



Universiteit
Leiden
The Netherlands

Understanding delinquent development from childhood into early adulthood in early onset offenders

Hazebroek, B.C.M. van

Citation

Hazebroek, B. C. M. van. (2021, May 27). *Understanding delinquent development from childhood into early adulthood in early onset offenders*. Meijers-reeks. Retrieved from <https://hdl.handle.net/1887/3180987>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3180987>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <https://hdl.handle.net/1887/3180987> holds various files of this Leiden University dissertation.

Author: Hazebroek, B.C.M. van

Title: Understanding delinquent development from childhood into early adulthood in early onset offenders

Issue Date: 2021-05-27

6 | General discussion

6.1 AIMS

The current thesis intended to contribute to literature on offending over an extended period of the life-course, by focusing specifically on the delinquent development and its correlates in the high-risk population of early onset offenders, defined in the current thesis as children with a police contact prior to the age of 12 (i.e., childhood arrestees). Understanding long-term delinquent development in childhood arrestees is highly relevant from a policy perspective, as a police contact/arrest below age 12 has emerged as an important indicator for persistence in offending (DeLisi et al., 2013). Increased knowledge on this specific offender population may provide vital information for prevention and intervention programs aimed at limiting the continuation of delinquent behavior in early onset offenders and improving their mental health outcomes. Furthermore, studying offending behavior and associated offenders characteristics from onset into early adulthood allows for addressing key theoretical predictions from developmental criminological theory (Moffitt et al., 1996). Unfortunately, knowledge on the development of offending behavior in early onset offenders known to the police is scarce, as their age of onset is below the age of criminal responsibility in many Western countries (e.g., 12 years in the Netherlands), and offenses committed below age 12 do therefore not appear in national crime statistics.

Specifically, the current thesis addressed two general aims. First, it aimed to provide empirical insight into (variation in) the development of offending behavior from childhood into early adulthood and associated singular identified risk factors. The current thesis focused on whether there was evidence for offending trajectories that are distinct in terms of time path from early adolescence (age 12) into early adulthood (Moffitt, 1993), and addressed the typological prediction that offending trajectories are distinct in terms of frequency and type of offending (Moffitt, 1993). In addition, this thesis addressed the theoretical assumption that males, minorities, and children from disadvantaged neighborhoods are at increased risk of showing persistent delinquent behavior (Moffitt, 1993). In order to address its first aim, the current thesis used official registration data on offense frequency, type of offending, mortality, and criminal sanctions over an extended period of time on children included in the *Dutch Childhood Arrestees Study* – a longitudinal study on over 700 children registered by the police for the first time because of an alleged

offense below age 12 (Geluk et al., 2014; van Domburgh, Vermeiren, et al., 2009).^{1,2}

The second aim was to improve our understanding of variation in delinquent development by combining theoretical insights stemming from different scholarly traditions (i.e., sociological, biosocial, and developmental criminology) on risk exposure in multiple life domains (i.e., individual, familial, peers, school, and neighborhood). This is important because biosocial (Monroe & Simons, 1991; Zuckerman, 1999) and developmental criminology (Caspi et al., 2014; Farrington & Welsh, 2008; Loeber, Stouthamer-Loeber, et al., 2008; Moffitt, 1993, 2006) suggest that risk factors of offending do not operate in isolation but rather co-occur and are mutually reinforcing. Biosocial and developmental criminological theorists argue that specific, relatively stable individual characteristics develop early in the life-course, and influence delinquent development over an extended period of time. Importantly, stable individual characteristics are also assumed to render some individuals more vulnerable or susceptible to changes in their social environment than others. As a result, changes in social life domains with age are thought to especially contribute to the likelihood of persistent offending in individuals with specific individual characteristics. The current thesis therefore adopted a holistic view on risk exposure, and examined associations between the interaction between and co-occurrence of risk in distinct life domains – focusing on biological, psychological, and social correlates of offending – and official as well as self-reported frequency of offending. In order to address this second aim, the official registration data on the *Childhood Arrestees Sample* was combined with rich survey data, containing information on problems from individual, familial, peer, school, and neighborhood life domains, as well as self-reported delinquency, measured using standardized instruments at baseline ($N = 348$), and one ($n = 295$), and two ($n = 266$) years ($n = 134$) follow-up.

In this final chapter of the thesis, findings from four separate studies are summarized in Section 6.2. Subsequently, findings are related to criminological theory in Section 6.3. In Section 6.4, strengths and limitations of the current thesis are addressed, and suggestions for future research are provided. Lastly, practical implications are offered in Section 6.5.

1 This study was approved by the Dutch Ministry of Justice.

2 In order to include children registered for displaying behavior that could be prosecuted if displayed by someone aged twelve years and older, children were selected from local registrations systems in three police districts in the Netherlands (Rotterdam-Rijnmond, Gelderland-Midden, and Utrecht).

6.2 SUMMARY

In addressing questions on whether the co-occurrence of risk in distinct life domains can help explain delinquent development, the current thesis started out with providing an overview of literature on interactions between biological and social/environmental correlates of antisocial behavior (Chapter 2). Based on a total of 50 studies (documented in 66 publications), it was shown that children suffering from biological vulnerability – measured as either peri/prenatal risk exposure or extreme psychophysiological functioning – are at increased risk of developing antisocial behavior when they are also exposed to adverse social or environmental circumstances. In addition, biosocial interaction was found to be mostly associated with more severe, violent, and persistent types of antisocial behavior, and play a more significant role in antisocial development in males. Regarding the second aim of the current thesis, Chapter 2 thus highlighted the importance of including both biological and social/environmental explanatory factors in studies aimed at increasing our understanding of antisocial behaviors.

Chapter 3, addressing the first general aim of this thesis, examined the extent to which distinct offending trajectories can be found in a sample of early onset offenders that differ both in shape and nature of offending from early adolescence (age 12) into early adulthood, and whether singular identified risk factors (i.e., gender, ethnicity, and neighborhood factors) can help characterize early onset offenders following distinct offending trajectories. Using multitrajectory modeling, it was shown that – next to an a-priori defined non-recidivist group (55%) – five trajectory subgroups could be identified in the data: sporadic recidivists (25%), and low-rate (8%), moderate-rate (10%), high-rate adult peaked (3%), and high-rate adolescence peaked recidivists (3%). Offenders were overall shown to be versatile in their offending behavior. Early onset offenders assigned to either of the high-rate trajectory subgroups committed a relatively large amount of property crimes, and violent crimes made up an increasing proportion of crimes committed by the high-rate adolescence peaked trajectory-subgroup. Multinomial regression analysis revealed that males, and non-Western participants were more likely to be classified as low-rate offenders than to abstain from crime during follow-up than their counterparts. Residing in a low socioeconomic neighborhood as a child substantially increased the chances of being assigned to high-rate trajectory-subgroups over the non-recidivist subgroup.

While Chapter 3 focused on associations between singular identified risk factors and offense patterns in early onset offenders, Chapter 4 addressed the second general aim of this thesis by studying the extent to which exposure to specific combinations of risk in childhood increases the risk of following specific offending trajectories into early adulthood. Trajectory modeling led to the identification of four trajectory-subgroups next to an a-priori defined group of non-recidivists (55%): low-rate desisting (14%), low-rate persisting

(18%), high-rate desisting (5%), and high-rate persisting (8%). Data on risk exposure revealed that the *Childhood Arrestees Sample* overall constitutes a biologically vulnerable, cognitively challenged and somewhat hyperactive group, experiencing emotional problems and peer victimization, while growing up in disadvantaged neighborhoods (see Chapter 4 for more detailed information on levels of risk in the *Childhood Arrestees Sample*). Latent profile models however revealed heterogeneity in exposure to clusters of risk from multiple life domains, as three risk profiles were found in the data: a low-problem/impulsive (31%), cognitive- and neighborhood-problem (48%), and multi-problem group (21%). Subsequently, and relevant for the second aim of the current thesis, Chapter 4 revealed that children suffering from specific combinations of problems are at risk of following distinct offending trajectories. Multinomial regression analysis showed that children with low levels of problems across life domains were least likely to display persistent offending behavior. Children with impaired cognitive abilities, growing up in disadvantaged neighborhoods were at risk of displaying high-rate persistent offending behavior, whereas children suffering from combinations of internalizing and externalizing problems displayed low-rate persistent offending into early adolescence.

Finally, Chapter 5 continued to address the second general aim of this thesis by examining whether changes in social influences affect individual offending behavior over time, and whether these effects depend on biological vulnerability towards delinquent development. By doing so, Chapter 5 adopted a dynamic approach to both offending behavior, as well as risk exposure in key social life domains (i.e., family, peers, school). As Chapter 2 of the current thesis had revealed that individuals suffering from peri/prenatal risk and social/environmental risk were most likely to display antisocial behavior, Chapter 5 specifically accounted for biological risk resulting from peri/prenatal problems, while studying the effects of changes in social relationships on individual delinquent involvement. Using data gathered during the first, second, and third measurement waves of the *Dutch Childhood Arrestees Study*, hybrid random effects models revealed associations between changes in social relationships over time and changes in self-reported offending behavior. While not all social bonds that were expected to play a role in variation in delinquent involvement were found to exert an influence (i.e., parental bonds), findings showed that an increase in the proportion of delinquent peers proved to be an important offending-inducing change in social circumstances. In addition, Chapter 5 showed that the impact of changes in the social environment depend on biological vulnerability, as a decrease in bonds with school only increased concurrent offense frequency in biologically vulnerable children.

In conclusion, with respect to its first aim, the current thesis found that delinquent development in the *Childhood Arrestees Sample* was often discontinuous. Half of the early onset offenders abstained from crime during follow-up according to official registration data, and the early onset offenders that did

re-offend, mostly did so at a low-rate (i.e., a little over 30% of the sample was registered for an offense every three to five years). Only a small group of early onset offenders— less than 14% of the sample – continued to display frequent and persistent offending behavior according to police crime records. In addition, delinquent development in the *Childhood Arrestees Sample* was found to be highly heterogeneous, as four to five distinct offending trajectories were identified in Chapters 3 and 4. Regarding associations between singular identified risk factors and offending trajectories, it was shown that males, participants of non-Westerns ethnic background, and children residing in low SES neighborhoods below age 12 were more likely to populate the trajectory-subgroups than the non-recidivist group. Unfortunately, the singular identified risk factors were less helpful in differentiating between offenders following distinct re-offending trajectories.

With respect to its second aim, findings presented in the current thesis highlight the relevance of accounting for the co-occurrence of problems in distinct life domains. Risk exposure in various life domains was found to shape the development of delinquent behavior over time. Importantly, the additive effect of risk factors from distinct domains was shown to be more complicated than simply the sum of risk, as specific combinations of risk factors were found to improve our understanding of heterogeneity in longitudinal offending patterns in early onset offenders. In addition, the impact of change in the social environment on offense frequency was found to depend on risk exposure in the individual life domain, as associations between change in social bonds and offense frequency depended on individuals' biological characteristics. Findings from the current thesis therefore stress the importance of examining combinations of problems in distinct life domains when aiming to explain between- and within-individual variation in offending over time.

6.3 THEORETICAL REFLECTION

The following paragraph discusses the implications of the aforementioned findings on theoretical assumptions regarding delinquent development and associated singular identified risk factors, as well as associated risk exposure across life domains.

6.3.1 Delinquent development and associated singular identified risk factors

The results presented in the current thesis to some extent provide support for assumptions from the most prominent framework used to explain delinquent development in early onset offenders: Moffitt's (1993, 2006) developmental taxonomy (Moffitt, 1993, 2006). First, in line with theoretical expectations (Moffitt, 1993, 2006), the current thesis identified an early onset group display-

ing continuously high offending rates, as well as a group displaying low yet persistent levels of offending across adolescence. Second, findings on the distribution of types of crime across offending trajectories were largely in line with theory (see Moffitt, 1993), as Chapter 3 showed that persistent offenders were versatile in their offending behavior, and were increasingly inclined to commit violent crimes toward early adulthood. Third, results regarding associations between offending trajectories and demographic and childhood neighborhood characteristics were in accordance with the Moffitt-taxonomy (Moffitt, 1993, 2006), as findings revealed that males, non-Western participants, and participants residing in low SES neighborhoods below age 12 were likely to populate the more frequent re-offending pathways.

However, two main findings presented in the current thesis seem to contradict expectations from typological theory. The first contradiction refers to the expected level of persistence in early onset offenders. Typological theory expects all early onset offenders to continuously engage in crime during – at least – adolescence (Moffitt, 1993, 2006). Official registration data revealed however that delinquent behavior in the *Childhood Arrestees Sample* was often discontinuous. Specifically, over half of the sample did not come into contact with the police during follow-up. This finding indicates that a first police registration in childhood is not always followed by a persistent offense pattern into early adulthood. It should be noted however that the *Childhood Arrestees Sample* was still found to be at increased risk of showing persistent delinquent behavior, as the prevalence of offending in the current sample was still three times higher than that of the general Dutch population (Blokland et al., 2010).

The second contradiction refers to the expected heterogeneity in offending trajectories in early onset offenders. Typological theory expects early onset offenders to either offend at a high rate during adolescence (i.e., high-rate chronic offenders), or at a lower, yet persistent, rate into early adulthood (i.e., low-rate chronic offenders) (Moffitt, 2006). However, the current thesis found that at least five offender subgroups could be distinguished in the *Childhood Arrestees Sample*. While this finding is in line with previously found heterogeneity in short-term re-offense patterns in children in contact with the law (van Domburgh, Vermeiren, et al., 2009), it reveals that heterogeneity in offending patterns exceeds theoretical expectations on early onset offenders.

6.3.2 Delinquent development and associated risk exposure across life domains

Findings presented in the current thesis overall highlight the importance of accounting for risk exposure across life domains when studying between- and within-individual variation in delinquent behavior (over time). As such, findings corroborate with theoretical expectations originating from biosocial

(Monroe & Simons, 1991; Zuckerman, 1999), and developmental (Moffitt, 1993; Wright et al., 2001) perspectives on offending.

Regarding between-individual variation in offending, the current thesis supports the theoretical notion that accounting for particular combinations of adverse circumstances in multiple life domains can increase our understanding of long-term delinquent pathways (Caspi et al., 2014; Moffitt, 1993, 2006; Stouthamer-Loeber et al., 2002). Specifically, and in line with the Moffitt-taxonomy, high-level persistent offenders were found to suffer from a combination of cognitive- and neighborhood-related problems, whereas low-level persistent offenders were found to experience a combination of individual (i.e., internalizing as well as externalizing), familial, and peer problems (Moffitt, 2006). Contradicting typological theory, however, is the finding that a substantial part of the sample developed relatively well in most life domains. The fact that the current thesis also identified distinct risk profiles based on level differences in risk exposure is however in line with prior studies identifying risk profiles in offender populations (e.g., T. Brennan et al., 2008; Lopez-Romero et al., 2019; Mulder et al., 2010; Schwalbe et al., 2008).

Lastly, the current thesis also confirmed the theoretical notion that accounting for the co-occurrence of risk in distinct life domains can help increase our understanding of within-individual variation in offending over time (Moffitt, 1993; Wright et al., 2001). In line with theory (Moffitt, 1993; Wright et al., 2001), the current thesis showed that the impact of time-varying social influences is modified by stable individual characteristic, i.e., biological vulnerability in the case of the present thesis. Specifically, in Chapters 2 and 5, it was shown that biologically vulnerable individuals are more likely to display antisocial behaviors when they are also exposed to social adversity. Findings therefore support the notion that individuals differing in levels of biological vulnerability respond in varied ways to similar social environments. While confirming the importance of social influences on offending behavior, results from this thesis do, however, challenge the theoretical assumption from sociological criminology that changes in social circumstances affect all offenders equally (Akers, 1973; Hirschi, 1969; Sutherland, 1947). Rather, findings from the current thesis highlight the relevance of taking offenders' biological traits into account when studying the effects of changes in social relationships on individual offending behavior over time. It therefore seems of great importance to integrate biological, sociological, and developmental perspectives on crime in order to arrive at a more comprehensive explanation of variation in offending behavior.

6.4 STRENGTHS, LIMITATIONS, AND DIRECTIONS FOR FUTURE RESEARCH

By studying delinquent development in children with a police contact/arrest and its correlates from multiple life domains, the current thesis made an important step in the field of developmental criminology. Specifically, three

unique qualities of this thesis are worth highlighting. First and foremost, the empirical chapters in this thesis are based on a rich dataset consisting of several registration databases, and information from questionnaires with childhood arrestees and their parents. Using this rich dataset made it possible to study delinquent development in this specific high-risk population over an extended period of the life-course, distinguish between a broad range of re-offense patterns, and study assumptions on a broad range of risk factors from multiple life domains. Second, the current thesis applied theoretical insights stemming from different scholarly traditions. By combining insights from sociological, biosocial, and developmental perspectives on offending, the current thesis progressed our understanding of possible mutually reinforcing factors from distinct life domains. This makes the current thesis innovative and interdisciplinary. Third, the use of advanced analytical strategies helped account for possible interaction effects between and clustering of risk factors for offending.

Despite the advancements made in the current thesis, there are a number of limitations that are worth mentioning, as well as some matters that could be addressed in future studies in the field of developmental criminology. First, conclusions drawn in this thesis on delinquent development are based on the specific offender group of childhood arrestees. For future research an essential avenue would be to examine the generalizability of current findings to other samples of early onset offenders – for example, defined as displaying prolonged antisocial behavior at home and at school prior to the age of 12 (see for example Moffitt et al., 1996).

Second, the reliance on police registrations as a measure of offending might have influenced the shapes of the delinquent trajectories identified in Chapters 3 and 4. Defining offending trajectories based on registered crimes rather than self-reported crime might have resulted in an underestimation of the total number of delinquent acts, as we lack information on delinquent behavior unknown to the police. For comparison, prior work comparing conviction data and self-reported offenses revealed that individuals reported 22 offenses for every conviction (Theobald, Farrington, Loeber, Pardini, & Piquero, 2014). Furthermore, underestimations of offending in official registration data might be selective, as chances of being arrested by the police are not equal for all offenders, for example due to selective monitoring. On the other hand, the use of police registrations might have also resulted in an overestimation of offending behavior, as police registrations indicate the number of times a person was identified as a suspect in a criminal case, as opposed to the number of times a person was convicted. Besides these disadvantages of police registrations, the use of official data has important advantages as well. Compared to self-report data, official registration data are more reliable regarding the timing of offenses, and less likely to be disturbed by memory problems (van de Rakt, 2011).

Third, it is important to note that the trajectories identified in Chapter 3 and 4 are not meant to represent ‘true types of offenders’. Trajectory modelling is exploratory in nature, and will extract a number of distinct trajectories in most datasets (Morizot, 2019). In addition, trajectory modelling is not accommodating to outliers (Liu & Bushway, 2019), and may force offenders with extreme offending trajectories into larger trajectory subgroups. Trajectories can however be useful in simplifying the complex reality of trajectories of offending behavior (Nagin & Tremblay, 2005), as it is fair to argue that distinguishing between quite opposite courses of offending will increase our understanding of delinquent development with age.

Fourth, even though the current thesis had access to a considerable number of registration databases, information on noncriminal justice interventions during the observation period were not retrieved, and would perhaps have been beneficial. To the extent that parents, schools, child protection services, and other professionals were actively trying to curb participants’ delinquent development, the identified trajectories could have evolved either because of or despite such efforts. Future research could strive to include information on noncriminal justice interventions, in order to reveal possible effects of prevention and intervention efforts aimed at reducing recidivism in early onset offenders.

Fifth, the current thesis used a specific definition of biological vulnerability in its empirical chapters; exposure to peri/prenatal problems. As findings from the current thesis showed that simultaneously studying biological and social/environmental correlates of delinquency can contribute to our understanding of the etiology of delinquent development, future research could strive to use other biological parameters (i.e., genetics, brain abnormalities, neuropsychology, psychophysiology, neurotransmitters, and hormones, see F. R. Chen et al., 2015; Raine, 2002a; Rudo-Hutt, 2011; Yang et al., 2014) to explore whether current findings can be replicated when different definitions of biological vulnerability are used.

On a final note, there are several meaningful ways for future research to build on the findings presented in the current thesis. First, future research could aim to study risk exposure on the level of the individual, in order to develop more personalized risk prediction models. Such studies may help transfer research findings based on groups of individuals to the individual level, as well as improve the applicability of research findings to individual treatment plans. Second, it would be useful to identify risk profiles of distinct demographic groups of offenders, as there are indications that concurrent risk factors of offending may differ between such groups (see for example DeLisi et al., 2017; Rhoades, Leve, Eddy, & Chamberlain, 2016). Lastly, as an early onset of offending is theorized to be associated with a range of adverse adolescent and adult outcomes (Moffitt, 1993), it would be interesting to explore whether the use of risk profiles could also improve our understanding of

outcomes such as drug and/or alcohol abuse, young parenthood, and unemployment.

6.5 PRACTICAL IMPLICATIONS

Findings from the current thesis offer three main implications for prevention and intervention efforts aimed at curbing offense patterns in childhood arrestees. First, the discontinuity of offending in a large share of the *Childhood Arrestees Sample* indicates that intervening at a young age may be unnecessary for a substantial group of early onset offenders known to the police. Rather, generally healthy developing children would benefit most from being diverted away from intervention programs, as prior work revealed that targeting offenders at low risk of re-offending may actually lead to an increase in their re-offending behavior (Lowenkamp & Latessa, 2002). When the police refers childhood arrestees to Child Welfare Services Youth, short interventions may thus be offered when problems in the child and the family are found to be limited.

Second, by revealing heterogeneity in offense patterns among early onset recidivists, Chapters 3 and 4 showed that a small proportion of childhood arrestees continues to display persistent offending behavior and inflicts substantial harm on others. In this small group of childhood arrestees, it is therefore important to prevent the progression along persistent offending pathways. As Chapter 4 showed that children experiencing problems across life domains are at increased risk of continuing their delinquent behavior, it is important for Child Welfare Services Youth to refer those children and their family to a care institution and offer them required help. Findings reported in Chapter 4 suggest that offering help to prevent the escalation of offending behavior would be most viable when aimed at children residing in neighborhoods characterized by low socioeconomic status, especially if children also suffer from low intelligence levels, because, as a group, such children were found to be at increased risk of continuously engaging in crime at a high-rate.

Third, besides pointing towards groups of childhood arrestees at risk of displaying persistent offending behavior, the current thesis also offers insight into the types of problems interventions could target. Chapter 5 showed that several malleable social influences are related to change in individual offending behavior, and these social factors may therefore be the focus of intervention efforts (for an overview of multifaceted interventions for juvenile offenders, see Boxer & Goldstein, 2012). Specifically, findings from the current thesis indicate that it is important for practitioners and clinicians to focus on minimizing contact with delinquent peers, as an increase in affiliation with delinquent peers was associated with an increase in offense frequency over time. In addition, current findings suggest that it is beneficial to address early signs of school disengagement, as skipping class has the potential to facilitate an

increase in individual offense rates. Thus, findings from the current thesis overall suggest that it is most effective for interventions to prevent the hindrance of conventional developmental pathways. Interventions should focus on creating a wide support system to help facilitate positive development in order to decrease the risk of continued delinquent involvement.

