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Chapter 2

Criminal trajectories of white-collar offenders

Abstract ¹⁶

Objective: This paper analyzes the criminal development and sociodemographic and criminal profile of a sample of prosecuted white-collar offenders. It identifies trajectory groups and describes their profiles based on crime, sociodemographic and selection offence characteristics. Methods: The criminal development of 644 prosecuted white-collar offenders in the Netherlands was examined using all registered offences from age 12 onwards. In addition, sociodemographic background information was gathered from the Netherlands Tax and Customs Administration and Municipal Personal Records Office. Trajectory analysis was conducted to approximate the underlying continuous distribution in criminal development by a discrete number of groups. Results: The criminal career characteristics and sociodemographic profile show a heterogeneous sample of white-collar offenders. Trajectory analysis distinguished four trajectory groups. Two low-frequency offender groups, totaling 78 percent, are characterized by their adult onset. The two high-frequency offender groups, totaling 22 percent, are characterized by their adolescent onset. Distinct and internally consistent offender profiles emerged for the four trajectory groups on the basis of crime, sociodemographic and selection offence characteristics. Conclusions: The diversity in offence patterns and offender profiles points to different (developmental) causes for white-collar crime and underlines the importance of further longitudinal research on white-collar offending from an integrated white-collar and life-course perspective.

2.1 Introduction

The criminal development of white-collar offenders has not received as much scholarly attention as the criminal development of other offender groups (Piquero & Benson, 2004). White-collar crime research tends to focus on circumstances surrounding the offence without examining criminal development throughout

16 This chapter was published as: Van Onna, J. H. R., Van der Geest, V. R., Huisman, W., & Denkers, A. J. M. (2014). Criminal trajectories of white-collar offenders. *Journal of Research in Crime and Delinquency*, 51, 759-784.

life, while life-course research - generally focusing on the early stages of life between adolescence and young adulthood - has paid little attention to white-collar offenders (DeLisi & Piquero, 2011). The few white-collar crime studies that followed a life-course approach are based on non-contemporary data (gathered in the 1970s) and are limited to a US-context (Benson & Kerley, 2001; Benson & Moore, 1992; Piquero & Weisburd, 2009; Weisburd & Waring, 2001; Weisburd et al., 1991; Wheeler et al., 1988). Also, the longitudinal data used in these studies does not contain information about adolescence, a period that is generally considered to play an important role in the individual's criminal development (Piquero, 2008). As a result, our knowledge about the criminal development of white-collar offenders in modern society is limited.

Using long-term retrospective data and advanced modeling techniques on a contemporary cohort, this study aims to advance knowledge about the criminal development of white-collar offenders by describing the development of offending in a sample of 644 prosecuted white-collar offenders in the Netherlands. This study is the first to describe the age-crime development from age 12 onwards for white-collar offenders. Trajectory analysis was used to distinguish trajectory groups. Subsequently, these groups were compared based on sociodemographic and crime characteristics and information on the selection offences.

2.1.1 Life-course criminology and white-collar offending

In the field of developmental and life-course criminology, criminal behavior is considered a function of complex multifaceted and interacting developmental processes (Blumstein et al., 1986). By focusing on development over the life-course and using advanced analytic techniques to investigate developmental patterns, much has been learned in the last decades about the relationship between age and crime, the criminal careers of offenders, and the key characteristics of criminals. The life-course perspective has caused a shift in criminological thinking, spurred theoretical development and lead to a wealth of empirical testing (Piquero & Weisburd, 2009). However, life-course criminology has almost exclusively focused on early-onset offenders, using relatively short observation periods (that often stop after early adulthood) and almost all studies deal with high-volume crime (Piquero, 2008; DeLisi & Piquero, 2011). The criminal career paradigm has failed to take into account crime that does not fit into the stereotypical image of street-crime offending, such as white-collar crime (for exception, see Piquero & Weisburd, 2009) and organized crime (see for exception Van Koppen et al., 2010). Relying on limited samples, and failing to recognize and account for white-collar offenders, conclusions drawn from this body of research may “inevitably lead to a biased and incomplete understanding of trajectories in crime” (Piquero & Benson, 2004, p. 149).

As life-course criminology aims to understand the development of criminal behavior over the entire life-course (Hagan & Palloni, 1998), the study of white-collar offenders can advance the empirical and theoretical debate in life-course criminology in several ways. First, the life-course analysis of a sample of white-collar offenders can shed light on the question whether adult-onset offending is a rare phenomenon, as is assumed by some scholars (Gottfredson & Hirschi, 1990; Moffitt et al., 2001) or is an artifact of the type of offenders under study (Eggleston & Laub, 2002). Second, analyzing an offender sample that develops differently from the general offender population, addresses important theoretical questions about the influence of static and dynamic factors in criminal development throughout life. Empirical research on how static factors such as low self-control (Gottfredson & Hirschi, 1990) or other traits developed early in life (Moffitt et al., 2001) account for white-collar offending in adulthood is scarce (see Piquero and Moffitt's study [2014] on workplace deviance and Benson and Moore's study [1992] for exceptions). Traditional life-course theoretical notions may not account for the development of offending in white-collar criminals in the same way it does for general offenders (Piquero & Benson, 2004). For example, strong social bonds - especially work - may not only foster desistance (Sampson & Laub, 1993), but may also create (new) opportunities for offending (Weisburd & Waring, 2001) and may even trigger offending when individuals - confronted with a personal or business crises - fear losing their "stake in conformity" (Piquero, 2011). Furthermore, the criminal development of white-collar offenders allows analyzing how static and dynamic factors may interact in different ways throughout life for subsets of white-collar offenders. Analyzing diversity of a little studied offender group, both in terms of developmental pathways and the characteristics associated with these pathways (Moffitt, 1993, 2006), will enhance our understanding of the development of offending throughout life.

2.1.2 Criminal development of white-collar offenders

Prior to the 1980s little was known about the criminal development of white-collar offenders. Until then, research in the offender-based tradition (following Sutherland, 1949) generated in-depth qualitative case studies that focused on situational factors (e.g., Braithwaite, 1985; Geis, 1977, 2007). However, it provided little empirical information about the personal and criminal backgrounds of white-collar offenders (Benson & Moore, 1992; Piquero & Benson, 2004; Weisburd et al., 1991). In fact, the existing image of white-collar offenders as 'one-shot' offenders who live a life of stability seemed at odds with the idea that longitudinal research was needed (Weisburd & Waring, 2001). In the late 1970s, the offence-based approach - where offenders were designated as

white-collar offenders by the *offences* they commit, rather than their social status or occupation (offender-based tradition) - challenged this idea. Criminologists gathered data on relatively large samples of officially registered white-collar offenders including their sociodemographic characteristics (Benson & Kerley, 2001; Benson & Moore, 1992; Weisburd et al., 1990; Weisburd & Waring, 2001; Wheeler et al., 1988). These studies demonstrated that white-collar offenders have a distinct criminal development from general offender populations: they start offending at a higher age, the duration of their criminal career is relatively long and they age out of crime much later in life. However, they resemble common criminals in their lack of specialization (Benson & Kerley, 2001; Benson & Moore, 1992; Weisburd & Waring, 2001).

After recognizing substantial heterogeneity in criminal activity and sociodemographic characteristics among offenders, researchers started to explore if different underlying groups of offenders could be identified (Piquero & Benson, 2004). Weisburd and Waring (2001), using qualitative classifications, identified three white-collar offender groups. The first and largest group comprises of low-frequency offenders that was subdivided in 'crisis responders', who engage in crime in response to some kind of perceived crisis, while 'opportunity takers' seem to respond to unusual sets of opportunities for white-collar crimes (Weisburd & Waring, 2001). The second offender group is a group of intermittent offenders, labeled as 'opportunity seekers'. They appear to live stable lives with long spells of non-offending and they follow a defined pattern of offending behavior that suggests they seek out opportunities to commit crime. The third group of persistent offenders was labeled as 'stereotypical criminals'. These offenders are characterized by active criminal careers, unstable lives and low self-control (Weisburd & Waring, 2001). In the only study utilizing longitudinal *trajectory* modeling, Piquero and Weisburd (2009) reanalyzed the data from the Weisburd and Waring study (2001). Using a follow-up period of ten years, they identified three trajectories: 'low-rate offenders' (71 percent), 'medium-rate offenders', that follow an intermittent criminal career pattern (25 percent), and 'high-rate offenders' that exhibit persistent criminal behavior across the follow-up period (5 percent).

By identifying extensive adult offending, prolonged criminal careers and different offender groups, these studies showed that longitudinal research on white-collar offenders is relevant for both life-course and white-collar research. However, to date, the empirical base for understanding the criminal development of white-collar offenders is small because of limited and non-contemporary samples, relatively short observation periods and sporadic use of longitudinal modeling. Moreover, the longitudinal data in these studies does not contain information on adolescent delinquency. Consequently, it remains

unclear how criminal behavior during adolescence, the focus of life-course criminology, corresponds to offending in adulthood, the focus of white-collar scholars (Piquero & Benson, 2004). As a result, the criminal career research of white-collar offenders has had little impact on white-collar and life-course criminology (Piquero & Weisburd, 2009).

2.1.3 Current study and research questions

In the current study we will describe the overall age-crime pattern, the sociodemographic background and the criminal trajectories of 644 individuals who were prosecuted for a white-collar offence by the Netherlands Public Prosecutors Service between 2008 and 2012. This study adds to the literature in a number of ways. First, by retrospectively analyzing the criminal development of a relatively large sample of white-collar offenders, using long-term observation coupled with advanced modeling techniques, we gain insight into the criminal development of a group of offenders that is typically missed in life-course criminology. Second, the present study is the first to include data on juvenile delinquency for a sample of white-collar offenders, enabling us to shed light on the relation between adolescent and adult (white-collar) offending (Piquero & Benson, 2004). Third, the sample used in the present study is a complete cohort of (prosecuted) white-collar offenders (not a stratified sample as was used in previous studies, e.g., Benson & Moore, 1992; Wheeler et al., 1988). Importantly, these offenders were prosecuted based on the seriousness of the selection offence rather than the specific type of selection offence (offence-based approach; but see § 2.2.2) or background of the offender (offender-based approach). All offenders were investigated and prosecuted by units dealing only with serious white-collar crime, i.e. offences committed over long periods, complex or organized in nature or resulting in large amounts of money defrauded. Hence, the critique of scholars (e.g., Steffensmeier, 1989) that white-collar crime researchers that use samples of officially registered offenders (Hirschi & Gottfredson, 1987) are in fact not studying 'real' white-collar crime but rather low-level frauds or small-time offences, is unwarranted for this sample. Finally, as the vast majority of longitudinal studies are conducted in Anglo-Saxon countries, including the previous studies on white-collar offenders (Piquero, 2008), the present study from a contemporary Western society provides a unique addition to the life-course literature.

With this study we seek to answer three research questions. First, what are the criminal career and sociodemographic characteristics of white-collar offenders in this sample? Second, which developmental trajectories can be distinguished? And third, do the trajectory groups differ in terms of sociodemographic characteristics, the type of criminal behavior and the kind of selection offences?

2.2 Method

2.2.1 Sample

The sample consists of 644 individuals who were prosecuted by the Netherlands Public Prosecution Service for white-collar crime cases between 2008 and 2012. The majority of individuals ($N = 510$, 79 percent) were prosecuted by the Netherlands Public Prosecution Service for Serious Fraud, for white-collar crimes where a government agency in the Netherlands was defrauded. These cases were brought to the attention of the prosecution service by regulatory agencies and law enforcement agencies, principally the Tax and Customs Administration and the Fiscal Information and Investigation Service. The remaining suspects ($N = 134$, 21 percent) were prosecuted by regional offices of the Netherlands Public Prosecution Service, for their involvement in intra-organizational white-collar crimes and white-collar crimes between companies, businesses or individuals. These cases were investigated by specialized police units, and were predominantly brought to the attention of the authorities by individuals or companies reporting the infraction (Functioneel Parket, 2012).

The sample represents a complete cohort of serious white-collar crime suspects: the selection criterion was that they were named as suspects in preliminary investigative reports of white-collar crime cases between January 2008 and May 2009.¹⁷ The cases were selected for the seriousness of the crime – cases in which large amounts of money were defrauded, where offences were complex or organized in nature or where the offences were committed over a long period - unrelated to the type of offences.

Table 2.1 provides an overview of the prosecuted offences in a non-judicial classification. The white-collar cases were classified in a maximum of three not-mutually exclusive offence type categories, either because in a specific case offenders were prosecuted for different offences (tax fraud and money laundering), or because it provided further insight in the offence type (e.g., labor-related tax

17 As noted in Chapter 1 (§ 1.6), the cohort consists of all individuals from the preliminary investigative reports of white-collar crime cases (between January 2008 and May 2009) whose prosecution had started at the time the sample was established, and whose identity and migration history could be established in the Municipal Personal Records Office (see this Chapter, § 2.2.2).

fraud).¹⁸ Table 2.1 shows that the most frequent offences were frauds related to taxes and customs, bankruptcy fraud, credit and mortgage fraud, labor fraud and money laundering fraud.¹⁹ Although the sample was not based on offence categories, the selection offences broadly fit the offence-based definition of white-collar crime used in previous criminal career studies (Benson & Moore, 1992; Weisburd et al., 1991; Weisburd & Waring, 2001; Wheeler et al., 1988).²⁰ The selection offences include ‘entrepreneurial crimes’ such as swindles against companies (Friedrich, 2007), ‘vocational crimes’ like loan credit fraud (Geis, 1974), intra-organizational ‘occupational crime’ such as embezzlement and ‘corporate crime’ such as tax fraud committed on behalf of a company (Clinard & Quinney, 1973). The sample does not include cases dealt with by the regional or local police and the investigation services of the Dutch Municipalities or cases that were sanctioned under administrative or civil law.

18 The Netherlands penal code for money laundering is regularly used in the prosecution of white-collar offences. The code states that it is forbidden to disguise or conceal the nature of the property or money obtained from a crime. In a typical case, offenders evade taxes and are prosecuted for tax fraud and money laundering. The offence money laundering is seldom the primary offence ($N = 26$) but often a subsidiary offence ($N = 117$) or tertiary offence ($N = 8$). For example, in one money laundering case offenders committed missing trader intercommunity fraud (using shell companies in different countries) and were prosecuted for this tax offence and money laundering of the illegal profits.

19 The tax frauds consist mainly of large scale sales tax frauds and wage taxes. Customs frauds consist of different types of offences related to evading custom taxes and intellectual property offences like the import and distribution of illegal non-registered medicine. In bankruptcy fraud cases, offenders extract large amounts of money, cars and other valuables from the company before going bankrupt. In credit and mortgage frauds, white-collar offenders use false statements and loan administration to defraud the bank. In an exemplary labor fraud case, the offenders hired ‘illegal aliens’ to work in the fields and evade the tax on wages using falsified registration and administration to avoid detection.

20 In the present study antitrust offences and bribery of government officials are not included (Functioneel Parket, 2012).

Table 2.1 Non-Judicial Classification of Selection Offence Cases ($N = 915$)

Category of Selection Offence Case	Number of Offenders in Category
Tax Fraud	288
Money Laundering Fraud	151
Customs Fraud	75
Credit and Mortgage Fraud	65
Bankruptcy Fraud	59
Swindles against Individuals	58
Labor Fraud	35
Swindles against Companies	32
Fraud against Employer	28
Fraud by Individuals	23
Market Abuse Fraud	22
ID Fraud	20
Subsidy Fraud	19
Securities Fraud	16
Credit-card Fraud	11
Computer Crime	9
Insurance Fraud	4
Total	915

2.2.2 Variables

Data on offending

Historical offending information was based on offences registered in the Judicial Documentation System (JDS) of the Netherlands Ministry of Security and Justice (comparable with ‘rap sheets’). These abstracts contain information on every case that is registered at the Netherlands Public Prosecution Service. They also contain information on the date of commission, the type of offence and incarceration. We used a copy of JDS, which is specifically designed for research purposes: the Research and Policy Database for Judicial Documentation (OBJD). An important characteristic of this database is that the judicial contacts that are registered are never removed and remain available after official retention periods have expired. The judicial documentation in this study spans juvenile and adult offending (i.e. from age 12 and up), with 12 years being the minimum age of criminal responsibility in the Netherlands.

Data on sociodemographic background

Sociodemographic information about the sample was obtained from the Netherlands Municipal Personal Records Office and includes information on age, sex and migration history. Only individuals whose identity and migration history could be established in the Municipal Personal Records Office were included in the present study. Information on occupational and economic status was gathered from the Netherlands Tax and Customs Administration. This information includes information on employment, the type of (white-collar) position (in 2012), income, homeownership and financial standing (in 2011).

2.2.3 Method of analysis

The analyses proceeded in four steps. First, the sociodemographic profile and criminal career dimensions for the entire sample were described. Second, the age-crime development was described from age 12 onwards for all offending, for non-white-collar offending and for white-collar offending. Third, using group-based trajectory modeling we identified different developmental trajectories. Group-based models (Nagin, 2005) approximate the unknown underlying continuous distribution of offending by a discrete number of groups. In estimating criminal development over time, parameters defining that development are allowed to vary across groups, so that different groups may show differently shaped trajectories. A zero-inflated Poisson model was fitted to account for the fact that offences registered in JDS are relatively rare events. The Bayesian Information Criterion (BIC) and other criteria of model fit are used to determine the optimal number of groups. Trajectory group membership, based on the highest individual probability of membership is then used as a categorical variable.

A substantial proportion of the individuals (22 percent) had been incarcerated at least once as of age 18. As offending is less likely when a person is incarcerated (especially with regard to white-collar offences), time spent incarcerated was controlled for by using a yearly measure for exposure when estimating trajectories (Piquero et al., 2001).²¹ One third of the offenders were born outside

21 Although in principle, exposure can vary from 1 (no incarceration) to 0 (365 days of incarceration), we “weakened” the effect of this correction, because overlapping dates of conviction and dates of incarceration in the judicial documentation would result in disproportionately high offence rates per year for a substantial number of respondents. In estimating the development trajectories, we therefore applied the following formula, which results in a minimum exposure of 0,5: $Exposure = 1 - (\text{Number of Incarcerated} / 730)$, per respondent per year.

of the Netherlands (33 percent). A substantial portion of the respondents moved in and out the Netherlands at least once during their lives (59 percent). Only respondents whose migration history could be established using data from the Municipal Personal Records Office were included in the sample. We then controlled for censoring, caused by shorter observation periods, due to migration or death (four respondents had died). Unobserved years were coded as missing and did not contribute to estimating the trajectories.

In the fourth and final step of our analyses, building on the outcomes of the trajectory models, the profiles of offenders were explored by describing sociodemographic characteristics, criminal behavior and selection offences. ANOVA and Chi Square analyses and Bonferroni tests were used to examine if trajectory groups differed significantly from one another.

2.3 Results

2.3.1 Sociodemographic profile and crime characteristics

Table 2.2 shows the sociodemographic characteristics of the sample. The sample consists mainly of middle aged men with average income. The majority in the sample ($N = 465$, 72 percent) received income either from an employer, from being self-employed or business owner, or a benefit from a government agency (in 2011).²² Many held white-collar positions in companies or other legal entities (in 2012).²³ Although there is substantial diversity in sociodemographic background characteristics, the sample can broadly be described as middle-class based on income level and homeownership rate (Centraal Bureau voor de Statistiek, 2013a, 2013b).²⁴

22 The income of the other individuals ($N = 179$) could not be assessed in this way. These individuals may have earned income in a different way in 2011. According to experts of the Tax and Customs Administration the two common alternative sources of income are business owners (private limited liabilities companies) that don't pay themselves salary (but live off the profits and dividends) and individuals with 'black' income, unknown to the Tax and Customs Administration.

23 The categories employed, receiving benefits and holding a white-collar position are not mutually exclusive. Individuals can receive income as an employee and/or receive income from one of the different social security benefits and/or be self-employed.

24 The average personal income in the Netherlands was 28,700 euro in 2011 (Centraal Bureau voor de Statistiek, 2013a). The percentage of homes that were owned (not rented) was 55.3 percent in 2011 (Centraal Bureau voor de Statistiek, 2013b).

Table 2.2 Sociodemographic and Crime Characteristics of Sample ($N = 644$)

Sociodemographic Characteristics				
	Percentage		Mean	SD
Man	84.9	Age	41.7	11.64
Homeownership	38.4	Income	32,194	39,210.43
Business Owner	17.9	Assets	43,327	198,891.65
Director/ Manager	28.1	Liabilities	152,700	1,331,707.51
Managing Partner	11.5			
Self Employed/ Small Enterprises	24.5			
Social Security or Unemployment Benefit	22.4			
Crime characteristics				
1 Offence	17.1	Onset Age all Offending	31.2	12.69
2 - 4 Offences	32.7	Onset Age White-collar Offending	35.8	11.59
5 - 9 Offences	24.6	Frequency all Offending	8.78	12.74
10 or more Offences	25.6	Frequency White-collar Offending	3.82	4.86
		Average nr. of Offences per Year (λ)	.38	.63
		Average nr. of White-collar Offence per Year (λ)	.16	.24

Table 2.2 also depicts the crime characteristics of the sample. Overall, findings show that many offenders have committed more than one offence and that they offend with moderate frequency (both in absolute numbers and in lambda scores). They start offending well into adulthood (onset age for white-collar offending is slightly higher) and the duration of the criminal career is extensive: between the first and last recorded offence the average duration is 14.5 years. However, it should be noted that we have no substantial follow-up data after the selection offence.

Table 2.3 shows conviction rates by age for different types of offending.²⁵ Overall offending in adolescence (age 12-17) is low with the exception of property crimes (9.2 percent). In early adulthood (age 18-29) a substantial proportion commits non-white-collar offences, such as property offences (17.4 percent), violent offences (16.0 percent) or traffic offences (17.5 percent). Few tax offences and other financial-economic offences are committed in early adulthood, but other white-collar offences punishable under the penal code show a sharp increase (28.7 percent). In adulthood (30-49 years) tax fraud and financial-economic offences are committed more frequently than other offence types. In late adulthood (50 plus) offenders are mainly active in white-collar offences.

Table 2.3 Crime Mix and Escalation per Age Category (*N* = 644)

	Type of Offence							
	Fraud in Penal Code	Tax Fraud	Finec Fraud	Property	Violence	Drugs	Traffic	Other
Total (%)	83.9	32.9	27.5	26.7	26.7	18.3	31.4	43.9
Age 12 - 17 (%)	1.4	.2	.6	9.2	5.0	.5	1.7	6.4
Age 18 - 29 (%)	28.7	5.4	9.2	17.4	16.0	8.1	17.5	25.0
Age 30 - 49 (%)	54.2	19.6	17.5	10.9	14.0	11.1	21.4	24.4
Age 50 plus (%)	16.9	9.2	3.9	1.6	2.5	1.7	4.0	5.6

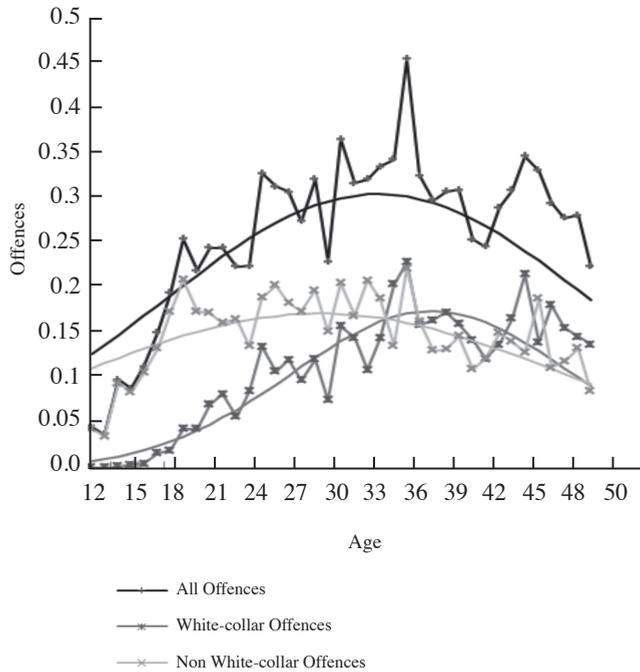
2.3.2 The age-crime curve of offending

Figure 2.1 shows the age-crime curve for the entire sample from ages 12 to 50 by three offence categories: all offences, white-collar only offences, and non-white-collar offences. It shows that the overall development of offending takes a bell shaped curve. Offending starts in adolescence and increases until it peaks at age 34 with an average of .3 offences per year. When breaking down the general pattern into white-collar offending and non-white-collar offending, a

²⁵ For classification we used the standard classification of offences in the Netherlands (Centraal Bureau voor de Statistiek, 2000).

crescent and descending wave appears. The age-crime curve for non-white-collar offending has little slope. It increases slowly during adolescence and early adulthood, until it peaks at age 29 (at an average of .17 offences per year). White-collar offending, on the other hand, is very rare in adolescence. It increases steadily in early adulthood and peaks at the age of 38 with an average of .17 offences per year. Subsequently it drops as offenders desist from all offending before age 50, when rates are similar to non-white-collar offending.

Figure 2.1 Age-crime Curves for All Offences, White-collar Offences and Non-White-collar Offences ($N = 644$)



2.3.3 Developmental trajectories of offending

To examine whether different trajectories of (all) offending can be distinguished, several multiple-group models were tested. A four-group model resulted in a BIC value of -9,776.25, higher than that of quadratic models distinguishing one to three groups (see Table 2.7 in Appendix). BIC values were slightly better for the five-group model, but the extra identified trajectories did not differ meaningfully

from the four-group model as only gradual differences in low-frequency groups occurred. BIC values continue to improve slightly for six and even seven groups, but again only gradual differences between the low-frequency offender groups appeared. As trajectory modeling is intended as an approximation of a more complex underlying reality (Piquero & Weisburd, 2009), the objective is not to identify the ‘true’ number of groups. Instead the aim is to identify as simple a model as possible that displays the distinctive features of the population distribution of trajectories (Nagin & Tremblay, 2005). Reasoning along these lines a four-group model presented a meaningful distinction in order to describe the differences in criminal development between subgroups.

Table 2.4 Zip Quadratic Model with Four Groups ($N = 644$)

	Group			
	SWO	AO	AP	SC
<i>N</i>	258	253	108	25
Estimated Model Parameters				
Intercept	-11.69*	-6.45*	-2.45*	.31
Linear	4.51*	3.40*	1.75*	.71*
Quadratic	-.44*	-.43*	-.22*	-.11*
Model Characteristics				
Median Group Probabilities	.97	.94	.98	1.0
Mean Group Probabilities	.91	.88	.91	.97
Inflation Parameter (alpha)	1.69*	.86*	.51*	-.30*

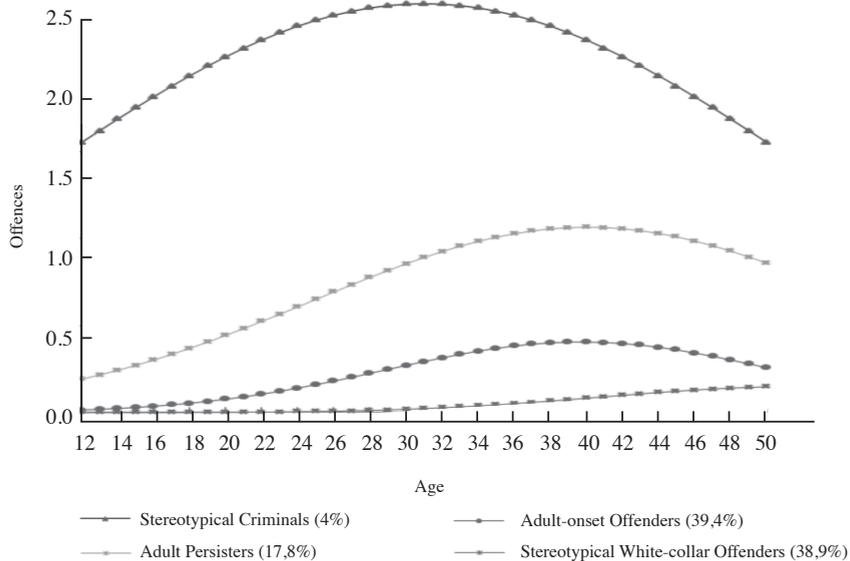
Note: SWO = Stereotypical White-Collar Offenders, AO = Adult-onset Offenders, AP = Adult Persisters, SC = Stereotypical Criminals; * $p < .05$

The inflation parameters resulting from the zero-inflated Poisson model were estimated for each group and turned out significant. Group probabilities for the four-group model were high, all averaging above .88 and well above the .7 threshold recommended by Nagin (2005). The odds of correct classification for the groups ranged from 11.48 to 808.25, indicating high assignment accuracy. Given that the four-group model performed well on all the other criteria of model fit, we chose the four-group model for further analysis (Table 2.4).

Figure 2.2 depicts the four trajectories. The groups were labeled as follows: *stereotypical white-collar offenders* (SWO), *adult-onset offenders* (AO), *adult persisters* (AP) and *stereotypical criminals* (SC). The two low-frequency groups, *stereotypical white-collar offenders* and *adult-onset offenders*, make up 78.2 percent of the sample. The SWO trajectory (38.9 percent) shows no criminal activity in adolescence and early adulthood. Offending starts to rise very slowly when SWOs are in their mid-thirties and peaks at the age of 50 with an estimated average of .15 offences per year. Criminality of the second low-frequency group, AO offenders (39.4 percent), develops differently. Offending starts in early adulthood and steadily increases until it peaks at the age of 40 with an estimated average of 0.41 offences per year.

The two high-frequency groups make up about a fifth of the sample (21.8 percent). The APs (17,8 percent) start offending in adolescence and continue to increase offending until they peak at age 40 with an estimated average of 1.1 offences per year. The smallest trajectory group consists of individuals who are very active criminally. These SCs (4 percent) start their criminal careers in adolescence at a high rate and subsequently continue offending. Peaking at the age of 31 (2.3 offences) their rate of offending eventually declines more sharply than that in the other trajectories.

Figure 2.2 Developmental Trajectories of Offending from Ages 12 to 50 ($N = 644$)



2.3.4 Sociodemographic and criminal profiles of trajectories

After distinguishing the four trajectory groups, we compared them on a number of sociodemographic characteristics, crime characteristics and the types of selection offences.²⁶ Table 2.5 shows that the trajectory groups differed significantly from each other on many sociodemographic and crime characteristics, revealing distinct and internally consistent profiles.

SWOs start offending at a low rate (mostly white-collar offences) when they are well into adulthood. In terms of sociodemographic characteristics, as well as their selection offences (Table 2.6), SWOs resemble the stereotypical image of white-collar criminals: they have higher incomes, assets and liabilities, have relatively few benefits and are overrepresented in white-collar positions such as business owner, director or manager. They are relatively often prosecuted for traditional white-collar crimes such as market abuse fraud (such as insider trading) and securities fraud.

The second low-frequency trajectory group, AO offenders, has a different criminal and sociodemographic profile. The mean age of onset is considerably lower, their rate of offending is substantially higher, and they are more crime versatile. In terms of socio-economic characteristics they appear to be middle-class and compared to SWOs they are more often involved in bankruptcy fraud, customs fraud, credit and mortgage fraud and money laundering fraud.

The largest of the high-frequency trajectory group, APs, are criminally active from adolescence onwards and persist in offending at a much higher rate with low specialization. Their sociodemographic characteristics indicate below-average incomes, high social benefit rates, and a relatively low percentage of homeownership. However, a substantial portion holds a white-collar position. The selection offences fall somewhat between the low-frequency offender groups (e.g., tax fraud, customs fraud) and the offences committed by SCs (e.g., credit-card fraud, swindles).

These SCs start out in their criminal careers during early adolescence, their overall rate of offending is high and they are very crime versatile. SCs have low income, little assets and are rarely homeowner, but again a substantial portion holds white-collar positions. SCs are typically involved in swindles against individuals and companies, money laundering fraud and credit-card fraud.

26 To explore and describe profiles of the trajectories we use the data (non-corrected for incarceration, migration and censoring) described in § 2.3.1.

Table 2.5 Sociodemographic and Crime Characteristics per Trajectory Group (*N* = 644)

	Group				Chi Square / F Values	Significant
	SWO	AO	AP	SC		
<i>N</i>	258	253	108	25		
Sociodemographic Characteristics						
Age	49.1 ^a	38.3 ^b	34.5 ^{c,d}	29.7 ^d	92.47	***
Man (%)	81.4 ^a	84.2 ^{ab}	92.6 ^b	96.0 ^{ab}	9.98	*
Homeownership (%)	54.7 ^a	36.4 ^b	11.1 ^c	8.0 ^c	73.05	***
Income	44,089 ^a	29,649 ^{b,d}	11,741 ^{c,d}	5,868 ^d	16.78	***
Assets	67,311	35,517	6,527	4,081	2.35	
Liabilities	433,442	30,915	2,254	1,085	.81	
Business Owner (%)	21.3 ^a	19.8 ^{ab}	8.3 ^c	4.0 ^{b,c}	12.68	**
Director/ Manager (%)	31.8 ^a	31.6 ^a	14.8 ^b	12.0 ^b	15.92	***
Managing Partner (%)	9.3	15.0	9.3	8.0	5.14	
Self Employed/ Small Enterprises (%)	20.5	26.9	29.6	20.0	4.76	
Social Security or Unemployment Benefit (%)	16.3 ^a	22.5 ^{ab}	33.3 ^c	36.0 ^{b,c}	15.67	**
Incarceration (%)	4.3 ^a	16.2 ^b	60.2 ^c	96.0 ^d	224.57	***
Incarceration Time (in years)	.84	.90	.75	.86	3.03	*
Crime characteristics						
Onset Age all Offending	43.3 ^a	25.5 ^b	19.1 ^c	15.3 ^c	412.49	***
Onset Age White-collar Offending	45.8 ^a	30.7 ^b	27.0 ^c	21.6 ^d	234.55	***
Frequency all Offences	2.9 ^a	7.0 ^b	19.0 ^c	43.3 ^d	203.44	***
Frequency White-collar Offences	2.1 ^a	3.7 ^b	6.6 ^c	10.3 ^d	42.88	***
Avg. nr. of Offences per Year (lambda)	.11 ^a	.28 ^b	.82 ^c	2.22 ^d	210.29	***
Avg. nr. of White-collar Offences per Year (lambda)	.08 ^a	.16 ^b	.27 ^c	.52 ^d	40.29	***
Crime mix						
Tax Fraud (%)	34.5	32.0	33.3	24.0	1.29	
Finrec Fraud (%)	16.7 ^a	37.2 ^b	33.3 ^b	16.0 ^{ab}	30.53	***
Fraud in Penal Code (%)	73.6 ^a	90.1 ^b	90.7 ^b	96.0 ^{ab}	33.7	***
Violence (%)	7.4 ^a	24.1 ^b	63.9 ^c	92.0 ^d	180.91	***
Traffic (%)	16.3 ^a	37.2 ^b	48.1 ^b	56.0 ^b	52.39	***
Drugs (%)	2.7 ^a	21.3 ^b	39.8 ^c	56.0 ^c	100.60	***
Property (%)	3.5 ^a	25.3 ^b	68.5 ^c	100 ^d	236.37	***
Other Offences (%)	16.3 ^a	49.4 ^b	84.3 ^c	100 ^c	186.38	***
Three Types of Offences or Less (%)	93.4 ^a	62.8 ^b	23.1 ^c	8.0 ^d	214.27	***

Note: SWO = Stereotypical White-Collar Offenders, AO = Adult-onset Offenders, AP= Adult Persisters, SC = Stereotypical Criminals; * $p < .05$, ** $p < .01$, *** $p < .001$; Each superscript letter denotes a category whose column proportions do not differ significantly from each other at the .05 level

Table 2.6 Selection Offences per Trajectory Group in Percentages (*N* = 644)

	Group				Chi Square Values	Significant Values
	SWO	AO	AP	SC		
<i>N</i>	258	253	108	25		
Tax Fraud	50.0	43.1	39.8	28.0	7.06	
Money Laundering Fraud	17.1 ^a	28.5 ^b	25.0 ^{ab}	32.0 ^{ab}	10.58	*
Customs Fraud	8.5 ^{ab}	13.8 ^{bc}	16.7 ^c	0 ^a	9.56	*
Credit and Mortgage Fraud	8.5	10.7	12.0	12.0	1.34	
Bankruptcy Fraud	8.1	11.9	6.5	4.0	4.27	
Swindles against Individuals	6.6 ^a	6.3 ^a	14.8 ^b	36.0 ^c	30.74	***
Labor Fraud	7.4	4.3	3.7	4.0	3.81	
Swindles against Companies	4.3	5.1	5.6	8.0	.85	
Fraud against Employer	3.5	4.7	4.6	8.0	1.38	
Fraud by Individuals	5.4	2.4	2.8	0	4.8	
Market Abuse Fraud	5.0	3.2	.9	0	5.02	
ID Fraud	2.3	3.2	5.6	0	3.48	
Subsidy Fraud	3.5	2.8	2.8	0	1.06	
Securities Fraud	3.5	2.4	.9	0	2.81	
Credit-card Fraud	.4 ^a	0 ^a	5.6 ^b	16.0 ^b	47.01	***
Computer Crime	0 ^a	2.4 ^{bc}	.9 ^{ac}	8.0 ^b	13.48	**
Insurance Fraud	0.8	0.8	0	0	1.05	

Note: SWO = Stereotypical White-collar offenders, AO = Adult-onset Offenders, AP= Adult Persisters, SC = Stereotypical Criminals; * $p < .05$, ** $p < .01$, *** $p < .001$; Each superscript letter denotes a category whose column proportions do not differ significantly from each other at the .05 level

2.4 Discussion

To date, life-course criminology has paid little attention to white-collar crime (DeLisi & Piquero, 2011) and consequently little is known about the criminal development of white-collar offenders (Piquero & Benson, 2004). This study is the first to describe the criminal development of a relatively large sample of white-collar offenders since data gathering efforts in the 1970s. It is the first longitudinal study that analyses white-collar offending in a non-US-context and the first study that includes data on juvenile delinquency. A number of important findings stand out and enhance our understanding of the criminal development of white-collar offenders.

First, we find that our sample of white-collar offenders represents a heterogeneous group of offenders, both in sociodemographic characteristics as well as in criminal behavior. This is in line with earlier studies that describe white-collar offenders as a mixed group of individuals that come from different walks of life with distinct criminal behavior patterns (Benson & Kerley, 2001; Benson & Moore, 1992; Weisburd et al., 1991; Weisburd & Waring, 2001; Wheeler et al., 1998).

Second, our findings show - consistent with these earlier findings - that the majority of offenders start offending in adulthood, they are convicted for a variety of offence types and they persist in offending over long periods of the life-course. Using prosecution data from age twelve onwards, our study shows that the overall criminal development of white-collar offenders takes a flat bell shaped curve with a peak in their mid-thirties. When breaking down the general age-crime curve, non-white-collar offending is relatively high and remains stable over the life-course. At the same time white-collar offending increases sharply in early adulthood and peaks around age forty. This simultaneous increase in white-collar offending and relative stability in non-white-collar offending has not been described before.

Third, we identified four distinct trajectories of offending. Distinct and internally consistent offender profiles emerged for the four trajectory groups on the basis of sociodemographic characteristics, crime characteristics and selection offences: *stereotypical white-collar offenders* (SWOs), *adult-onset offenders* (AO offenders), *adult persisters* (Aps) and *stereotypical criminals* (SCs). SWOs, coming from a high social background, occupying white-collar positions and showing low-frequency specialized offending, resemble the typical 'one-shot' offenders such as those described in the offender-based tradition (e.g., Sutherland, 1949). AO offenders, on the other hand, have middle-class backgrounds and follow an intermittent pattern of offending with moderate specialization in white-collar offending. High-frequency offenders, totaling one

fifth of the sample, show a distinct sociodemographic and criminal profile. SCs are characterized by their unstable lives and high frequency offending. The early crime onset and generalist and persistent offending of this group, resembles the behavior of the life-course persistent offender subtype described by Moffitt (1993, 2006). APs, on the other hand, are considerably less criminal, but still fit the sociodemographic and criminal profile of common offender populations. The profiles of these high-frequency offenders suggest that stable individual-level factors, such as low levels of self-control, play a substantial role in the criminal development of these white-collar offenders (Gottfredson & Hirschi, 1990; Weisburd & Waring, 2001).

In summary, the early onset for a substantial subset of the sample, qualitative differences between offender groups, and the long-term criminal career patterns suggest that white-collar offending cannot be explained by situational factors alone (as is often the focus in white-collar literature). Alternatively, the sharp increase of offending in adulthood and late-onset offending patterns, found in this study, are not easily accounted for by life-course theories and raise questions about the interaction of stable, individual-level factors and dynamic, situational factors in the criminal development throughout life. For a more integrated approach to white-collar and life-course criminology, two offender profiles stand out: AO offenders and APs. Falling outside the ideal-typical offender types studied in life-course criminological (SCs) and white-collar crime literature (SWOs), these offending patterns may result from a complex multitude of interacting developmental processes and criminal opportunities. Given that they remain criminally active well beyond the age at which most common offenders desist from crime, the APs possibly missed out on transitions in early adulthood that foster desistance from crime (Sampson & Laub, 1993). However, their 'life of crime' apparently does not narrow their legitimate opportunities completely (Gottfredson & Hirschi, 1990). Instead of fostering desistance, white-collar positions and jobs (many are self-employed) may function as an opportunity structure enabling offenders to develop from *crime in the streets* to *crimes in the suites* (in reference to Bonger, 1916). On the other hand, AO offenders combine a stable middle-class background, often with a white-collar position as an owner, director or manager of a company, with intermittent prolonged offending. This sociodemographic background and offending pattern bares resemblance to the 'opportunity seekers' who "present a complex mix of traits associated with both deviance and conformity" (Weisburd & Waring, 2001, p. 90). Possibly, for these offenders, traits - latent in adolescence - such as a desire for control (Piquero, Schoepfer, & Langton, 2008) or high self-control and calculative behavior (Benson & Moore, 1992) become criminogenic in adulthood enabling them to create or respond to specific crime opportunities.

Finally, we point to some limitations of the present study and briefly outline recommendations for future research. First, the follow-up period after the selection offence is limited, not enabling us to map desistance in this sample. Second, our study may underestimate offending by using officially registered and only criminal offences as a measurement of crime. Recent studies using self-report of white-collar offending indicate that the ‘true’ rate of offending by white-collar offenders may be higher (Menard et al., 2011; Morris & El Sayed 2013). Furthermore, as many white-collar offences are sanctioned administratively (Weisburd & Waring, 2001), the present findings may underestimate white-collar offending. By including regulatory tax violations in future studies, we hope to get a more detailed reconstruction of white-collar criminal behavior. Finally, incorporating dynamic sociodemographic data as well as in-depth qualitative data (interviews and probation officers assessments) in future studies, will further contribute to a more detailed understanding of the life-course development of white-collar offenders.

2.5 Appendix

Table 2.7 Bayesian Information Criterion (BIC) Values for Different Group Models
($N = 644$)

Groups	Bayesian information Criterion Value
1 group	-11120.43
2 groups	-10112.89
3 groups	-9875.35
4 groups	-9776.25
5 groups	-9710.44
6 groups	-9701.73
7 groups	-9693.71
