataset provides a unique opportunity to explore the association between birth cohort membership and central criminal career parameters over a substantial number of successive birth cohorts during a phase of their lives in which crime both peaks and begins to decline according to the conventional wisdom of criminal career research (DeLisi and Piquero, 2011).

The results show that the declining crime rate across successive cohorts has primarily been due to a contraction in the male offender population. The male offender population has decreased in size, from 40 percent of the cohorts born in the early 1960s to 25 percent of those born during the early 1980s. At the same time, the frequency of convictions has increased consistently among cohorts born during the early 1970s and later, suggesting a polarized development among the males across these later cohorts. The decrease in participation has mainly occurred during late adolescence, and is related to traffic and property crime. At the same time, the age-crime curve in later cohorts is characterized by an earlier modal peak age, which is driven by increasing violent crime among males and property crime among females. There is also a marked increase in narcotics crime during early adulthood in the most recent cohorts. Overall, the results show a complex pattern of change, by which participation and frequency vary by birth cohort membership, gender, age, and crime types. These results thereby presents a challenge to theories which assume constancy in criminality across birth cohort membership, and also to theories of the crime drop which posit general mechanisms for this historical trend.
Discussion

In the following I discuss the overarching findings of the current thesis with respect to their implications for the conflict between the developmental perspective and a life-course view in relation to the study of crime and its correlates across the life course. In connection, I make a number of suggestions on how the links between criminological research and the broader life-course paradigm might be further strengthened. Next, I discuss how the findings relate to policy and practice in the field of crime prevention. Finally, I draw general conclusions on the basis of the studies in this thesis.

Adulthood matters

In his 2010 presidential address to the American Society of Criminology, Francis Cullen (2011) suggested that what he termed “adolescence-limited criminology” had contributed a great deal to the criminological discipline in the past but that its capacity to move the study of crime forward is now limited. In short, Cullen’s view of adolescence-limited criminology is that it constitutes “a paradigm that privileges the use of questionnaires, completed by adolescents, to explain self-reported delinquency and privileges efforts to show that state intervention does not work to reduce crime” (p. 304). While developmental and life-course criminology may be viewed as a successor to adolescence-limited criminology, the current thesis has largely been formulated around the inherent tensions within this paradigm. Somewhat ironically in light of Cullen’s description of adolescence-limited criminology, the conflict between the developmental perspective and the life-course view is largely focused on the importance of adulthood, and on whether this is merely a phase of life during which the dependent variable, crime, unfolds or whether adulthood is also characterized by specific social circumstances that must be invoked to fully understand crime across the life course.

The fact that there are early inequalities in life, which may include both individual traits and social conditions that function in complex ways to elevate the risk of entering into crime (Farrington and Welsh, 2007) is uncontroversial...
from a life-course view. Indeed, one of the paradigmatic principles of life-course research states that adulthood cannot be fully understood without knowledge about the earlier stages of life (Elder, 1994). At the same time, this principle also posits that development does not end with adolescence but that adults also experience fundamental biological, psychological, and social changes that are developmentally meaningful (Elder et al., 2003, p. 11). Therefore, a life-course view, while recognizing early inequalities, posits that it is not sufficient to zero in on the juvenile years if we are to fully understand (adult) crime (see also Carlsson and Sarnecki, 2015).

As outlined in the background section, as longitudinal datasets have been updated to allow for longer follow-up periods, the controversy between the developmental perspective and the life-course view has to a large extent come to focus on the study of desistance from crime beyond the transition to adulthood. In this respect many scholars have embraced Sampson and Laub’s (2003) suggestion that desistance is the norm for all offenders, which is not least reflected in the subsequent development of a distinct branch of “desistance research” (Kazemian, 2007; Kazemian and Maruna, 2009). The current thesis resonates well with this field of inquiry in part because cumulative childhood risk was unable to predict any degree of difference in the shape of the age-crime relationship and was also of limited value in predicting the tail of the crime distribution (Study I). More generally, the current thesis resonates well with a life-course view of crime in suggesting that crime beyond the transition to adulthood cannot be fully understood by exclusively focusing on childhood and adolescence (see also Carlsson, 2014).

Having said this, the life-course view of crime could benefit from efforts to further our knowledge of crime beyond the transition to adulthood in at least four ways: (1) by employing population-representative samples instead of delinquent or otherwise selected samples of at-risk youth, (2) by recognizing that desistance from crime may not be the only form of change in crime trajectories that occur beyond the transition to adulthood, (3) by a stronger focus on female continuity and change in crime, and (4) by the adoption of approaches that recognize crime not only in the form of holistic outcome trajectories but also as social transitions that may have consequences for other life course trajectories (education, employment, family, housing) in adulthood. These suggestions for future research could largely be addressed using Nordic administrative data.

First, although it may be reasonable to direct attention at the group of offenders who have passed some reasonable threshold of frequent offending in
the study of desistance from crime (Laub and Sampson, 2003), the use of selected samples not randomly drawn from a predefined population, generates doubt with respect to the generalizability of results. There are many layers to this issue, even leaving aside the fact that many longitudinal studies are based on single birth cohorts and thus limited to empirically investigate the link between social structural change and individual development (I will be returning to the issue of single birth cohort studies). For example, with regard to the Glueck study, it is not clear whether these men born during the mid-1920s to early 1930s in the city of Boston is to be considered a sample that is representative for a larger population. Indeed, in response to Sampson and Laub’s criticism of the developmental perspective, Moffitt (2006) has argued that population-representative samples must be used to test the Dual Taxonomy (see also Robins, 2005). The current thesis has in large provided examples for how Nordic population-based administrative data may be used to address theoretical controversies by means of exploring longitudinal patterns of crime beyond the transition to adulthood, and there ought to be a lot of room for further utilizing the potentials with Nordic data in this respect (see Lyngstad and Skardhamar, 2011).

Second, change in crime during adulthood has predominantly been synonymous with explaining desistance from crime, and the study of turning points related to this process. As suggested by this thesis, there may be further space to theorize about changes in adulthood, particularly given that a relatively substantial proportion of individuals are convicted for crime for their first time during this phase of life (Study II). Since Eggleston and Laub (2002) made the argument that adult-onset offending was a neglected dimension of the criminal career, the subsequent adult-onset literature has largely adopted a developmental perspective and examined the past of those offenders who are convicted for the first time in adulthood. In particular, the strategy employed has involved first defining a group of adult-onset offenders and then posing research questions about the risk factors in youth that predict membership of this group (e.g. Zara and Farrington, 2009). In this sense, following the developmental perspective, the assumption appears to be that change in adulthood

21 It may appear somewhat paradoxical that Sampson and Laub, who have argued for the incorporation of history into the longitudinal study of crime, have not empirically dealt with the “social” aspect of the Dual Taxonomy. Clearly, this is a data issue, since the Glueck sample, which was used in the formulation of the General Age-Graded Theory of Informal Social Control, is not a representative sample of the general population. While Sampson and Laub (2005) maintain that the Glueck sample is highly suitable for testing the theory of life-course persistence, they acknowledge that it is not suitable for testing the theory of adolescence-limited offending.
is predetermined by characteristics measured in youth, or, alternatively, that a conviction in adulthood merely captures the continuance of undetected anti-social behavior and should therefore not be a focus of attention at all (Sohoni et al., 2014).

Against this backdrop, there is considerable space for a life-course view to explore possible changes around the time of the criminal event, and also to recognize that the criminal conviction itself may capture a negative change in the life course. For example, a large-scale study from Finland suggests that the first drunk-driving conviction constitutes a significant life event that increases the likelihood of financial problems and divorce (Oksanen, Aaltonen, and Kivivuori, 2015). The fact that a conviction captures both individual behavior and a response from the criminal justice system also opens up for research questions about the significance of this response. After all, a criminal conviction may be assumed to be a disruptive life event for many, and perhaps more so for those individuals who lack an (official) criminal history than for those toward the tail of the crime distribution (MacLeod et al., 2014). In particular, a first spell of imprisonment may be expected to constitute a significant life event that affects subsequent life course trajectories, such as employment (Aaltonen et al., 2016).

Third, while the study of continuity and change in crime has predominantly focused on male samples, it appears to be increasingly relevant to include females in studies that look beyond the transition to adulthood. This thesis suggests that the overrepresentation of male offenders is much smaller during adulthood than during adolescence (see also Anderson et al., 2012; Beckley et al., 2016), that a substantial proportion – close to half – of all female convictions in adulthood, including violent crime, relate to female adult-onset offenders, and that the issue of persistence in crime also concerns a small proportion of the female offender population beyond the transition to adulthood (Studies II and III). Although traditional factors related to informal social control, such as marriage and employment, appear to be important in promoting desistance from crime among both males and females, there are also dimensions of social life that may be expected to differ, such as family formation and children (Giordano, Cernkovich, and Rudolph, 2002; Zoutewelle-Terovan and Skardhamar, 2016). However, as Giordano, Cernkovich, and Rudolph (2002) noted in relation to their selected sample of seriously troubled youth, additional research in this area warrants larger and more heterogeneous samples (p. 1052).

Finally, the longitudinal study of crime has recently been predominantly focused on crime in the form of holistic trajectories. Besides the controversy
surrounding the group-based trajectory method in testing developmental theories (e.g., Skardhamar, 2010b), growth curve methodology has also been the subject of more general criticism for “smoothing out” individual crime trajectories that may differ from one another in meaningful ways in a short-term perspective (Bushway and Tahamont, 2016). Around the time of the formulation of the criminal career agenda, Hagan and Palloni (1988) argued for an approach that treats criminal events and their correlates as social events in the life course. However, whereas the use of event history analysis has been common in recidivism research as a means of examining factors associated with the risk for recidivism, recidivism research has rarely located the issue of recidivism in the larger context of criminal offending (Bushway, Brame, and Paternoster, 2004). As is highlighted in Study III, event history methods may also be used to analyze repeated event history data over a longer timeframe thus providing opportunities to examine the issues of persistence in and desistance from crime (see also Kurlychek, Bushway, and Brame, 2012). As I see it, this appears to constitute a reasonable approach in the context of the life-course perspective, given its emphasis on directing the research focus at proximate circumstances that precede (or succeed) the criminal event in time.

Locating criminal careers in their historical context

Despite the fact that crime is an ambiguous concept which cannot be understood outside its social and historical context, history seems to largely repeat itself with respect to the skewed crime distribution and the age-crime relationship. As has been emphasized by some of the most prominent scholars within criminology, the robustness of these patterns across space and time suggests that between-individual differences need to be taken seriously in the study of crime causation (Hirschi and Gottfredson, 1983; MacLeod et al., 2014). However, this does not mean that there are no degrees of variation in these patterns that may be sociologically meaningful (Ulmer and Steffensmeier, 2014; Sampson, 2015).22

Ryder (1965) suggested long ago that comparisons of how people age across different birth cohorts underscore the “dual significance” of age – on the one hand denoting the position in the life cycle, and on the other indicating

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22 As Ulmer and Steffensmeier (2014) have noted, while consistency in the age-crime relationship across space and time may to some signal the presence of some form of biological basis, it must also be acknowledged that it may also indicate that age-related socialization and age-graded norms “are remarkably constant across times and settings for reasons that are socially practical and only indirectly biological.” (p. 2)
that lives are embedded in specific historical circumstances. These two “dyna-
isms” of age were elaborated on by Riley (1987), who suggested that they
may be clarified by imagining a diagram bounded on its vertical axis by age
in years and on its horizontal axis by dates that index the course of history. To
exemplify, Figure 5 illustrates such a diagram spanning the historical periods
experienced by the oldest and the youngest birth cohorts included in the cur-
rent thesis (up to the present), i.e. those born in 1943 (the oldest birth cohort
in Study I) and in 1984 (the youngest birth cohort in Study IV). The horizontal
dashed line marks the age of criminal responsibility in Sweden, and the verti-
cal dashed line marks the point in history from whereon both of these cohorts
contribute to the aggregate crime rate.

The principle of cohort differences in aging (Elder, 1994; Riley, 1987) sug-
gests that because societies change, individuals in different cohorts’ age in
different ways, and that the aging process is altered by social change. This
principle is illustrated by comparing the diagonal bars depicted in Figure 5.
The oldest cohort belongs to a baby-boom generation born around the end of
World War II. This generation grew up in a time, the late 1950s and early
1960s, when the Swedish welfare state was marked by relative social stability
with plenty of job opportunities (Ahrne, Roman, and Franzén, 2008). Roughly
speaking, the sequence of events through which individuals made their en-
trance into social adulthood was relatively uncomplicated, and typically oc-
curred in the form of a transition from compulsory schooling into stable em-
ployment, for boys via military service. In contrast, the 1984 cohort grew up
at the same time as the emergence of the information society, with the absolute
majority entering upper secondary education after compulsory schooling, and
where a large proportion also continuing further into higher education. More
generally, the 1984 cohort came of age in a society in which the transition to
social adulthood occurred significantly later than was the case for the 1943
cohort, at least with respect to typical markers of adulthood such as stable jobs,
relationships and residency.

As a means of taking the principle of cohort differences in aging seriously
in future longitudinal research on crime, the relevant question to ask would be
how the kinds of social change exemplified above might affect processes of
continuity and change in crime. For example, with respect to the Dual Taxon-
omy, Moffitt (1993) has argued that the increase in adolescence-limited off-
fending seen during the 20th century has to a large extent been a byproduct of
modernization, with the gap between biological and social maturity constitu-
ing the fundamental determinant for a society’s age-crime structure. As the
maturity gap has grown, it is argued, so has the peak of juvenile delinquency.
But how does an increasing maturity gap, which has continued into the 21st century, reconcile with the crime drop in young male street crime that has occurred over recent decades? Moffitt (2018) notes that the rise in opportunities for digital crime was not anticipated by the theory. More generally, whether the adolescence-limited theory stands the test of time remains an open question for further inquiry.

Figure 5. A Lexis diagram depicting the life lines of two birth cohorts.

With respect to the General Age-Graded Theory of Informal Social Control, the principle of cohort differences in aging may be related to the changing manifestations of turning points (Sampson and Laub, 2016). To take one example, military service was one of the significant turning points in the lives of the Glueck men, mainly because it provided financial support in the World War II era, which in turn enhanced subsequent occupational status and job-stability (Laub and Sampson, 2003, p. 48-49). Similarly, in Sweden, the 1943 cohort grew up during a time in which military service was mandatory for
boys, thus making it a transition in the life course which almost an entire generation of young males experienced. At the time when the 1984 cohort was eligible for military service, compulsory military service was on its way of being phased out and replaced by a voluntary alternative. A recent Swedish study has shown that military service among boys born in the 1970s and 80s did not constitute a positive turning point, but, on the contrary, increased post-service crime around the transition to adulthood (Hjalmarsson and Lindquist, 2016). Further, it was mainly those boys from disadvantaged backgrounds who displayed an increase in crime. Although it is unclear whether the 1943 cohort benefitted from military service, the point is that military service has changed in manifestation during the period between the times at which the 1943 and the 1984 cohort came of age which in turn may have changed its significance as a transition in the life course. There ought to be room for further scrutiny on changing manifestations of turning points as younger generations of troubled males and females make their transition to early adulthood.

As the current thesis shows, the criminal career, as measured with convictions data, has changed significantly from cohorts born during the early 1960s until cohorts born during the mid-1980s (Study IV). A particularly interesting change in this respect is seen when comparing age-crime curves across successive cohorts and gender. While the main body of previous research using earlier cohorts (including Study II in this thesis) has shown that females tend to be convicted for the first time later than males (e.g. Beckley et al., 2016), this appears not to be the case among Swedish cohorts born in the 1980s, at least not when followed to age 30. Instead, the age-crime curves among females have become increasingly similar to that of males in later cohorts, a tendency that appears to have been mainly driven by a shift towards earlier debut ages among females. Of course, this change cannot merely be seen as capturing the ways in which individuals in different birth cohorts commit crime, but also the ways in which the criminal justice system respond to crime. For example, Schwarz (2013) has argued that the declining gender gap in officially recorded violence is largely a product of changes in social control practices that regulate the use of female violence. More generally, a process of net-widening, including minor property crime, may have caused a disproportionate share of low-risk females being drawn into the criminal justice system across successive cohorts (Bäckman et al., 2014). On the one hand, such a “policy change” may, from one viewpoint, provide skepticism to the use of criminal justice data in the analysis of criminal behavior (Gottfredson and Hirschi, 2016), but from a life-course view, it opens up for the question of how it may have altered subsequent life course trajectories (Sampson and
Laub, 2016), in this case among recent cohorts of females who before their 18th birthday are convicted for crime.

Turning to the other “dynamism” of aging – the principle of cohort influence on social change – this principle suggests that because members of successive cohorts age in different ways, they also contribute to changes in the social structure (Riley, 1987, p. 4). This principle may be exemplified by looking at the vertical dashed line in the figure, which marks the period during which the 1984 cohort entered the age of criminal responsibility in Sweden. The members of both the 1943 and 1984 cohorts constitute part of the age strata of the population who may become subject for criminal suspicion at this cross-sectional point in time. With respect to crime, the principle of cohort influence on social change therefore suggests that the aggregate crime trend from this point on cannot fully be understood without taking into account the historical experiences, with regard to social opportunities and constraints, to which their respective cohorts have been exposed (Bäckman et al., 2014). On the contrary, as shown by the arrows in Figure 5, cohort effects would be expected to affect the aggregate crime trend to some degree.

In sum, longitudinal research on crime has predominantly focused on age as a property of the individual, which leaves a lot of room open for future life-course criminology to study the links between historical and individual development (Bäckman et al., 2014; Sampson, 2015). In study IV, we argued that the crime drop constitutes a case that provides both a challenge to DLC theories and, at the same time, an opportunity for theory development. The decline seems to relate mainly to young males and to typical street crimes, such as theft, burglary, and violence (Farrell et al., 2014), which indeed constitute the demographic strata and the types of crime that DLC theories have been developed to explain (see Farrington, 2003). As Sampson and Laub (2016) recently argued, from a US perspective, this crime decline may be the biggest understudied societal change with respect to how it relates to individual development (p. 328; see also Baumer, Vélez, and Rosenfeld, 2018). A similar argument may be made with respect to the crime drop in other Western nations, including for example Scotland (Matthews, 2016), Denmark (Andersen et al., 2016), and Sweden (Nilsson, Estrada, and Bäckman, 2017). Importantly, the employment of longitudinal multi-cohort data provides a crucial methodological means of locating criminal careers in their historical context, and in this respect Nordic administrative registers ought to provide an extremely valuable source of data. The current thesis has only scratched the surface of the inherent complexity of the links between individual and historical developments in crime, and further research in this path awaits.
Policy implications

As was outlined in the background chapter of this thesis, the origins of the criminal career agenda were highly policy oriented. This is in part expressed by the distinction between the proportion of individuals within the population who offend, that is, participation, and the rate at which active offenders offend, that is, frequency (Blumstein et al., 1988). As suggested by Blumstein et al. (1988) “both participation and frequency are important and distinct foci for potential reductions in crime, and the causal factors and policy options associated with each may be quite different” (p. 7). More specifically, a reduction in participation relates to general social policy and prevention strategies directed at the total population, whereas a reduction in frequency relates to targeted efforts directed at a subset of the population.

Clearly, the robustness of the skewed crime distribution opens up for the possibility that a large proportion of crime could be prevented by targeting those individuals who are expected to end up in the tail of the distribution. This possibility is in turn linked to our ability to predict future crime – on the one hand the ability to foresee a life of crime in order to direct early measures at high-risk youth, and, on the other hand, the ability to predict an escalation in criminal activity among individuals who have already entered into crime in order to selectively incapacitate and/or rehabilitate these individuals (Lab, 2016). These efforts would in Lab’s (2016) terminology be termed secondary and tertiary crime prevention respectively. The main commonality between these areas of crime prevention is that they are targeted in some way, but whereas secondary crime prevention may to a high degree involve social institutions such as parents, schools, and the neighborhood, tertiary crime prevention rests with the workings of the criminal justice system and the activities of arrest, prosecution, incarceration, treatment, and rehabilitation (p. 32). In the following, I discuss the findings presented in the thesis in the light of secondary and tertiary crime prevention efforts.

The current thesis has in part touched on the predictive value of childhood risk factors for the prevention of adulthood crime (Study I). By distinguishing a small category of high-risk youth, consisting of 21 individuals, in an already

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23 Lab (2016) suggests that so-called developmental crime prevention, that is, approaches that “focus on risk factors that may lead individuals to deviant behavior” may be sorted under primary prevention (p. 31). However, Lab also notes that “many secondary prevention efforts resemble activities listed under primary prevention” and that efforts directed at risk factors that already exist are more clearly related to secondary prevention (p. 32). My reading of the implications of many developmental approaches to crime is that these are often directed at high-risk youth rather than at the total population.
selected sample of young delinquents, Carlsson and I found a clear association between childhood risk and adulthood crime. More specifically, around 80 percent of the high-risk group was convicted of crime in adulthood, and around one-third eventually ended up in the tail of the crime distribution (defined as the ten percent with the highest number of recorded offenses). These figures suggest that some degree of adulthood crime could be identified early in life, although it is beyond the scope of the current thesis to say anything about whether secondary crime prevention measures might also be efficient. The goal of “saving children from a life of crime” using early intervention (Farrington and Welsh, 2007) is clearly appealing if the alternative is to ignore the fact that early inequalities in developmental risk factors do exist.

Having said this, the current thesis also reflects a well-known paradox in that looking forward from childhood tends to reveal heterogeneity in adult outcomes, with both successes and failures for the most troubled children, while looking back over the life course of adult criminals tends to suggest a picture of stability (Robins, 1966; Sampson, 2000). With respect to the issue of long-term prediction, this paradox suggests that the issue is primarily related to the so-called false positives, that is, those cases where an individual is expected to develop a life of crime but does not do so (Lab, 2016). After all, Study I showed that the majority, around two-thirds, of those delinquents with the worst prognosis did not end up in the tail of the crime distribution, and one-fifth of them were never convicted in adulthood (see also Farrington et al., 2013, Laub and Sampson, 2003). Hence, given that early intervention strategies involve targeting a certain subgroup of the general population, it is particularly important to consider the issue of false-positive predictions. The ethical issues mainly relate to the possibility that such efforts may generate labeling and stigmatization among the targeted individuals (Becker, 1963; Sampson and Laub, 1997), but they could also involve a waste of resources which could instead be allocated to other crime preventive efforts.

Tertiary prevention is largely focused on the extent to which the criminal justice system can prevent criminal recidivism among the offender population (Lab, 2016). As has been suggested by Svensson (2002), the information included in a person’s criminal record may provide an important point of departure for crime prevention strategies (p. 395). As previously implied, the false negatives (those who are predicted not to enter into crime but who do so) are

24 Interestingly, these figures were very close to those found in previous efforts to maximize prediction conducted in the context of the famous Cambridge Study. More specifically, Farrington et al. (2013) were able to predict close to 90 percent of adult offenders and almost 30 percent of high-rate chronic offenders.
less of an issue than the false positives in the context of long-term prediction based on childhood risk factors. However, with respect to the use of criminal records per se for crime prevention strategies, the current thesis suggests that a significant proportion of adulthood convictions relate to individuals with no juvenile record, particularly among the population of convicted females (Study II). Importantly, this is not to say that there are no other early indicators of a first conviction in adulthood, since such indicators may very well exist (e.g. Anderson et al., 2012), but merely that juvenile criminal records do not contain all the information needed to predict adulthood crime. In other words, the criminal justice system may be expected to deal with a significant proportion of cases involving “new” adult offenders, although the risk for recidivism among these individuals may generally be expected to be much lower than that of adult offenders with a previous juvenile record.

With respect to the convicted population, and in line with the conventional wisdom in recidivism research, the current thesis has shown the importance of criminal history, most notably the number of prior convictions, for predicting the risk for criminal recidivism (see Andrews and Bonta, 2010). In short, the risk for recidivism tends to increase across the first four to six convictions, after which it remains high and fairly stable (MacLeod et al., 2014). A novel finding in this thesis is the interaction between the number of prior convictions and gender in the prediction of recidivism, with the results (Study III) showing that those female offenders who had accumulated more than three convictions had virtually the same risk for relapse as their male counterparts. Moreover, while it is well known that the risk for recidivism is highest during the first couple of years following a prior conviction, after which it declines steadily among male samples (Nygaard Andersen and Skardhamar, 2017; Blumstein and Nakamura, 2009), the current thesis showed that the same pattern was replicated among females. Overall this suggests that it should be of most importance to work with rehabilitative efforts during the first couple of years following a conviction, particularly among those males and females who have accumulated more than three previous convictions. After the first couple of crime-free years, the risk for relapse may be expected to drop significantly.

Finally, the current thesis suggests that cohort statistics on crime may be a valuable tool for the criminal justice system in evaluating the aggregate crime trend (see also von Hofer, 2014). For one thing, since cohort statistics follow individuals throughout the period of their lives when the peak of criminality tends to occur, a substantial proportion of those individuals who commit more than just a few offenses during their lives will be included in the statistics.
Hence, despite being based on criminal justice sanctions, cohort statistics provide a more reliable way of measuring the development of criminal behavior over time (i.e. across successive birth cohorts) than cross-sectional official crime data (MacLeod et al., 2014; von Hofer, 2014).

With respect to the making of forecasts, and against the backdrop of the international crime drop (Farrell et al., 2014), von Hofer (2014) has noted that Swedish cohort statistics were early to show that the post-war increase in the crime trend had been broken at the beginning of the 1970s, and that a period of decreasing involvement in crime was to be expected (p. 176). The current thesis demonstrates that the crime rate across successive cohorts may capture divergent trends with respect to the proportion of individuals within the population who offend, i.e. participation, and the rate at which active offenders offend, i.e. frequency (Study IV). Given that the efficacy of crime prevention efforts will in part depend on the relative contribution of participation and frequency to the total volume of crime (Blumstein et al., 1988), the distinction between these measures may provide guidance in the extent to which crime prevention efforts should be directed at the total population (primary prevention) and the offender population (tertiary prevention). In this sense, cohort statistics should also provide a valuable tool for evaluating crime preventive efforts.

Concluding remarks

The robustness of the skewed crime distribution and the aggregate age-crime relationship gave rise to one of the more heated conflicts in criminology, known as the Great Debate, between proponents of the criminal career approach and its skeptics. This conflict has been immensely important for the rise of longitudinal research on crime, and for theories aimed at explaining crime across the life course. While the Great Debate is a closed chapter in the sense that longitudinal research on crime and its correlates has become dominant in contemporary criminology, the tension has continued between influential theories within the field of developmental and life-course criminology, most notably Terrie Moffitt’s Dual Taxonomy and Robert Sampson and John Laub’s General Age-Graded Theory of Informal Social Control. Not only do these theories make different predictions with respect to key empirical issues in longitudinal criminological research but, they also stake out different directions for future longitudinal research on crime and its correlates: a developmental perspective and a life-course view. The current thesis has been framed
around this tension and has had as an overarching aim to extend the empirical knowledge around longitudinal patterns of crime, particularly related to the significance of adulthood, gender, and birth cohort membership. In doing so, the hope has been to make a contribution in moving this debate forward, and to encourage theoretical developments around crime and the life course.

In conclusion, the four studies in the current thesis have together contributed to a number of new empirical findings around longitudinal patterns of convicted crime. First, the thesis suggests that adulthood is an important phase of life because youth conditions have limited value for predicting persistence in crime beyond the transition to adulthood, and because a non-trivial proportion of the convicted population is convicted for the first time for offenses committed in adulthood. Second, while it is well known that males are generally overrepresented in convicted criminality, the current thesis demonstrates that the female offending population becomes increasingly similar to the male offending population in terms of recidivism risk as convictions accumulate. This interaction between gender and the number of previous convictions in producing recidivism risk occurs in tandem with the cohort aging out of the juvenile years, thus highlighting the need to include females in order to further improve the knowledge on continuity and change in crime in adulthood. Finally, the current thesis shows that the typical criminal career has undergone significant changes both within and across gender groups during the historical decline of the aggregate conviction rate in Sweden. This suggests that theories aimed at explaining crime across the life course should be cautious about assuming constancy, or invariance, in criminality across birth cohort membership. Instead, the employment and extensive analysis of longitudinal multiple cohort data ought to provide a basis for furthering our knowledge on the inherent complexity of crime trends, while at the same time also locating the study of criminal careers in its historical context.
Sammanfattning (Swedish summary)

Ett välkänt faktum är att en liten andel av befolkningen svarar för majoriteten av alla brott. Detta är ett mönster som har gett upphov till såväl teoretiska som metodologiska kontroverser inom den kriminologiska ämnesdisciplinen. Debatten har i huvudsak förgs mellan ena sidan teorier som betonar betydelsen av tidigt etablerade riskfaktorer och på andra sidan teorier som tar utgångspunkt i att livsförlöppet är en föränderlig process där mer eller mindre förutsebbara omständigheter, på individ- och samhällsnivå, är centra för att förstå orsakerna bakom kontinuitet och förändring i brottsbenägenhet. Detta är en viktig kontrovers som utöver vår teoretiska förståelse kring brottslighetens orsaker även avser förmågan att predicera, och i förlängningen förebygga, en stor andel av samhällets brottslighet med riktade insatser.

Denna avhandling avser att fördjupa det empiriska kunskapsläget avseende kontinuitet och förändring i brott. Avhandlingen består av fyra delstudier som undersöker: förmågan att förutse brottslighet i vuxenlivet med information rörande individkaraktäristika, skola, familj och vänskapsrelationer i barndomen (Studie 1); hur stor andel av brottsligheten i vuxenlivet som kan hänföras till dem som debuterar i brottslighet under vuxenlivet (Studie 2); hur återfallsrisk bland brottsbelastade män och kvinnor varierar med graden av tidigare brottsbelastning över livsförlöppet (Studie 3); samt i vilken utsträckning brottsmönster över livsförlöppet förändras över födelsekohorter som växt upp under olika historiska tidsperioder (Studie 4). Studierna baseras i huvudsak på svenska registerdata, men innefattar även livshistorieintervjuer med män som i unga år registrerades för brott. I de olika delstudierna har kohorter födda från början av 1940-talet fram till mitten av 1980-talet kunnat följas över olika faser av livet.

Den första studien undersöker förmågan att förutse omfattande brottslighet i vuxenlivet med information rörande individkaraktäristika, skola, familj och vänskapsrelationer i barndomen. Studien använder data rörande ett riskurval om 200 pojkar som följdes upp med brottsdata till 59 års ålder. Studien visar att det finns ett tydligt samband mellan graden av ackumulerad risk i barndomen och risken att lagföras för brott i vuxenlivet. Då urvalet bestod av män som i unga är var registrerade för brott, och därmed var att betrakta som ett
tre eller fler lagföringar var återfallsrisken i det närmaste identisk. Informationen i lagföringen avseende brottstyp och påföljd hade liknande prediktionsvärde för återfallsrisk, där i synnerhet de lagföringar som innehöll stöld- och/eller narkotikarelaterade brott var viktiga prediktorer, även om narkotikarelaterad brottslighet i detta avseende var en något viktigare faktor bland kvinnorna. Både bland män och bland kvinnor avtog återfallsrisken på ett liknande sätt, där risken var relativt hög under de första ett till två åren för att därefter markant avta. I stort pekade studien på att hög återfallsrisk inte är begränsat till den manliga populationen utan att studiet av såväl kontinuitet och förändring i brott även bör inkludera kvinnor.

References


