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Chapter 4

Social bonds and white-collar crime: A two-study assessment of informal social controls in white-collar offenders

Abstract ⁴¹

In two studies this paper examines Sampson and Laub's age-graded theory of informal social control in white-collar offenders. Using register data Study 1 operationalizes and compares bonds of white-collar offenders with distinct organizational positions and ages of crime onset, to bonds of matched controls, while Study 2 uses interview data gathered by the Dutch Probation Services to access bonds within a subsample of white-collar offenders of Study 1. The results show that white-collar offenders, including those who occupy executive positions and those with an adult-crime onset, were characterized by weakened bonds compared to matched controls. Results also reveal that white-collar offenders with a delinquent youth had weaker bonds compared to those with an adult-crime onset. The paper concludes that weakened bonds are likely to substantially contribute to explaining why offenders engage in white-collar crime. Implications for white-collar crime research, life-course criminology and policy are discussed.

4.1 Introduction

In July 2009 Marc Dreier, a well-known and once successful Manhattan attorney and owner of the law firm that bore his name, is sentenced to a 20-year prison sentence for defrauding investment funds for a total of around 750 million dollars. After pleading guilty and awaiting his sentence, Dreier described the circumstances that led him to his crimes in the documentary *Unraveled* (Bailey, Cantor, & Simon, 2011) as follows: "I was going through a divorce. I felt isolated. I really did not have any relationship with anybody personal or professional that could give a sort of moral grounding." The central notions from social control theory (Durkheim, 1951; Hirschi, 1969; Sampson

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& Laub, 1993) clearly resound in his account: weakened bonds to important others in his social life (wife, community) and his economic life (associates, colleagues) made him more susceptible to business temptations and more prone to take advantage of the criminogenic opportunities that were open to him in his executive position, leading him eventually to drift away from moral order. In line with such anecdotal evidence, scholars from the field of white-collar criminology have repeatedly argued that a deterioration in social bonds can explain why adult individuals become involved in fraud, embezzlement or corruption, while others in similar positions refrain from doing so (see Braithwaite, 1989; Engdahl, 2011, 2015; Lasley, 1988).

The most influential of the modern social control theories, Sampson and Laub's *Age-graded theory of informal social control* (1990, 1993; see also Laub & Sampson, 2003), seems well suited to understand white-collar crime offenders' behavior as it explains how informal social controls are age-graded and shape the propensity for individuals to engage in crime throughout the life span. Although typically used to understand crime in offenders with delinquent youths, the theory also hypothesizes that social ties can dwindle in later stages of life, even in individuals who appear to have successfully adapted to adult social roles and had no contact with the justice system until adulthood, as exemplified in the case of Marc Dreier (Sampson & Laub, 1993, p.141). Despite the theory's comprehensive framework, the association between informal social controls and white-collar crime is still poorly understood and highly debated among white-collar crime scholars (e.g., Benson, 2016, p. 267; Friedrich, 2010, p. 212). A few studies have provided tentative evidence for weak social bonds in white-collar offenders but were either not explicitly aimed at conceptualizing or examining Sampson and Laub's theory (e.g., Menard & Morris, 2012; Piquero et al., 2016) or were limited in terms of generalizability (e.g., Engdahl 2011, 2015; Hunter, 2015). With systematic research lacking, key notions from the theory remain underexplored theoretically and unexamined empirically, and it is unclear whether and to what extent white-collar offenders are characterized by weak bonds to society.

This present paper consists of two studies. Study 1 operationalizes and examines Sampson and Laub's *Age-graded theory of informal social control* in a sample of white-collar offenders, including those offenders who occupy executive positions in organizations, and compare them to individuals with similar sociodemographic and organizational profiles. In order to understand whether weakened bonds underlie crime not just in early-onset white-collar offenders but in white-collar offenders "even if non-delinquent as a youth" (Sampson & Laub, 1993, p. 141), we also distinguish between offenders who had no contact with the law in their youth and those with a delinquent youth

(crime onset before age 18). In making this categorization and comparison, the current study is one of a few studies to investigate the role of social controls in crime causation in adult (onset) offenders (Eggleston & Laub, 2002; Kempf, 1993; Lilly, Cullen, & Ball, 2014, Van Koppen et al., 2014).

The smaller second study aims to increase the validity of Study 1. Although Study 1 narrowly follows Sampson and Laub's theory (1993) by gauging social bonds across the social and economic life domain over a prolonged observation period (using register data from the Netherlands Tax and Customs Administration), the measures are novel. Study 2 therefore assesses the bond to society with a validated measure based on the Dutch Probation Services data (see Lamet, Dirkzwager, Denkers, & Van der Laan, 2013) within a subsample of Study 1: white-collar offenders who were interviewed and assessed by the Probation Services. This measure is based on Hirschi's social control theory (1969), one of the theories that provided the 'organizing principle' for the *Age-graded theory of informal social control* (Sampson & Laub 1993, p. 18). Finding similar results while using an independent measure for the bond to society in terms of operationalization, collection method and data, will expand the validity of the outcomes of the present paper.

4.1.1 Conventional lives of white-collar offenders?

Since Sutherland (1940) coined the term white-collar crime in 1939 and directed criminological attention away from the streets to office buildings, the question of how to characterize the perpetrators has been at the center of much debate. White-collar offenders have been defined either by their social status or occupational and organizational position (e.g., Sutherland, 1949) or, alternatively, by the nature of the fraudulent offences they have committed (e.g., Weisburd & Waring, 2001). However, irrespective of the definition, scholars have generally concluded that white-collar offenders seem "conventionally socialized individuals" (Piquero, Exum & Simpson, 2005, p. 262) who have achieved considerable educational, social and occupational attainments (Friedrichs, 2010). With their middle- and upper-class positions, white-collar offenders are believed to be different from street-crime offenders in that they often have a lot at stake, such as social status, a job or a business (Benson, 2016). This is assumed to be the case in particular for white-collar offenders who occupy executive organizational positions, such as company owners or business directors (Reed & Yeager, 1996; Weisburd et al., 1991). Selection mechanisms in organizations and society are hypothesized to prevent weakly bonded individuals from attaining an executive position (e.g., Gottfredson & Hirschi, 1990) and for those who end up in executive positions, the position itself constitutes a high "stake in conformity" (Toby, 1957).

Studies that contrasted white-collar offenders to (non-violent) street-crime offenders showed that, among other things, white-collar offenders were found to be more often employed, married and homeowner and to be characterized by a higher involvement in community life (Benson & Kerley, 2001; Weisburd et al., 1991; Wheeler et al., 1988). However, Benson and Kerley (2001) also observed that, although white-collar offenders on average lived more conventional lives than street-crime offenders, white-collar offenders were usually not highly integrated in community life either, and a substantial number was characterized by unstable residency or unsteady employment histories (see also Klenowski & Dodson, 2016). Also, Weisburd and Waring (2001, p.146) concluded that informal social controls, especially marriage, were important for understanding criminal histories in at least a part of the white-collar offender population. And, a more recent analysis of the same offender sample showed that a higher social capital, as identified in stable marriage and employment, is protective against medium to high criminal offending patterns (Piquero et al., 2016). Despite these tentative findings, leading scholars in the field of white-collar criminology have generally questioned social control theory's relevance for understanding white-collar crime (Benson, 2016, p. 267; Box, 1981, p. 153; Friedrichs, 2010, p. 212).

The literature to date has not addressed and examined three key notions from Sampson and Laub's theory, which will be at the center of the present paper. First, the notion that social bonds are age-graded in nature and that the association between informal social controls and the risk of crime involvement in adult offenders is not dependent on deterrence or the mere presence of a social bond, but on "interdependent systems of obligations and restraints" (Sampson & Laub, 1993, pp. 140-41). Second, the notion that the strength of the bond to society varies gradually between individuals, and that this gradual variation - in combination with available opportunity structures - is essential for understanding the risk of crime involvement (Sampson & Laub, 1993, pp. 140, 143). Lastly, the notion that the strength of social bonds may change over an individual's life span due to developments that can weaken former solid bonds (Sampson & Laub, 2005, p. 167; 1993, p. 141; see also Hirschi, 1969, p. 19). We address these three notions in more detail in the following sections and formulate our hypotheses.

4.1.2 Age-graded informal social controls in white-collar offenders

Commitment to and stability of bonds

Like other social control scholars, Sampson and Laub (1993) propose that the propensity for crime increases when the bond to conventional society decreases. They argue that the type of social bonds as well as the way in which social bonds reduce the risk of crime change throughout life. While juveniles form and

maintain important social bonds to peers and school, adults establish and uphold important bonds to distinct, age-graded social and economic institutions, such as spouses and work (Sampson & Laub, 1993). Sampson and Laub (1993, p. 141) also propose that, unlike the direct and external monitoring and deterrent function in juveniles, social bonds in adults are important insofar as that they create “interdependent systems of obligations and restraints that impose significant costs for translating criminal propensities into action.” Building on the work of Coleman (1988, 1990) and Braithwaite (1989), Sampson and Laub (1993) emphasize the *quality* and *strength* of social bonds in adults. As it takes time to strengthen bonds, it is the commitment to and the stability of ties, not the mere presence of a social tie, that constitutes a strong bond to conventional society. Thus, it is not marriage or employment per se but a strong attachment to a spouse and stability in employment that create an interdependent bond to society that reduces the risk of deviant and criminal behavior (Sampson & Laub, 1993, p. 140). A similar logic applies to the executive organizational positions that many white-collar offenders occupy (e.g., owner or director). Not merely the fact that one occupies such a position is important, it is the commitment to and stability of executive positions that constitute an interdependent bond. So, although a “stake in conformity” and supervision are likely to have a certain deterrent or monitoring effect on white-collar workers, managers and executives, it is the “interdependent systems of obligations and restraints” expressed in committed and stable social ties that are presumed to be key in reducing the risk of committing crimes by adults, such as fraud, corruption or embezzlement (compare Sampson & Laub, 1993, p. 141).

Gradual differences and the realization of crime

Sampson and Laub (1993, p. 140) emphasize that individuals vary in the strength of their bond to society on a gradual scale, and that a reduction increases the *likelihood* of crime “all else being equal”. In order to appreciate the degree to which offenders were bonded to society, Sampson and Laub (1993, pp. 27, 179) therefore contrasted the offenders to control subjects who resembled the offenders as much as possible in personal and neighborhood characteristics. The aforementioned white-collar crime studies that juxtaposed white-collar offenders to (non-violent) street-crime offenders (Benson & Kerley, 2001; Weisburd et al., 1991; Wheeler et al., 1988) are in that regard little informative to establish the relative strength of social bonds, as the researchers also concluded that the street-crime offenders were “drawn from distinctively different sectors of the population” (Wheeler et al., 1988, p. 342). In other words, the relatively strong social bonds of a fraudulent manager, compared to a criminally active burglar, does not necessarily mean that the manager is a conventionally

bonded individual. In order to infer that he or she is conventionally bonded, a comparison to similar others is called for. As white-collar offenders are often described as conventional or ordinary members of the general population (Friedrichs & Schwartz, 2008; Wheeler et al., 1988), individuals from the general population with matching sociodemographic backgrounds are arguably a qualified comparison group for the present sample of white-collar offenders.

In order to examine whether Sampson and Laub's (1993) hypothesis that adult offenders are characterized by weakened social bonds applies to white-collar offenders, we compare the level of commitment to and stability of social bonds of white-collar offenders to that of control individuals with matching sociodemographic backgrounds. In line with the Sampson and Laub (1993), we hypothesize that:

Hypothesis 1: White-collar offenders are characterized by weaker social bonds compared to controls with similar sociodemographic backgrounds.

The notion "all else being equal" (1993, p. 140) is significant for a second reason. Sampson and Laub (1993, p. 143) propose that weakened bonds allow for crime involvement but that the eventual *realization* of a crime depends on the opportunities to do so. As white-collar offenders often have direct access to criminal opportunities through the positions they hold within organizations, such as a executive position, a reduction in informal social controls may directly affect the risk of crime. This risk is recognized by white-collar criminologists, such as Passas (1990, p. 168) who writes: "In [business] environments (...) a lack of effective social controls is likely to promote processes resulting in deviance and anomie." Supporting this notion are several studies that show that a deterioration in social bonds may lead to unethical behavior at the workplace (Sims, 2002), to workplace deviance (Hollinger, 1986; Hollinger & Clark, 1982) and to criminal white-collar behavior (Engdahl, 2011, 2015; Lasley, 1988; but see Makkai & Braithwaite, 1991).

In order to examine the potential influence of reduced informal social controls on white-collar crime in executive positions, we, first, compare the level of commitment and stability in social bonds of individuals in executive positions (offenders and controls) to that of individuals not occupying such positions (offenders and controls), and, second, we contrast the level of commitment to and stability of social bonds of white-collar offenders in executive positions to that of controls that occupy similar executive positions. In line with Gottfredson and Hirschi (1990) and Reed and Yeager (1996), we hypothesize that:

Hypothesis 2: Individuals in executive positions are characterized by relatively strong social bonds compared to individuals not holding executive positions.

In line with Sampson and Laub (1993), we hypothesize that:

Hypothesis 3: White-collar offenders in executive positions are characterized by weaker social bonds compared to controls in similar executive positions.

Different pathways to and degrees in weak bonds

Sampson and Laub (1993, 2005) propose that distinct processes over the life span may lead to weak bonds in adult offenders. In adult offenders who had a delinquent youth, low self-control and problematic socialization in early stages of life are assumed to have led to law infringements during adolescence, which in turn resulted in the problematic formation of social ties and misconduct in adulthood (Sampson & Laub, 1993). Although the *Age-graded theory of informal social control* is principally used to understand crime involvement among offenders with delinquent youths (for example, Sampson & Laub's own research, 1993), the theory also postulates that weak bonds underlie adult offenders' criminal behavior, "even if non-delinquent as a youth" (Sampson & Laub, 1993, p. 141). Developments in adulthood can weaken, disrupt or fracture social bonds in those with an unproblematic start in life (Sampson & Laub, 2005, p. 167; see also Hirschi, 1969, p. 19). For example, life-events, such as a divorce (Farrington & West, 1995) or a business crisis or financial problem (Engdahl, 2011, 2015) may weaken former strong bonds to society. Alternatively, white-collar crime researchers have stressed the role that criminogenic socialization processes within organization may play in: "the weakening of people's allegiance to social standards" (Passas, 1990, p. 166; see also Punch, 1996, p. 239). Moreover, building on work by Durkheim (1951, p. 254), scholars have proposed that the power and influence associated with occupying executive positions in organizations make white-collar offenders less dependent on others and may lead them to have less committed and less stable social bonds (Box, 1983; Simon & Gagnon, 1976).⁴² In sum, though still relatively poorly understood, the literature describes several possible mechanisms through which white-collar offenders may become poorly bonded to conventional society in adulthood.

42 See, for example, the social distance theory that proposes that power can cause individuals to perceive themselves as psychologically and socially distant from others (Magee & Smith, 2013, see also Blader & Yap, 2016).

In order to examine the hypothesis that all adult offenders, including those with non-delinquent youths, are characterized by weakened social bonds, we compare the level of commitment to and stability of social bonds of white-collar offenders who started offending before the age of 18 (early-crime onset) and of offenders who started offending after reaching the age of 18 (adult-crime onset) to that of matched controls with similar sociodemographic backgrounds. Following Sampson and Laub (1993), we hypothesize that:

Hypothesis 4: Early-onset and adult-onset white-collar offenders are characterized by weaker social bonds compared to matched controls.

While Sampson and Laub (1993) propose that deteriorated bonds underlie crime in all adult offenders, they do expect offenders with a non-delinquent youth to have relatively strong bonds. They argue that the absence of juvenile offending provides better opportunities for developing prosocial attachments in adulthood: “Non-delinquents are not just more motivated (presumably), but also better able structurally to establish strong ties to conventional lines of adult activity” (Sampson & Laub 1993, p. 142). White-collar offenders who have a history in crime from early stages of life may thus be expected to have weaker social bonds than those who started in crime later in life.

In order to examine whether early-onset white-collar offenders have weaker informal social controls than adult-onset white-collar offenders, we compare the level of commitment to and stability of social bonds of white-collar offenders who started offending before the age of 18 to that of white-collar offenders who started offending after reaching the age of 18. Following Sampson and Laub (1993), we hypothesize that:

Hypothesis 5: Early-onset white-collar offenders are characterized by weaker social bonds compared to adult-onset white-collar offenders.

4.2 Method Study 1

4.2.1 Samples

4.2.1.1 White-collar offender samples

Overall white-collar offender sample

The sample of offenders consisted of 634 individuals who were prosecuted by the Netherlands Public Prosecution Service between 2008 and 2012 for their involvement in white-collar crimes. Earlier research shows that they were prosecuted for a wide variety of offences (see Chapter 2). The most prevalent

selection offences were tax frauds but the offenders were also prosecuted for white-collar offences, such as swindles, embezzlement and bankruptcy fraud. The selection offences broadly fit the so-called offence-based approach to white-collar crime which has been used in previous large-scale white-collar offenders studies (e.g., Benson & Kerley, 2001; Weisburd & Waring, 2001). Importantly, the offences for which the offenders were prosecuted were selected by the Netherlands Public Prosecution Service based on the seriousness of the crime, meaning cases in which large amounts of money were defrauded, in which the offences were complex or organized in nature, or in which the offences were committed over an extensive time frame.

The average age of the sample (84.7 percent male) was 50 years with an average age of crime onset of 31 years.

Sample of offenders in executive positions

We identified whether offenders occupied an executive position using register data from the Netherlands Tax and Customs Administration. The subsample contained 361 white-collar offenders who held executive positions, such as director, associate or founder in a private liability company, a public company or other legal entity in the Netherlands between 2008 and 2014 (56.9 percent of the overall sample). This subsample fits the so-called offender-based definition of white-collar crime in which white-collar offenders are defined by their organizational position (e.g., Sutherland, 1949). The age ($M = 52.7$), the age of crime onset ($M = 32.5$) and the percentage males (90 percent) in the executive offender subsample were higher than in the non-executive offender subsample (age $M = 46.3$; age crime onset $M = 28.9$; 77.7 percent male).

Samples of early-onset and adult-onset offenders

To identify crime onset we used historical offending information 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, with 12 years being the minimum age of criminal responsibility in the Netherlands. In line with earlier research on adult-onset offenders (Eggleston & Laub, 2002), we categorized adult-onset offenders as those who have committed an offence at age 18 or later, and early-onset offenders as those who have committed an offence before the age of 18. The adult-onset subsample consisted of 541 offenders (age $M = 51.1$; age crime onset $M = 33.7$; 83.4 percent male; 85.3 percent of the overall sample). The early-onset subsample consisted of 93 offenders (age $M = 43.7$; age crime onset $M = 15.2$; 92.5 percent male; 14.7 percent of the overall sample).

4.2.1.2 Control samples

Overall control sample

The control group ($N = 1,788$) was drawn from the central database of the Netherlands Tax and Customs Administration that holds all registered individuals and legal entities in the Netherlands. For each white-collar offender, we pair-wise drew three control individuals who matched each offender on five sociodemographic characteristics: age, sex, region of residence in the Netherlands (13 geographically regions), income group (12 groups) and whether he/she had a company registered to his/her name.⁴³ These five characteristics were then used to form a key for each offender (e.g., male, born in 1961, living in the north of the Netherlands, income group 40,000 - 49,999 euros, with a company registered to his name). This key was then used to randomly select individuals that matched these five characteristics from the central database. The control sample in the present study consisted of 1,788 individuals.⁴⁴

Control sample of individuals in executive positions

Like the offender subsample, we selected the individuals from the overall control sample that were registered as holding an executive position between 2008 and 2014. The control subsample of individuals in executive positions consisted of 393 individuals (22.0 percent of the overall control sample).

Control samples of individuals that matched early-onset and adult-onset offenders

The pair-wise sampling allowed us to construct control subgroups with the same five sociodemographic characteristics as the early-onset and adult-onset offender subsamples. The control subsample for adult-onset offenders consisted of 1,536 individuals (85.9 percent of the overall control sample), and the control subsample for early-onset offenders consisted of 252 individuals (14.1 percent).

43 We used sex, age, income and company ownership because research suggest that these factors are related to both misconduct and social bonds (Benson, 1984; Kerley & Copes, 2004; Piquero et al., 2016; Reed & Yeager, 1996; Sampson & Laub, 1993; Weisburd et al., 1991; Weisburd & Waring, 2001). We used geographic region because regions in the Netherlands differ in level of urbanization, which we expected to be relevant for understanding social bonds. All variables except region were significantly associated with the outcome measures and the latter was therefore not included in control analyses.

44 Control samples were constructed in 2014 when the offender sample consisted of 644 offenders (see Chapter 2). The original control sample was therefore ($N \times 3$) $N = 1931$ (one offender could only be matched with 2 other individuals). Since then 10 offenders have died. These individuals were removed from the sample, resulting in a final sample size of 634. In the control sample, we removed the matched controls ($N = 30$) and a further 113 individuals had died any time during the observation period.

4.2.2 Measurements

We measured social bonds by two overarching scales: a scale for the bond in the social life domain and one for the bond in the economic life domain. The bond in the social life domain was, in turn, based on two subscales: bond to partner and bond to community. The bond in the economic life domain was based on a subscale for the bond to economic institution and a subscale for the bond to executive positions. Underlying the two overarching scales and four subscales were a total of 14 separate indicators that measured different facets of the bond to society. Below, we provide a more detailed description of subscales and underlying indicators, and the two overarching scales. All data were retrieved from the Netherlands Tax and Customs Administration with their permission.

4.2.2.1 Bond in social life domain

Bond to partner

Marriage and marital stability are commonly used as indicators of social stability (e.g., Farrington & West, 1995; Sampson & Laub, 1993; Weisburd & Waring, 2001). We constructed a scale using marital status (in 2014) and changes in marital status between 2008-2014 (e.g., marriage, divorce). Changes in marital status were coded as 0 (no change) and 1 (change). The final scale ranged from 0 (a marriage, and no change in marital history during the observation period) to 1 (no marriage, or, for those married during the observation period a change in marital status), with 1 indicating a weaker bond to partner (34.4 percent = 0; 65.6 percent = 1). The items were positively correlated ($\rho = .34, p < .001$).

Bond to community

In assessing the bond to the community, we follow earlier research that shows that living in a local community over a prolonged time period indicates social stability, while relocating may disrupt social ties and thus indicates lower social stability (Coulton, Theodos, & Turner, 2012; Weisburd & Waring, 2001). We assessed homeownership (in 2014) and residential mobility (2008-2014), by calculating (1) the number of residency changes, (2) the number of migrations, and (3) the number of residency changes where the moving person did not register a new address (new residency unknown).

Measures for each subscale were coded as follows: homeownership was coded in 0 (homeowner) and 1 (no homeowner). The three measures of residential mobility were recoded to 2 (2 or more changes), 1 (1 change) and 0 (no change). The scale for the bond to community was formed by the sum of these subscales. The scale had a range of 0-7 with a higher score indicating a weaker bond to the community ($M = 1.55; SD = 1.54$). The scale is modestly reliable (Cronbach's $\alpha = .52$) but we decided to include all items on theoretical grounds.

4.2.2.2 Bond in economic life domain

Bond to economic institution

We examined the commitment to and stability of ties to economic institutions that provided income (e.g., employer or government institution). Following Sampson and Laub (1993, p. 140) and the literature on occupational and organizational commitment (e.g., Farrell & Rusbult, 1981; Meyers & Allen, 2001), we argued that the higher the number of economic institutions and the higher the number of economic sectors a person was active in, the lower the commitment, and the higher the number of changes in economic institutions and economic sectors, the lower the stability. For example, individual A who was employed by one employer over the observation period has a relatively strong commitment and high stability, compared to individual B who was employed by three employers and changed employer twice, including a change in economic sector. We used four subscales (all measured between 2009 and 2014). First, the number of economic institutions. Second, the number of economic sectors somebody was active in (the economic sector of the respective economic institution). Third, the number of changes in economic institutions that was the major income source in a particular year. Fourth, the number of changes in economic sectors somebody was active in (the economic sector of the respective economic institution that was the major income source in a particular year).

Measures for each subscale were recoded into 2 (2 economic institutions/ economic sectors or more, 2 changes or more in economic institutions/ economic sectors), 1 (1 economic institution/economic sector, 1 change in economic institution/sector) and 0 (no change). The scale for bond to economic institution was formed by the sum of these subscales. The scale ranges from 0-6 with a higher score indicating a weaker commitment and higher instability and thus a weaker interdependent bond to economic institution ($M = 3.68$; $SD = 2.24$). The scale is reliable (Cronbach's $\alpha = .90$). For this scale we used a database (FLG database, between 2009 and 2014) that holds all individuals who received income from a company or government institution in the Netherlands (2,041 individuals; 84.3 percent of both overall samples; 86.6 percent of offender sample; 82.7 percent of control sample).⁴⁵

Bond to executive position

We operationalized and measured the bond to executive position following the same logic as the bond to economic institution. We argued that the higher the

45 Despite its advantages, the database is limited in the sense that it does not hold information on all possible types of income, such as income from self-employment, income generated from dividend, or income earned abroad.

number of executive positions and economic sectors, the lower the commitment, and the higher the number of changes in executive position and economic sector, the lower the stability. We used four subscales (measured between 2008 and 2014). First, the number of executive positions that was held. Second, the number of economic sectors the executive position(s) was held in. Third, the number of changes in (types of) executive position. Fourth, the number of changes in economic sector the executive position(s) was held in.

Measures for each subscale were recoded into 2 (2 executive positions/ economic sectors or more, 2 changes or more in executive positions/ economic sectors), 1 (1 executive position/economic sector, 1 change in executive position /sector) or) and 0 (no change). The scale for bond to the executive position was formed by the sum of these subscales. The scale ranges from 0-6 with a higher score indicating a weaker commitment and higher instability and thus a weaker interdependent bond to executive position ($M = 2.71$; $SD = 2.14$). The scale is reliable (Cronbach's $\alpha = .79$). For this scale we used a database (BVR database, between 2008 and 2014) that holds all individuals that occupy executive position in the Netherlands (754 individuals; 31.1 percent of both overall samples; 56.9 percent of offender sample; 22.0 percent of control sample).

4.2.2.3 Scales for bond in social and economic life domain

Bond in the social life domain. The two subscale for the bond in the social domain (bond to partner and bond to community) were correlated ($\rho = .21$, $p < .001$). To construct the scale for bond in the social life domain ($N = 2,422$; $M = 1.10$; $SD = 0.85$) we used the mean score of bond to partner and bond to community.

Bond in economic life domain. The two subscale in the economic life domain were moderately correlated ($\rho = .09$, $p < .05$), indicating that bond to economic institution and bond to executive position are two quite distinct dimensions of bonds in the economic life domain. We included both items in the overarching scale on theoretical grounds. The overall scale for bond in the economic life domain ($N = 2,422$; $M = 2.87$; $SD = 2.62$) was constructed by combining both scales in the following way. If an individual was registered in both the FLG and BVR database ($N = 631$; 26,1 percent) we used the mean score of both the economic institution and executive position scales. In the case that an individual was registered in only one of the data bases, we used the score of that scale (only in FLG data base: $N = 1,410$; 58.2 percent; only BVR data base: $N = 123$; 5.1 percent). In the case somebody was not registered in either data base ($N = 258$; 10.7 percent), the score was 0. We did so to be able to include these individuals in the overall factorial analysis. However, in the full

factorial analyses we controlled for this latter group by introducing a dummy as a covariate (see footnote 47). We also performed separate MANOVA's for economic institution and executive positions, in which we only included those registered in the respective databases.

The bond in the social life domain and the bond in the economic life domain were correlated ($\rho = .14, p < .001$).

4.2.3 Analytic strategy

In a first step, we conducted an analysis of variance (MANOVA) for bonds in social and economic life domain, with a 2 (white-collar offenders *versus* controls) by 2 (executives *versus* non-executives) by 2 (early-onset offender [and matched controls] *versus* adult-onset offender [and matched controls]) full factorial design. In order to examine differences between offenders and controls (*Hypothesis 1*) in more detail, we performed separate ANOVA's and Chi-square tests for the four subscales and the 14 underlying indicators. To test the other hypotheses, we performed MANOVA's, ANOVA's and Chi-square tests for the two scales (bonds in the social and economic life domain) and the four subscales (bond to partner, community, economic institution and executive position).

4.3 Results Study 1

The results from the full factorial analysis of variance are presented in § 4.3.1 and the results for Hypotheses 1 to 5 are detailed in the subsequent section (§ 4.3.2).

4.3.1 Full factorial design

The effects of the analysis of variance for informal social controls in the economic and social life domain, with a full factorial design are reported in Table 4.1. It shows significant multivariate main effects for the factors *Sample* (univariate effects in the social and economic life domain), *Executive Position* (univariate effects for social and economic life domain) and *Onset Group* (only a univariate effect for social life domain). Table 4.1 also shows a significant multivariate interaction effect between the factors *Sample* and *Onset Group* (univariate interaction effect for social life domain). There is no significant two-way interaction effect between the factors *Sample* and *Executive Position*, nor between the factors *Executive Position* and *Onset Group*, nor a significant three-way interaction.

4.3.2 Hypotheses

We report the results of the analyses regarding the five hypotheses below. Figure 4.1 to 4.3 visually depict the main results regarding the five hypotheses.

Hypothesis 1

The full factorial MANOVA (Table 4.1, see also Figure 4.1) shows a multivariate and univariate main effect for white-collar offender: white-collar offenders had significantly weaker bonds in the social life domain ($M = 1.48$, $SD = 0.97$) and in the economic life domain ($M = 3.44$, $SD = 2.26$) compared to controls ($M = 0.97$, $SD = 0.76$; $M = 2.66$, $SD = 2.71$, respectively). This result offers support for our first hypothesis: White-collar offenders are characterized by weaker social bonds compared to controls with similar sociodemographic backgrounds.^{46 47}

46 As offenders and controls were not matched perfectly across the *FLG* database (economic institution) and the *BVR* database (executive position), we performed the full factorial analyses again with the sociodemographic variables included as covariates in order to control for these factors. Multivariate results remained significant ($p < .001$) as well as the univariate effect for bond in the social life domain ($p < .001$) and the bond in economic life domain ($p < .01$).

47 To control for individuals that received the score 0 without being registered in the *BVR* or *FLG* database, we performed the full factorial analyses again with a dummy variable as covariate. The multivariate effect ($p < .001$) and the univariate effect for bond in the economic life domain remained significant ($p < .05$).

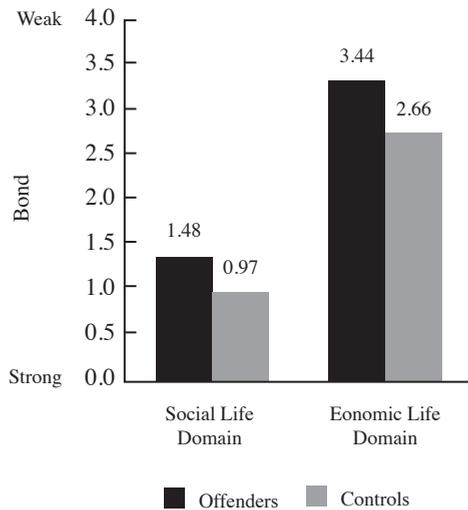
Table 4.1 Statistics for Analysis of Variance with full Factorial Design for Bonds in the Social and Economic Life Domain ($N = 2,422$)

	Multivariate		Univariate	
	Wilks' λ	F Values		F Values
Main Effects				
Sample	.937	80.53 ***	Social Life Domain	157.89 ***
			Economic Life Domain	11.03 **
Executive Position	.987	15.54 ***	Social Life Domain	23.17 ***
			Economic Life Domain	4.91 *
Onset Group	.965	43.67 ***	Social Life Domain	83.91 ***
			Economic Life Domain	0.53
Two-way Interaction Effects				
Sample X Executive Position	.995	.11	Social Life Domain	0.06
			Economic Life Domain	0.19
Sample X Onset Group	1.0	6.24 **	Social Life Domain	11.25 **
			Economic Life Domain	0.48
Executive Position X Onset Group	.998	2.35	Social Life Domain	0.71
			Economic Life Domain	3.53
Three-way Interaction Effect				
Sample X Onset Group X Executive Position	1.0	.50	Social Life Domain	0.23
			Economic Life Domain	0.65

Note: The factor *Sample* compares the sample of white-collar offenders to the sample of controls, the factor *Executive Position* compares executives to non-executives, and the factor *Onset Group* compares the sample of early-onset offenders (and matched controls) to adult-onset offenders (and matched controls); * $p < .05$, ** $p < .01$, *** $p < .001$

Further analyses on the four subscales demonstrate that white-collar offenders had a significant weaker bond to community (offenders: $M = 2.30$, $SD = 1.82$; controls: $M = 1.29$, $SD = 1.33$; $F(1, 2420) = 222.34$, $p < .001$), weaker bond to economic institution (offenders: $M = 4.06$, $SD = 2.07$; controls: $M = 3.54$, $SD = 2.29$; $F(1, 2039) = 21.99$, $p < .001$), weaker bond to executive position (offenders: $M = 3.19$, $SD = 2.13$; controls: $M = 2.26$, $SD = 2.04$; $F(1, 752) = 37.09$, $p < .001$), but not a weaker bond to partner (offenders: $M = 65.5$ percent; controls: $M = 65.7$ percent; $\chi^2(1, 2421) = 0.01$, ns).⁴⁸ Additional ANOVA's and Chi Square tests for the 14 underlying measures reveal that except for the two underlying measures for bond to partner, offenders exhibited attenuated social bonds on all 12 other measures, all F 's > 9.46 , $p < .01$.

Figure 4.1 Bonds in the Social and Economic Life Domain for Offenders ($N = 634$) and Controls ($N = 1,788$)



48 As offenders and controls were not matched perfectly across the *FLG* database and the *BVR* database, we performed the ANOVA's for bond to economic institution and bond to executive position again with the sociodemographic variables included as covariates. Results remained significant for both bonds ($p < .001$).

Hypothesis 2

The overall MANOVA (Table 4.1) shows a multivariate main effect for *Executive Position*. The univariate results (see Figure 4.2, Table 4.1) show that executives had significantly stronger bonds in the social life domain ($M = 1.04, SD = 0.94$) than non-executives ($M = 1.13, SD = 0.81$). This result is in line with our second hypothesis: Individuals in executive positions are characterized by relatively strong social bonds compared to individuals not holding executive positions. However, in contrast to our second hypothesis, results also show that executives ($M = 3.14, SD = 1.71$) were significantly weaker bonded than non-executives in the economic life domain ($M = 2.74, SD = 2.93$).⁴⁹

In order to further examine the differences between executives and non-executives, we performed additional analyses on the four subscales. Results show that executives had a significantly stronger bond to their partner (52.8 percent) than non-executives (71.5 percent), $\chi^2(1, 2422) = 80.32, p < .001$, but a significant weaker bond to economic institution ($M = 3.86, SD = 2.09$) than non-executives ($M = 3.61, SD = 2.31$), $F(1, 2039) = 5.63, p < .05$.

Hypothesis 3

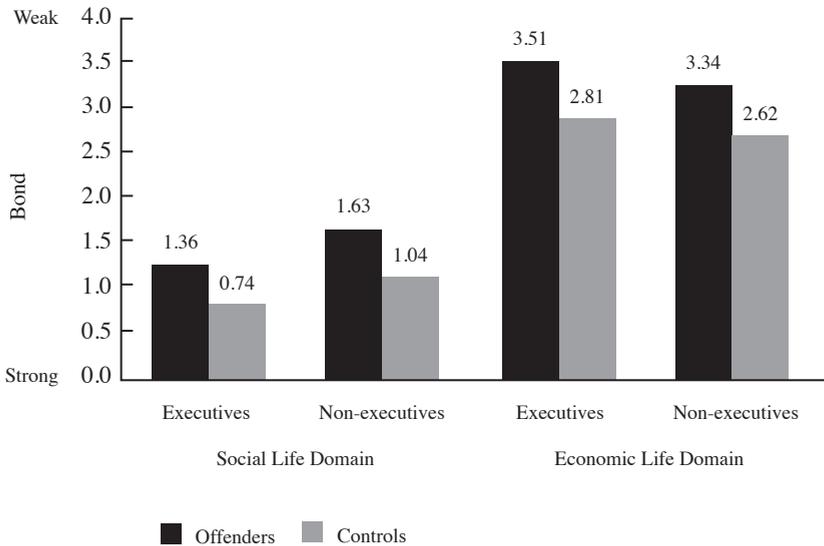
The absence of significant multivariate and univariate interactions for the factors *Sample* and *Executive Position* (Table 4.1) indicates that the observed differences in social bonds between white-collar offenders and controls do not depend on executive position. To further zoom in on individuals with an executive position, a MANOVA was performed comparing social bonds of offenders and controls holding such an executive position. The multivariate results reveal that white-collar offenders had weaker social bonds than control executives, Wilks' $\lambda = .827$; $F(2, 751) = 55.29, p < .001$. Univariate results shows that this was the case both in the social life domain (offenders: $M = 1.36, SD = 0.99$; controls: $M = 0.74, SD = 0.77$; $F(1, 752) = 94.13, p < .001$) and in the economic life domain (offenders: $M = 3.51, SD = 1.61$; controls: $M = 2.81, SD = 1.74$; $F(1, 752) = 33.12, p < .001$).⁵⁰ These results support our third hypothesis: White-collar offenders in executive positions are characterized by weaker social bonds compared to controls in similar executive positions.

49 As executives and non-executives were not matched perfectly on sociodemographic profile, we performed an additional MANOVA with the sociodemographic variables included as covariates in order to control for these factors. The multivariate main effect for executive position remained significant ($p < .001$).

50 As offenders and controls in executive positions were not matched on sociodemographic profile, we performed the analyses again with sociodemographic variables as covariate. The multivariate and univariate results remained significant ($p < .001$).

Additional analyses on the four subscales reveal that white-collar offenders in executive positions, compared to controls in such positions, had a weaker bond to partner (offenders: 59.6 percent; controls: 46.6 percent; $\chi^2(1, 754) = 12.74, p < .001$), a weaker bond to community (offenders: $M = 2.13, SD = 1.86$; controls: $M = 1.01, SD = 1.37; F(1, 752) = 89.21, p < .001$), and a weaker bond to executive position (offenders: $M = 3.18, SD = 2.13$; controls: $M = 2.26, SD = 2.04; F(1, 752) = 37.09, p < .001$).

Figure 4.2 Bonds in the Social and Economic Life Domain for Executive Offenders ($N = 361$) and Non-Executive Offenders ($N = 273$) and Executive and Non-executive Controls ($N = 393$; $N = 1,395$, respectively)



Hypothesis 4

The multivariate main effect for *Onset Group* and the multivariate interaction effect for *Sample* and *Onset Group* (Table 4.1) suggest that, while the *Onset Groups* differ (offenders with an early onset and their matched controls had weaker bonds than offenders with an adult-onset and their respective matched controls), these differences depended on being an offender or a control.

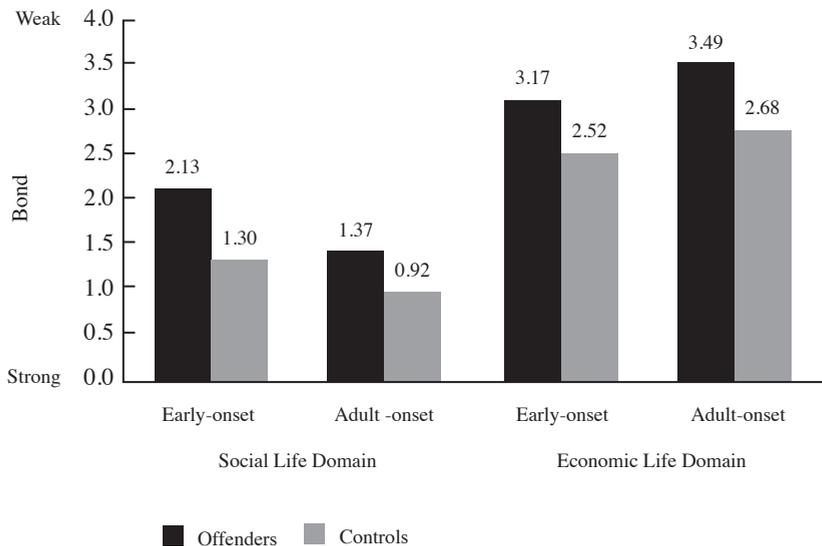
We performed additional MANOVA's to identify whether differences in social bonds existed between early-onset and adult-onset white-collar offenders and their respective matched controls. Multivariate results (see also Figure 4.3)

show that both the early-onset offenders (Wilks' $\lambda = .828$; $F(2, 342) = 35.57$, $p < .001$) and the adult-onset offenders (Wilks' $\lambda = .932$; $F(2, 2074) = 75.76$, $p < .001$) had weaker bonds to society than their respective matched controls.

Early-onset offenders were, compared to their matched controls, characterized by weaker bonds in the social life domain ($M = 2.13$, $SD = 0.95$ versus $M = 1.30$, $SD = 0.76$; $F(1, 343) = 71.08$, $p < .001$), but not in the economic life domain ($M = 3.17$, $SD = 2.74$ versus $M = 2.52$, $SD = 3.02$; $F(1, 343) = 3.26$, ns). Adult-onset offenders were, compared to their matched controls, characterized by weaker bonds in both the social life domain ($M = 1.37$, $SD = 0.93$ versus $M = .92$, $SD = 0.74$; $F(1, 2075) = 125.27$, $p < .001$), and the economic life domain ($M = 3.49$, $SD = 2.17$ versus $M = 2.68$, $SD = 2.66$; $F(1, 2075) = 40.01$, $p < .001$). These results are in line with our fourth hypothesis: Early-onset and adult-onset white-collar offenders are characterized by weaker social bonds compared to matched controls.

Further analysis on the four social bond subscales reveals that early-onset offenders had a significantly weaker bonds to the community compared to matched controls ($M = 3.46$, $SD = 1.77$ versus $M = 1.78$, $SD = 1.35$; $F(1, 343) = 87.73$, $p < .001$). Adult-onset offenders were, compared to controls with the same sociodemographic profile, characterized by weaker bonds to the community

Figure 4.3 Bonds in the Social and Economic Life domain for Early-onset Offenders ($N = 93$) and Adult-onset Offenders ($N = 541$) and Matched Controls ($N = 252$, $N = 1,536$ respectively)



(offenders: $M = 2.10$, $SD = 1.75$; controls: $M = 1.21$, $SD = 1.31$; $F(1, 2075) = 155.94$, $p < .001$), weaker bonds to economic institution (offenders: $M = 4.04$, $SD = 2.06$; controls: $M = 3.51$, $SD = 2.28$; $F(1, 1769) = 19.40$, $p < .001$), and weaker bonds to executive position (offenders: $M = 3.15$, $SD = 2.13$; controls: $M = 2.19$, $SD = 2.02$; $F(1, 673) = 36.34$, $p < .001$).

Hypothesis 5

We performed a MANOVA within the offender sample to analyze differences between early and adult-onset offenders' informal social controls (see also Figure 4.3). Multivariate results show that early-onset offenders were characterized by weaker bonds than adult-onset offenders, Wilks' $\lambda = .919$; $F(2, 631) = 27.89$, $p < .001$. The univariate results show that early-onset offenders, compared to adult-onset offenders, had weaker bonds in the social life domain ($M = 2.13$, $SD = 0.95$ versus $M = 1.37$, $SD = 0.93$; $F(1, 632) = 52.62$, $p < .001$), but not the economic life domain ($M = 3.17$, $SD = 2.74$ versus $M = 3.49$, $SD = 2.17$; $F(1, 632) = 1.59$, ns).⁵¹ These results only offer support with regards to the social life domain for the fifth hypotheses: Early-onset white-collar offenders are characterized by weaker social bonds compared to adult-onset white-collar offenders.

Additional analyses in the social life domain show that early-onset offenders, compared to adult-onset offenders, were characterized by weaker bonds on both subscales: bonds to their partner (79.6 percent versus 63 percent), $\chi^2(1, 634) = 9.60$, $p < .01$, and to the community ($M = 3.46$, $SD = 1.77$ compared to $M = 2.10$, $SD = 1.75$; $F(1, 632) = 47.71$, $p < .001$).

4.3.3 Recapitulation

The results from Study 1 supported the notion that white-collar offenders, including those who hold an executive position and with an adult-crime onset, were characterized by relatively weak social bonds. The results also signposted differences within the white-collar offender sample: offenders who did not hold an executive position (*Hypothesis 2*) and those who had an early crime onset (*Hypothesis 5*) were characterized by relatively weak bonds (particularly in the social life domain) compared to offenders in executive positions and to adult-onset offenders.

51 In order to understand whether the sociodemographic profile of the early and adult onset offenders explained the identified difference, we included the sociodemographic variables. Results show that sex, age, income group and business ownership all had a significant effect (multivariate effects, $p < .001$), but that the differences for early and adult-onset offenders remained significant in the social life domain after controlling for these variables ($p < .001$).

Study 2 will test the two hypotheses that can be examined within the white-collar offender population (*Hypothesis 2 and 5*), using an independent and validated measure of social bonds based on the assessment tool used by the Dutch Probation Services. The second study is performed in a subsample of the first study, containing only those offenders who were subjected to an assessment by a probation officer.

4.4 Method Study 2

4.4.1 Sample

We assessed which offenders from the sample in Study 1 were registered in the client population data base of the Dutch Probation Services and selected them for Study 2 ($N = 111$; 17.5 percent). In comparison to the overall sample, this sample contained relatively more offenders with an early crime onset ($N = 33$; 29.7 percent; compared to 14.7 percent in Study 1) compared to adult-onset offenders ($N = 78$; 70.3 percent; 85.3 percent in Study 1). The ratio between executive and non-executive white-collar offenders is similar to that in Study 1 (executive: $N = 59$; 53.2 percent; compared to 56.9 percent of offenders in Study 1; non-executives: $N = 52$; 46.8 percent).

4.4.2 Measurements

For Study 2, we used information from the assessment tool of the Dutch Probation Services (*Recidive Inschattings Schalen* or Risk Assessment Scales, referred to as *RISc*). The *RISc* is developed based on the “what works” approach (see McGuire, 1995) and comprises of 12 sections that assess static and dynamic criminogenic factors such as education and work, relationships with partners, family and relatives, and beliefs and attitudes. We used a validated scale that was developed in an earlier study (Lamet et al., 2013) to measure social bonds based on individual risk assessment item (*RISc*) scores. The scale was defined similar to Hirschi’s (1969) four constructs of social bonds and was made applicable to an adult sample. The scale consisted of four sub-scales (range 0 [strong social bonds] - 2 [weak social bonds]): attachment ($M = 0.37$, $SD = .41$), commitment ($M = 0.46$, $SD = .48$), involvement ($M = 0.52$, $SD = .45$) and belief ($M = 0.43$, $SD = .49$). We constructed an overall scale for social bonds using scores of all four scales, ranging from 0 (strong social bonds) to 2 (weak social bonds) ($M = 0.43$, $SD = .36$). The overall scale was reliable (Cronbach’s $\alpha = .84$). For a detailed description of the scale, see Lamet and colleagues (2013). All data were retrieved from the Dutch Probation Services with their permission.

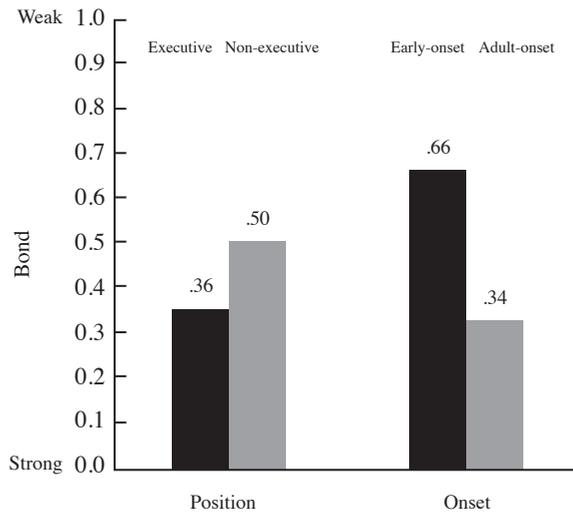
4.4.3 Analytic Strategy

We performed an analysis of variance (ANOVA) for the social bond scale, with a 2 (executives *versus* non-executives) by 2 (early-onset offender *versus* adult-onset offender) full factorial design in order to examine Hypotheses 2 and 5.

4.5 Results Study 2

The ANOVA does not show a significant main effect for *Executive Position* (see below) but does reveal a significant main effect for *Onset Group* (see below). There was no interaction effect for *Executive Position X Onset Group*, $F(1, 107) = 1.30$, ns. The results of this analysis are graphically depicted in Figure 4.4.

Figure 4.4 Social Bonds for Executive Offenders ($N = 59$) and Non-executive Offenders ($N = 52$) and Early-onset Offenders ($N = 33$) and Adult-onset Offenders ($N = 78$)



Hypothesis 2

The ANOVA reveals no significant difference between social bonds of offenders in executive positions ($M = 0.36$, $SD = 0.34$) and offenders not holding executive positions ($M = 0.50$, $SD = 0.37$), $F(1, 107) = 0.97$, ns. Although in the hypothesized direction, this result offers no support for the second hypothesis: Individuals in executive positions are characterized by relatively strong social bonds compared to individuals not holding executive positions.

Hypothesis 5

The ANOVA shows that early-onset offenders ($M = 0.66$, $SD = 0.41$) were characterized by weaker social bonds than adult-onset offenders ($M = 0.34$, $SD = 0.29$), $F(1, 107) = 20.83$, $p < .001$.⁵² This finding supports our fifth hypothesis: Early-onset white-collar offenders are characterized by weaker social bonds compared to adult-onset white-collar offenders.

4.6 Discussion

The present paper is the first to examine Sampson and Laub's (1993) *Age-graded theory of informal social control* in white-collar offenders. In two studies this paper conceptualized and examined social bonds within a sample of white-collar offenders with distinct organizational positions and crime onset ages, and compared them to matched controls. Several important findings emerge from the two studies.

First, the results from Study 1 provide strong and consistent support for the notion that relatively weak social and economic ties to conventional society characterize white-collar offenders. This pattern was found consistently across the social and economic life domain and all the subscales that measured bond to community, bond to economic institution and bond to executive position, with the exception of the bond to partner. The findings offer robust evidence that at least part of white-collar crime involvement can be understood through social control mechanisms, as hypothesized by the age-graded theory of informal social control (Sampson & Laub, 1993). In doing so, the study shows that a reduced bond to conventional society is not just a risk factor for *crime in the streets* (Sampson & Laub, 1993; see also Eggleston & Laub, 2002; Kempf,

52 In order to examine whether the sociodemographic profile of the early an adult-onset offenders explained the identified difference, we included the sociodemographic variables as covariates in the ANOVA. The effect for the factor Onset Group remained significant ($p < .001$).

1993; Lilly et al., 2014) but also for *crimes in the suites* (in reference to Bonger [1916]; see also Braithwaite, 1989, Engdahl, 2011; 2015; Piquero et al., 2016).

Second, the same pattern of results is found for white-collar offenders who hold executive organizational positions. Findings reveal that executive white-collar offenders were characterized by weak informal social controls across both the social and the economic life domain compared to control executives.⁵³ Given the availability of criminal opportunities in executive organizational positions, a detached relation to the community, a deteriorated bond to the spouse and an unstable economic attachment may directly affect white-collar crime involvement, and may explain why some executives engage in organizational crimes, while other, better-socialized executives, refrain from doing so under similar circumstances. In line with earlier research that showed that weakened bonds enhance the risk of unethical behavior, deviance and crime in organizations (e.g., Hollinger, 1986; Sims, 2002), the current study supports the notion that “the control paradigm is operational in both societal and corporate settings” (Lasley, 1988, p. 361).

For life-course criminology in particular, two more findings stand out. First, the combined results from Study 1 and 2 indicate that an early onset in crime is associated with relatively weak social bonds in adulthood, particularly in the social life domain (compared to adult-onset offenders). However, the results also show that the bonds in the economic life domain among white-collar offenders with a delinquent youth are comparable to those of adult-onset white-collar offenders. This suggests that the development of their bonds in the economic life domain is relatively untouched by their past juvenile offending or by the theorized process of *cummulative continuity* (Sampson & Laub, 1993, p. 124, 142). Possibly, these former street-crime offenders are relatively well-able to engage in relatively stable and committed economic activities through the economic possibilities that the contemporary society offers, such as self-employment and setting up their own company (see also this chapter [section 2.4], § 6.3.4 and § 6.3.5). Alternatively, early-onset white-collar offenders may have skills (e.g., salesmanship) or ‘dual-natured’ personal characteristics that promote both illegitimate and legitimate

53 In line with Reed and Yeager (1996) and Gottfredson and Hirschi (1990), executives’ bonds were found to be relatively strong in the social life domain, suggesting the possible existence of selection mechanisms preventing the weakly bonded from reaching such positions, or that the executive position constitutes a stake in society, which once occupied leads to a further strengthening of informal social controls. However, executives’ bonds were identified to be relatively weak in the economic life domain, suggesting that weak economic bonds may stimulate or facilitate individuals reaching an executive position, or that holding such a position may loosen ties to business associates from their industry, their colleagues and their employees (see Box, 1983).

economic success (e.g., Friedrichs, 2010; Wheeler, 1992; compare § 6.3.2). The current study is the first to examine bonds in the economic life domain in former street-crime offenders who continue offending into later stages of life, where they switch to white-collar crime. Future research is needed to examine these possible explanations in more detail.

Second, Study 1 shows that both early- and adult-onset white-collar offenders had an attenuated bond to society compared to their matched controls. This supports Sampson and Laub's (1993, p. 141) hypothesis that weakened social bonds underlie all offenders' criminal behavior, irrespective of a delinquent youth. Together, these findings highlight the importance of weakened bonds as a crime-causation mechanism later in life. Whereas the identified attenuated bonds in adult offenders with a delinquent youth are well-understood and presumed to be the outcome of a prolonged cumulative process that started in earlier phases of life, the mitigated bonds in white-collar offenders with non-delinquent youths are less well documented and comprehended (see Beckley et al., 2016; DeLisi & Piquero, 2011; Eggleston & Laub, 2002; Gomez-Smith & Piquero, 2005; Van Koppen et al., 2014). The finding that white-collar offenders who have refrained from crime until adulthood were also characterized by weak social bonds suggests that changes in adulthood, such as criminogenic socialization processes within organizations (Box, 1983; Passas, 1990; Punch, 1996), an economic crisis (Engdahl, 2011, 2015), or a divorce (Farrington & West, 1995) overruled their "incumbency in prosocial roles" (Sampson & Laub, 1993, p.142), as was the case in Marc Dreier's downfall.

4.6.1 Operationalizations, future research and policy implications

In this last section, we discuss the used operationalization, propose avenues for future research and suggest policy implications. Closely following Sampson and Laub's theory (1993) we developed measures for social bonds in Study 1, using multiple indicators of commitment and stability to both social and economic institutions, over an extensive observation period to understand the strength of social bonds. Separately each measure may be interpreted as indicating something else than a weakened social bond. For example, repeated changes in executive positions may be the result of white-collar offenders' trickery or a sign of active entrepreneurship. However, trickery or entrepreneurship does not easily account for the executives' lowered commitment and stability in bonds unrelated to executive positions (e.g., bond to partner). Rather, the identified consistency of attenuated bonds in white-collar offenders across indicators, across types of bonds and across distinct life domains indicates that we identified a robust way of measuring informal social controls. We find support for this conclusion in the results from Study 2 that are in line with those in Study 1.

The measure in Study 2 was based on Hirschi's social control theory (1969) that provided the 'organizing principle' for the *Age-graded theory of informal social control* (Sampson & Laub, 1993, p. 18). Finding a similar pattern of results in two studies with different data, operationalizations and collection methods, increases the validity of our findings.⁵⁴

As this study is one of the first to assess weak social bonds in white-collar offenders, it raises important follow-up questions. First, even though social control theory postulates that weakened social bonds underlie crime involvement, the present study cannot provide indisputable evidence for a causal relationship. Studies with a correlational research design, like the present one, never can. Future research needs to apply experimental research designs in order to definitely establish causal relationships. As the observation periods in this study and the time-frame of prosecution partly overlap, it is possible that the prosecution of the selection offence caused the weakened social bonds. However, we are not aware of research that shows that prosecution weakens social bonds across the economic and social life domains in white-collar offenders. Rather, research suggests that, even in the case of an eventual conviction, white-collar offenders do not suffer the same severity of the consequences as street-crime offenders do (Friedrichs, 2010). Studies show that white-collar offenders who are active in the private sector, like the offenders in the present sample (Functioneel Parket, 2012), are generally able to maintain stable employment and avoid a loss in occupational status after conviction (Benson, 1984; Kerley & Copes, 2004). Taken as a whole, in line with theory and research in other offender groups (Eggleston & Laub, 2002; Kempf, 1993; Lilly et al., 2014; Sampson & Laub, 1993), weakened bonds are likely to have contributed to the crime involvement in white-collar offenders, rather than being the result of prosecution.

Second, the present study raises questions as to what caused bonds to become attenuated, how the weakening unfolded and how the distancing process led to white-collar offending. To date, there have been very few studies that can shed light on these important issues (but see Engdahl, 2011, 2015). Qualitative studies, especially in-depth interview studies, are called for to provide a fuller qualitative understanding of the role of social bonds in the etiology of white-collar crime (Sampson & Laub, 1993, p. 204; Laub & Sampson, 2003). We

54 Still, the measures in Study 1 can be improved. For example, the somewhat old-fashioned operationalization of bond to partner - (changes in) marital status - may not fully capture the bond to (romantic) partner. In the Netherlands, like other contemporary western societies, a substantial part of the population cohabitates without marriage (Centraal Bureau voor de Statistiek, 2016). It is therefore likely that measures that entail (changes in) all forms of cohabitation would be better suited to capture a bond to partner.

therefore have started to interview white-collar offenders about their lives, social bonds and white-collar crime involvement.

In closing, we propose two possibly important policy implications of the current findings. First, the measures in Study 1 open up new methods of assessing weakened social bonds. Thus far, measuring social bonds requires labor-intensive contact with individuals at risk, suspects or probationers. An important reason for the choice to use officially registered data was not only that such data are less sensitive to biases compared to self-report measures (e.g., recollection errors, social desirable responses). Officially registered data also offer the opportunity for practical utilization by law enforcement agencies. For example, regulatory bodies, like the Tax and Customs Administration, could consider advancing their monitoring systems by adding informal social control measures. Second, the study suggests that strengthening fragile social bonds of white-collar offenders may be an effective strategy aimed at mitigating the chance of white-collar recidivism (compare Hunter, 2015; Laub & Sampson, 2001). For example, sentences that aim at strengthening white-collar offenders' social and economic bond to society may boost the chance that these offenders will refrain from future infringements. In particular the Probation Services may play an important role in this endeavor. However, only a minority of the first study's offender sample was assessed, and possibly treated by the Probation Services. For the majority of white-collar offenders, Probation Services officers, prosecutors and judges apparently did not see the need, or did not feel equipped to propose, order, or conduct an assessment or to start an intervention (compare research in US: Benson, 1985b; Mason, 2007). This finding is in line with earlier research that shows that only a small fraction of offenders in the Netherlands who were assessed by the Probation Services were prosecuted for a white-collar offense (Van Wingerden, Moerings, & Van Wilsem, 2011). As white-collar offenders constitute only a small segment of the Probation Services' target audience, specific criminogenic behavior, particularly in the 'problematic' economic life domain, may be overlooked and the development of effective intervention strategies for white-collar offenders may be challenging. Although the results of the present study suggest that bolstering white-collar offenders' social bonds may reduce recidivism, further research is warranted. This research must, among other things, establish the degree to which the current Probation Services' resocialization strategies are effective in promoting white-collar offenders' social bonds and thereby reducing recidivism in this currently under-supervised offender group.