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**YOUTH DELINQUENCY IN DUTCH
CITIES AND SCHOOLS:
A MULTILEVEL APPROACH**

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Youth delinquency in Dutch cities and schools: A multilevel approach

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Youth delinquency in Dutch cities and schools:
A multilevel approach

Jeugddelinquentie in Nederlandse steden en scholen:
Een multilevel benadering

Een wetenschappelijke proeve op het gebied van de Sociale Wetenschappen

PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Radboud Universiteit Nijmegen
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Chapter 1

Introduction

1.1 Background, aims and questions

Trouble caused by young people is a growing concern in Dutch society. Frequently, media report about youngsters causing problems: problems related to violence, vandalism, and other offences. These offences are summarised under the label of crime and/or delinquency. In the USA delinquency differs from crime. Delinquency stands for the less serious offences, whereas crime stands for the more serious ones. In the Netherlands, the terms delinquency and crime are used synonymously (Van der Laan, 2001). Youth delinquency is of growing interest in Dutch policy. Since 1993 the number of 12 to 17 year old adolescents who are questioned as suspects of crime has shown a steady increase (Eggen, Van der Laan and Bogaerts, 2007). According to self-report data, however, the trend in delinquency among 12 to 17 year old adolescents in the Netherlands seems quite stable (Van der Laan et al., 2006). Considering trends in the number of suspects questioned by the police which show that crime and delinquency among adolescents is most prevalent in urban areas (Blom and Van der Laan, 2007), it is noteworthy that in the Netherlands no attempt has yet been made to connect data from different social-ecological contexts, like city and neighbourhood, to individual data regarding explanations of youth delinquency.

The aim of Dutch urban policy is to tackle the problems facing Dutch cities. Improving public social safety is one of the major themes within the urban policy. Scholars in the Netherlands have seldom paid attention to the possible influence of social-ecological contexts on public social safety like victimisation and criminal or delinquent behaviour. This has resulted in a demand for more systematic research on problems regarding public social safety in Dutch cities.

In this dissertation we will examine the influence of different social-ecological contexts on youth delinquency for the Netherlands. For this purpose, data among 12 to 17 year old adolescents are used from 11 major cities in the Netherlands, which make it possible to connect data from different social-ecological contexts, like city and neighbourhood. By creating such a dataset, including both individual and contextual data related to crime and delinquency, progress is made on previous research by the possibility to examine the influence of different social-ecological contexts on youth delinquency.

This subject of research has received little attention in the Netherlands, despite the importance of such contexts as shown by criminological theories, previous research in other countries, and official statistics that make it possible to link individual data with contextual

characteristics. Therefore the first aim of this dissertation is to examine the influence of different social-ecological contexts on youth delinquency, above and beyond the influence of individual, family and peer characteristics.

Most research studying factors that put adolescents up to committing delinquent acts or withhold them from it, focuses mainly on characteristics of the individual self, or characteristics of important social networks close to the individual, like family and peers. An explanation for the way family and peers affect youth delinquency is given by different classic theories. For example, social control theory, according to Hirschi (1969), proposes that adolescents with a stronger bond to society, that is with stronger ties to their family and their school, are less likely to commit delinquent acts. This proposition has received substantial support in past research. Differential association theory argues that crime results from learning positive 'definitions' towards criminal behaviour that are learned through interaction with others (Sutherland, 1947). People who interact more with others who have favourable attitudes towards criminal behaviour, will learn these unconventional norms, and therefore will be more likely to show delinquent behaviour. Thus, according to this reasoning, association with delinquent peers is an important predictor of delinquent behaviour (Sutherland, Cressey, & Luckenbill, 1992). Previous research has shown ample evidence that association with peers who show deviant behaviour is an important predictor of the same behaviour in adolescents (e.g. Agnew, 1993; Aseltine, 1995; Lotz and Lee, 1999; Vitaro, Brendgen and Tremblay, 2000; Haynie, 2001; Henry, Tolan and Gorman-Smith, 2001; Garnier and Stein, 2002).

Studies on youth delinquency integrating elements of social control theory in association with deviant peers do not show consistent results. In some studies it has been found that association with delinquent peers fully mediates the effect of social control characteristics on delinquency (Simons et al., 1991; Warr, 1993; Scaramella et al., 2002). Other scholars have found that social control characteristics both have a separate, direct effect on delinquency and an indirect effect through association with delinquent peers (Aseltine, 1995; Costello and Vowell, 1999; Erickson, Crosnoe, & Dornbusch, 2000).

Agnew (2003) has given an explanation for these inconsistent findings. He argued that characteristics affecting youth delinquency have differential effects in different contexts. More specifically, he proposes that the bond between adolescents and their family, peers and school may have differential effects on youth delinquency in different social-ecological contexts. Only a few studies, most of them American, have tested such hypotheses as proposed by Agnew (2003). In the Netherlands the hypothesis that this bond between adolescents and their family and peers have differential effects in different social-ecological contexts has not yet been tested. In this

dissertation we will try to fill this void by elaborating on and testing classic and contemporary theories with updated hypotheses proposing how different social-ecological contexts can condition the relation between these bonds and youth delinquency. This is the second aim of this dissertation.

In summary: the intention in this dissertation is to get more insight in the way in which social-ecological contexts can add to the explanation of youth delinquency. This field of study has received little attention in Dutch criminological research. To be able to make more profound statements about which social-ecological contexts affect youth delinquency in which way, we have focused on different social-ecological contexts in which adolescents grow up, namely city, neighbourhood, and school. The focus will not only be on the possible direct effects of characteristics of the different social-ecological contexts, on top of the influence of the relationship with family and peers, but also on the possible conditioning effects of social-ecological contexts. We will examine whether these relationships have differential effects in different social-ecological contexts. The central research questions of this dissertation thus read:

- 1) To what extent and in which way do social-ecological contexts affect youth delinquency in the Netherlands, above and beyond individual characteristics, such as the relationship with family and peers?
- 2) To what extent and in which way do social-ecological contexts condition the relationship between individual characteristics, such as the relationship with family and peers, and youth delinquency in the Netherlands?

1.2 Social-ecological theory and youth delinquency

The notion of testing the direct and conditional influence of social-ecological contexts on adolescent delinquent behaviour is derived from social-ecological theory. Most sociological research on delinquent behaviour of adolescents concentrates on the influence of the bond between them and their family, peers, and school, ignoring the possible influence of social-ecological contexts, such as cities, neighbourhoods, and schools. Social-ecological theory stresses, however, that the relation between risk factors and behavioural outcomes depends on the context in which those risks are experienced (Bronfenbrenner, 1986). This theoretical approach thus provides an indication of how social-ecological contexts can add to the explanation of youth delinquency. In Bronfenbrenner's developmental ecological theory (1979), one of the central propositions is that individual development is influenced by elements of the social environments

in which adolescents grow up. While growing up, adolescents spend their time in various social environments. They live with their parents and brothers and sisters, go to school, hang out with their friends, and are members of a sports club. To study their behaviour properly, all these contexts need to be taken into account. The development of individuals must be seen related to the social-ecological settings in which they socialise (Tolan, Gorman-Smith and Henry, 2003). However, in recent criminological research little attention has been paid to possible differential effects of risk factors in different social-ecological contexts on youth delinquency.

Recently, Crosnoe (2004) provided an example as to how an social-ecological context affects the relationship of risk factors in adolescent behaviour. He explored the interaction between relationships between adolescents and their parents and school environment, and its effect on adolescents' academic achievement. His results indicated that adolescents, who are not close to their parents, profit less from going to schools with strong bonds between students and teachers. On the other hand, a positive bond between adolescents and their parents had a stronger effect on academic achievement in schools that are characterised by better relationships between students and staff. More generally, these findings imply that factors enhancing positive behaviour are more effective in 'advantaged' contexts than in 'disadvantaged' contexts. Extending this reasoning to delinquent behaviour could imply that characteristics preventing adolescents from negative behaviour, e.g. delinquent behaviour, are more effective in 'advantaged' contexts than in 'disadvantaged' contexts. An explanation for this proposition could be that negative stimuli are more prevalent in negative, disadvantaged contexts that will reduce the effectiveness of control over adolescents' (delinquent) behaviour in such contexts.

1.3 The influence of social-ecological contexts on youth delinquency

In the following sections we will describe previous research on the influence of social-ecological contexts on adolescent delinquency. For each social-ecological context subject of this dissertation, we will discuss previous research regarding direct and interaction effects of characteristics of these contexts on youth delinquency. By analysing these direct and conditional contextual effects, we will gain more insight into the way social-ecological contexts can help explain adolescent behaviour, and which research themes have not been studied yet.

1.3.1 City

Unlike studies in the Netherlands or in other European countries, various studies conducted in the United States have paid attention to differences in crime rates between cities (e.g., Blau and

Blau, 1982; Miethe, Hughes and McDowall, 1991; Shihadeh and Steffensmeier, 1994; Shihadeh and Flynn, 1996; Krivo and Peterson, 2000; Parker, 2001; Velez, Krivo and Peterson, 2003). Using macro level theories, these researchers propose how differences in crime rates between various cities can be explained.

Two main theoretical approaches of these studies are on social stratification and social control (Ousey, 2000). The social stratification perspective implies that crime relates to economic conditions: cities with high crime rates tend to be low in economic status (Agnew, 1999). The main perspectives of this approach are the absolute deprivation model and the relative deprivation model. According to the absolute deprivation model, crime is more likely to prevail in cities with low income levels (Ousey, 2000). Thus, absolute deprivation theory assumes implicitly that in cities with low income levels, crime is less readily rejected as a means of satisfying one's needs. The relative deprivation model focuses on the effect of income inequality on city crime rates instead of the effect of absolute levels of poverty. The idea behind this approach is that income inequality undermines the social integration of communities by widening the gaps between different (income) groups, which can generate strain or frustration, which in turn increases crime (Agnew, 1999).

The other main theoretical approach is the social control perspective that has been derived from social disorganisation theory developed by Shaw and McKay ([1942]1969). Social disorganisation theory proposes that a lack of social integration in communities decreases informal social control in these areas, which in turn increases crime rates in these communities. Originally, social disorganisation theory was developed to explain differences in crime rates between neighbourhoods. Propositions derived from social disorganisation theory have also been used to explain differences in crime rates between cities (Miethe et al., 1991).

Researchers studying the effects of city-level characteristics on crime have focused exclusively on explaining crime rates at city level, by this neglecting individual characteristics (Blau and Blau, 1982; Sampson, 1987; Land, McCall and Cohen, 1990; Balkwell, 1990; Miethe et al., 1991; Shihadeh and Steffensmeier, 1994; Shihadeh and Flynn, 1996; Shihadeh and Ousey, 1996; Krivo and Peterson, 2000; Parker, 2001; Velez et al., 2003). It is thus assumed, but not tested, that these city characteristics influence adolescent delinquent behaviour next to individual characteristics. One of the main purposes of this dissertation is to test the influence of city characteristics on individual levels of delinquency. Using data with both individual and contextual characteristics available, it is possible to examine which city-level characteristics have separate effects on individual levels of crime, above and beyond the influence of relevant individual determinants, composition effects and characteristics of other important social-ecological

contexts, such as the neighbourhood. By doing so, it will be possible to make more profound statements about the influence city characteristics have on adolescent delinquent behaviour, statements that previous research has not yet been able to make.

1.3.2 Neighbourhood

Previous research has shown that neighbourhood characteristics influence delinquent behaviour, even when individual characteristics are taken into account (Sampson and Groves, 1989; Peeples and Loeber, 1994; Sampson, Raudenbush and Earls, 1997; Beyers et al., 2001). Most of this research derived its hypotheses from social disorganisation theory (Shaw and McKay, [1942]1969). Considering that most structural characteristics related to social disorganisation theory are strongly interrelated, some researchers used an index to measure contextual disadvantage, in order to test social disorganisation theory at a neighbourhood level. Peeples and Loeber (1994) found in their research on the seriousness and frequency of delinquency by boys, that adolescents living in underclass neighbourhoods showed more delinquent behaviour than adolescents who did not live in underclass neighbourhoods. Beyers et al. (2001) showed that neighbourhood disadvantage causes boys to be more violent. Adolescents in disadvantaged neighbourhoods show more delinquent behaviour than adolescents in advantaged neighbourhoods (Beyers et al., 2001). But, as social-ecological theory assumes, the question remains whether individual risk (or protective) factors have the same effect in advantaged and disadvantaged neighbourhoods.

In the Netherlands, the way in which neighbourhood characteristics shape delinquent behaviour of adolescents has received attention in two studies. However, results are not consistent and focus only on the direct influence of neighbourhood characteristics. Rovers (1997) in his study in neighbourhoods of one Dutch city (Rotterdam) found neither an influence of neighbourhood deprivation, nor an effect of a lack of social control in the neighbourhood on criminal behaviour of adolescents. Schneiders et al. (2003), on the other hand, actually found that neighbourhood disadvantage contributes to children's externalising problem behaviour.

To improve upon previous research in the Netherlands, we focus in this dissertation both on the direct influence neighbourhood characteristics can exert on adolescent delinquency, and on the conditional effect neighbourhood characteristics can have on the relationship between family and peer characteristics and youth delinquency. By applying such an approach, we will attempt to paint a clear picture of how neighbourhoods can affect delinquent behaviour of Dutch adolescents, above and beyond the influence of important individual, family, and peer characteristics.

1.3.3 School

Studies on youth delinquency have shown only little interest in the possible influence of characteristics of the school context. The few studies examining the influence of the school context concentrate on the main effects of school level characteristics on youth delinquency, neglecting possible varying effects of individual level characteristics across schools (e.g., Felson et al., 1994; Welsh, Greene and Jenkins, 1999).

Previous research has shown that larger schools (Payne, Gottfredson and Gottfredson, 2003; Gottfredson et al., 2005), and schools with less experienced teachers (Stretesky and Hogan, 2005), show higher levels of school disorder. These characteristics cause greater difficulties in monitoring and controlling pupils' deviant behaviour. Following social disorganisation theory, according to Shaw and McKay ([1942]1969) weak social networks indicate low social cohesion within a context, which in turn relate to higher levels of disruption. From a social disorganisation perspective on school context, it can thus be argued that students at schools that experience greater difficulties controlling and regulating their students will be more likely to commit delinquent acts.

Another related approach in studies on the influence of school context on youth delinquency is derived from Hirschi's social control theory. Payne and colleagues (2003) argue that as students become more involved in their school the level of school disorder will be lower. The school-bonding factor can be seen as an indicator of school climate (Welsh et al., 1999). Higher levels of school bonding or school attachment indicate a better school climate. Previous research has shown that better school bonding (Payne et al., 2003) and better school climate (Gottfredson et al., 2005) reduce the extent of delinquent behaviour among adolescents.

As mentioned before, the limited number of studies that examine the influence of school context on youth delinquency focus solely on the direct influence of school context. Possible conditional effects of school context on the relationship between family, peers, and school and youth delinquency are ignored. However, social-ecological theory suggests that school context will affect the relationship of individual risk and protective factors with delinquent behaviour. Concentrating upon the school as context can solve this lacuna. The aim in this dissertation related to school as social-ecological context is twofold. First, we will examine which school characteristics affect delinquent behaviour among adolescents, above and beyond the influence of the bond to parents, school, and peers. Secondly, we examine to what extent school characteristics condition the impact of bonds to parents, school, and peers on delinquent behaviour.

1.4 Data

To test the way in which city characteristics affect individual levels of youth delinquency, data were compiled from 11 cities in the Netherlands, namely Almelo, Den Bosch, Heerlen, Helmond, Leeuwarden, Maastricht, Nijmegen, Rotterdam, Schiedam, Sittard-Geleen and Venlo. From 1998, these cities carried out at least one youth survey. The purpose of these surveys was to describe the circumstances and lifestyles of adolescents. All of the surveys are based upon the Dutch Standard Youth Monitor (Bijmold et al., 1998), which optimizes the comparability of the surveys. In every city adolescents were questioned about their (risk) behaviour (such as drinking, drug use, and delinquency), their situation at home and their relationship with their care takers, their peer relations, and background characteristics (such as age, ethnicity, and gender).

Data collection and sampling methods were not the same for all of the cities. Some cities used a sample of all youth living in the particular city, other cities sampled schools at which they administered the questionnaires in class. By this method, the adolescents questioned were not only those living in the particular city but also those living in municipalities nearby. For this research we selected adolescents from the different datasets, taking only those aged 12 to 17 who lived in one of the cities. To be able to test hypotheses related to the influence of city and neighbourhood characteristics, official data at city and neighbourhood level were connected to the individual level data. These data are regularly gathered and made available by Statistics Netherlands (C.B.S.).

A disadvantage of post hoc harmonisation of different datasets is the comparability of relevant indicators. For example, all cities asked for a list of delinquent acts, whether or not the adolescent had committed that act over the last 12 months. Six delinquent acts were covered in all 11 cities. And therefore, these six acts will be used to measure youth delinquency. These acts are theft from shops, vandalism, graffiti, burglary, carrying a weapon, and threatening other people for money.

Next to the self-report data, official police statistics are also available to measure youth delinquency by. Differences between both ways of measuring delinquent behaviour give rise to debate, because both measurements have advantages and disadvantages (see for a discussion in the Netherlands, for example, Wittebrood and Junger, 1999; Luijpers, 2000; Van de Bunt et al., 2000; Kruissink and Essers, 2001). The advantage of self-report data is the possibility to link individual and contextual characteristics with these data. Using police records makes this link impossible, because these measures contain no individual characteristics for reasons of privacy

protection. As the main aim is to test the influence of contextual characteristics above and beyond individual characteristics, the need for self-report data is clear.

Another reason for using self-report data is the interest in this research in explaining both serious delinquent behaviour and less serious delinquent behaviour. Serious delinquent acts refer to crimes like violent robbery and burglary. A less serious delinquent act is for instance vandalism. The police give less serious delinquent acts less priority, because this kind of behaviour is considered to be less problematic in comparison with serious delinquent behaviour. Partially because of this lack of priority, these crimes often are committed without the offenders getting caught, which implies that these individuals will not be recorded in police records, even though they cause great annoyance in society.

To test the hypotheses regarding school context, data are used from the WHO-study 'Health Behavior in School-Aged Children (HBSC)' gathered in 2001. The HBSC-study addresses health behaviors, health and its social context in children and adolescents in Europe and North America (Currie et al., 2001). For the purpose of this dissertation the focus is upon Dutch adolescents at secondary school (first four years). In HBSC, a two-stage random sampling procedure is used (Currie et al., 2001). First, out of a list of all schools in the Netherlands, a random sample of schools was selected proportionally with urbanization strata. Secondly, within each school, one class from every grade (1 – 4) was selected at random from a list of all classes provided by every participating school. Within classes, all students were drawn as respondents.

The individual level data of the HBSC-study were expanded with school level characteristics, using the (Dutch) website 'Education in Numbers'. This website provides information about primary and secondary schools, such as school size, exam grades, and teacher information. In the Netherlands most schools have different locations, and are part of a larger school organization. Where available, information of the school at the location that participated in the HBSC study was used, if this was not the case, we used the information of the school as a whole.

1.5 Outline of the dissertation

Whereas studies attempting to explain differences in crime rates between cities neglect neighbourhood and individual characteristics, research on individual rates of crime and delinquency neglects the influence of higher level characteristics, such as city characteristics. The main aim in *chapter 2* is to explore whether there is evidence, both theoretically and empirically, to distinguish the city level as a context for the explanation of youth delinquency, next to the

neighbourhood level and individual level. To accomplish this, first macro level theories of crime and delinquency will be discussed. Findings from previous research are shown which suggest that city characteristics explain intercity differences in crime rates. Secondly, we will test whether there is empirical evidence to distinguish the city as a social context influencing youth delinquency above and beyond influences of neighbourhood and individual characteristics. The amount of variance at the city, neighbourhood and individual level is estimated using multilevel analysis, while controlling for composition and methodological effects. To investigate the variance at different levels, data from different Dutch cities will be compiled, thus making intercity comparisons possible.

Building upon the results found in *chapter 2*, in *chapter 3* it will be tested which city and neighbourhood characteristics have additional effects on youth delinquency, controlling for individual level, demographic characteristics. Furthermore, by testing the influence of different determinants at each level, an indication is given as to which characteristics are decisive in the explanation of youth delinquency at city and neighbourhood level. For this purpose similar hypotheses on city and neighbourhood level are derived from social disorganisation theory to disentangle the effects of these different social-ecological contexts on youth delinquency. Similar phenomena measured at both city and neighbourhood level will be included in the analysis simultaneously to ascertain which phenomena measured at which level affect youth delinquency. No conditional effects will be tested, as on the individual level only demographic characteristics are available. With regard to the conditional effect of social-ecological contexts, hypotheses will be developed regarding differential effects of the bond to parents and peers with youth delinquency in different contexts.

The main aim of *chapter 4* is to test to what extent neighbourhood characteristics condition the effects of individual characteristics on youth delinquency. From previous research it is known that some neighbourhood characteristics affect youth delinquency (Sampson and Groves, 1989; Peeples and Loeber, 1994; Sampson et al., 1997; Beyers et al., 2001). Furthermore, testing the conditional effect of the neighbourhood seems fruitful, regarding the propositions of Sampson and Laub (1994, pp. 523 – 524) that poverty and structural disadvantage at the neighbourhood level influence delinquency by reducing the capacity of families to establish effective informal social controls.

The aim of the last empirical chapter of this dissertation, *chapter 5*, is twofold. First, we will examine which school characteristics affect delinquent behaviour among adolescents, above and beyond the influence of the bond to parents, school, and peers. And second, we will examine to what extent school characteristics condition the impact of the relationship with parents,

school, and peers on delinquent behaviour. This approach seems promising as researchers who studied the effect of neighbourhood characteristics on youth delinquency, found both direct effects of neighbourhood characteristics on delinquent behaviour (e.g., Beyers et al., 2001; Sampson et al., 1997), as well as effects of individual level characteristics which vary across neighbourhoods (e.g., Hoffmann, 2002; Knoester and Haynie, 2005).

In *chapter 6* the empirical findings of this dissertation are summarised. Furthermore, an answer is given to the research questions, and new research questions are posed. Shortcomings of this research are discussed. In conclusion the scientific and societal relevance of this study's findings are stipulated.

Chapter 2

Distinguishing the city, neighbourhood, and individual level in the explanation of youth delinquency: A multilevel approach¹

Abstract

Previous research on intercity differences in crime rates neglects individual determinants of youth delinquency, whereas studies focusing on neighbourhood and individual level explanations of youth delinquency neglect higher level, city characteristics. This raises the question to what extent city characteristics can contribute to the explanation of youth delinquency, above and beyond the influence of neighbourhood and individual characteristics. To answer this question we first discuss how previous macro-level research explains city differences in crime rates, and secondly we test whether there is empirical evidence that youth delinquency differs not only between individuals, but also between neighbourhoods and, moreover, between cities. Using data collected among 12 to 17 year old adolescents from 11 Dutch cities, multilevel analyses revealed that there is a substantial amount of variance to be explained at the city level, even after controlling for composition effects and differences between surveys. In contrast with previous research studying neighbourhood influences of youth delinquency, but neglecting the city level, we found only little variance at neighbourhood level. Possible explanations and implications for future research are given by linking explanations at the different levels.

2.1 Introduction

In criminological research there is great interest in the study of macro-level crime rates. Especially in the United States, differences in crime rates between cities have received attention in various studies (e.g., Blau and Blau, 1982; Miethe et al., 1991; Shihadeh and Steffensmeier, 1994; Shihadeh and Flynn, 1996; Krivo and Peterson, 2000; Parker, 2001; Velez et al., 2003). Using macro level theories, these researchers propose how city differences in crime rates can be explained. However, these studies neglect individual determinants of individual delinquency. Hence when in macro-level research city characteristics affect city level crime rates, it is assumed, but not tested, that these city characteristics influence individual levels of crime. This raises the question whether macro-level predictors (i.e. city characteristics) have separate effects on individual levels of crime, controlling for the influence of other relevant factors, e.g. individual determinants and composition effects.

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A number of investigations are done at a city level, and focus on the neighbourhood and/or individual level. Characteristics of some of the better-known studies in the US and Europe will be discussed. For the US, these projects are the Denver Youth Survey (DYS), the Rochester Youth Development Study (RYDS), the Pittsburgh Youth Study (PYS), and the Project on Human Development in Chicago Neighbourhoods (PHDCN)². In Europe three of these projects are the Peterborough Youth Study (PBYS), the German project ‘Social Problems and Juvenile Delinquency in an Ecological Perspective’ (SPJDEP), and the Edinburgh Study of Youth Transitions and Crime (ESYTC)³. All of these projects aim to provide better insights in the determinants of youth delinquency, but focus on different levels. The DYS, the RYDS, and the PYS are longitudinal programmes studying adolescent development and delinquent behaviour. These projects use a sample in which adolescents at risk are overrepresented. The main interest is to study individual characteristics, both psychological characteristics and characteristics related to family, peers, and school. The PHDCN and SPJDEP also study individual determinants of youth delinquency, but the interest of these researches is more on the influence of neighbourhood characteristics on delinquency. Hence, these projects’ main focus is on the neighbourhood level. The PBYS, and the ESYTC concentrate both on individual determinants and neighbourhood determinants of delinquency. Their emphasis is more evenly divided between the individual level, and the neighbourhood level, however with the disadvantage that they cannot test whether determinants at higher levels, e.g. the city level, influence youth delinquency. This is particularly disadvantageous as it is questionable whether findings from single city studies can be generalized to the situation in other cities (Rountree and Land, 2000). These studies can thus not provide an answer to the question whether city characteristics affect youth delinquency above and beyond the influence of neighbourhood and individual characteristics.

Whereas studies attempting to explain differences in crime rates between cities neglect neighbourhood and individual characteristics, research on individual rates of crime and delinquency neglects the influence of higher level characteristics, such as city characteristics. The main aim in this chapter is to explore whether there is evidence, both theoretical and empirical, to distinguish the city level as a context for the explanation of youth delinquency, next to the

² For further information on the DYS, see Huizinga, Esbensen and Weiher (1991); Browning and Huizinga (1999) and Thornberry and Krohn (2003). More information on the RYDS can be found in Thornberry et al. (1991); Browning, Thornberry and Porter (1999) and Thornberry and Krohn (2003). The PYS is described more thoroughly in Loeber et al. (1991); Browning and Loeber (1999) and Thornberry and Krohn (2003). For further information on the PHDCN, visit <http://www.hms.harvard.edu/chase/projects/chicago/about/>.

³ Further reading on the PBYS can be done by reading Wikström (2003). More information on the SPJDEP is found on http://www.iuscrim.mpg.de/forsch/krim/oberwittler1_e.html. For further information on the ESYTC see Smith and McVie (2003).

neighbourhood level and individual level. To accomplish this, we first will discuss macro level theories of crime and delinquency. We will show findings from previous research which suggests that city characteristics explain intercity differences in crime rates. Secondly, we will test whether there is empirical evidence to distinguish the city as a social context influencing youth delinquency above and beyond influences of neighbourhood and individual factors. We estimate the amount of variance at the city, neighbourhood and individual levels using multilevel analysis, while controlling for composition and methodological effects. To investigate the variance at different levels, data from different Dutch cities are compiled, thus making intercity comparisons possible. To our knowledge this intercity perspective has not been used in previous research.

2.2 Theoretical background

2.2.1 Macro-level theories of crime and delinquency

Various researchers have studied community differences in crime rates. Two main theoretical approaches of these studies are social stratification and social control (Ousey, 2000). The social stratification perspective implies that crime relates to economic conditions: communities with high crime rates tend to be low in economic status (Agnew, 1999). The main perspectives of this approach are the absolute deprivation model and the relative deprivation model. According to the absolute deprivation model, crime is more likely to prevail in communities with low income levels (Ousey, 2000). Thus, absolute deprivation theory assumes implicitly that in communities with low income levels crime is less readily rejected as a means of satisfying one's needs. The relative deprivation model focuses on the effect of income inequality on community crime rates instead of the effect of absolute levels of poverty. The rationale behind this approach is that income inequality undermines the social integration of communities by widening the gaps between different (income) groups, which can generate strain or frustration, which in turn increases crime (Agnew, 1999).

The social control perspective implies that a lack of social integration in communities decreases informal social control in these areas, which in turn increases crime rates in these communities. This perspective has been derived from social disorganization theory developed by Shaw and McKay ([1942]1969). Shaw and McKay tried to explain why crime rates differed between neighbourhoods. They found particular neighbourhood characteristics and crime rates to be related. Neighbourhoods characterized by high residential mobility, by ethnic heterogeneity, and by a low economic status showed higher crime rates. Shaw and McKay explained this finding by proposing that neighbourhoods with these characteristics are characterized by community

disruption, which implies a low degree of social cohesion, which can be identified by low social control and weak social networks.

2.2.1.1 Previous research on city differences in crime rates

Surprisingly, studies on intercity differences in crime rates have not yet integrated explanations derived from lower levels than the city level in their research. The stratification approach is the dominant perspective in most studies on city differences in crime rates. Blau and Blau (1982) showed that the absolute poverty level in a city has no influence on violent crime, after controlling for the city's income inequality. Their results are thus in support of the relative deprivation thesis. These results were supported by Logan and Messner (1987), who found that poverty-inequality has a positive effect on a city's violent crime rate. Balkwell (1990) found support for both the absolute and relative deprivation thesis. His results showed that both absolute poverty and income inequality, both measured at city level, affect city crime rates. In their research on the influence of different macro-level determinants of homicide, Land et al. (1990) found that resource-deprivation, as measured by community measures of median income level, income inequality, percentage of families below the poverty line, percentage of blacks, and percentage of one-parent families, showed a significant relationship with homicide rates. The more deprived a community, the higher the crime rate.

Previous research showed also evidence supporting social disorganization theory. Miethe et al. (1991) found an influence of determinants derived from social disorganization theory on official crime rates in US cities. The more ethnically heterogeneous and the less institutional control in a city, the higher the city's level of crime. Another explanation for city differences in crime rates is the level of segregation in a city. Shihadeh and Flynn (1996) showed that the level of black segregation in a city significantly affects city levels of serious black violence rates. Parker (2001) showed that city-level segregation affects city-level homicide rates both for blacks and for whites. In their paper on differences in homicide offending between blacks and whites in US cities, Velez et al. (2003) found that in cities where residential segregation is higher, blacks have much higher levels of homicide offending than whites.

2.2.1.2 Previous research on neighbourhood differences in crime rates

Various researchers tested elements of Shaw and McKay's propositions that neighbourhood characteristics like high residential mobility, ethnic heterogeneity, and low economic status directly affect the likelihood of its residents to commit crimes (e.g. Sampson and Groves, 1989; Peeples and Loeber, 1994; Sampson et al., 1997; Wittebrood, 2000; Beyers et al., 2001). Most of

these studies took, individual as well as neighbourhood characteristics into account. Wittebrood (2000) showed that individuals in neighbourhoods with low economic status, high ethnic heterogeneity, and with high residential mobility, are more likely to become victims of violent crime. Beyers et al. (2001) showed that neighbourhood disadvantage reinforces boys' violent delinquency. Their measure of neighbourhood disadvantage is constructed by using six indicators: percent families with children headed by single parents, median household income, percent families below the poverty level, percent households on public assistance, percent unemployed, and percent African Americans. Peebles and Loeber (1994) found the same in their research on the seriousness and frequency of adolescent boys' delinquency. Schneiders et al. (2003) investigated to what extent neighbourhood disadvantage contributes to children's behavioural and emotional problems, and found support for the findings of Beyers et al. (2001). Sampson and Groves (1989) found only ethnic heterogeneity to have a direct effect on the offence rate. Sampson et al. (1997) showed direct effects of neighbourhood characteristics, concentrated disadvantage, immigrant concentration, and lack of residential stability on rates of violence. In contrast with the previous findings, Rovers (1997) did not find any influence of neighbourhood deprivation, or an effect of a lack of social control in the neighbourhood on criminal behaviour of juveniles.

In the previous sections we have shown which characteristics at city and neighbourhood level might have an influence on youth delinquency. We conclude that there are ample reasons to consider variance in youth delinquency at different levels, i.e. city, neighbourhood and individual level. However, testing for the amount of variance at different levels simultaneously has not been systematically done as yet. In the remaining part of this chapter we will make a first step in analysing variance in youth delinquency at these three different levels simultaneously. To avoid the possibility that city and neighbourhood differences are due to methodological artefacts, we control in the analyses for composition and survey effects. In the following sections we explicate the way in which population composition and survey characteristics can explain differences in youth delinquency between cities and neighbourhoods.

2.2.2 Intercity and inter neighbourhood differences due to composition effects

An alternative demographic explanation for differences in the extent of youth delinquency between cities and between neighbourhoods could be that the population composition differs between cities and between neighbourhoods. Cities and neighbourhoods with higher amounts of youngsters, who are more likely to commit crimes, show a higher prevalence of youth delinquency. Demographic characteristics correlating with delinquency and which presumably

differ between cities and between neighbourhoods are ethnicity, educational level, and home situation. Previous research showed that adolescents from an ethnic minority background (Junger and Haen Marshall, 1997), adolescents with lower levels of schooling (Williams et al., 1999; Hansen, 2003), or living with only one-parent (Sampson and Laub, 1994; Anderson, 2002) are more likely to engage in delinquent behaviour. There is ample evidence that boys commit more crimes than girls (see for example Rhodes and Fischer, 1993; Steffensmeier and Allan, 1996; Piquero et al., 2005), and that delinquency rises sharply during adolescence, with a peak at about age 17 (Moffitt, 1993). Thus, with regard to our research questions, we test to what extent differences in population composition with regard to ethnicity, educational level, home situation, and age explain city and neighbourhood differences in youth delinquency. We expect that these composition effects explain city and neighbourhood differences to some extent, but that variance at the city level and neighbourhood level still remains to be explained.

2.2.3 Intercity differences due to different methods of data collection

Most research on youth delinquency uses self-report measures. Self-report measures are preferred instead of police statistics, because the latter tend to underreport actual delinquency. Another disadvantage of police statistics is that less serious crimes are not included. A disadvantage of self-reported delinquency, however, is that its validity depends to some extent on the way the questionnaire is administered. The level of privacy affects the measurement of sensitive behaviour such as delinquency (Turner et al., 1998). Naplava and Oberwittler (2002) showed large differences in reported delinquency between face-to-face interviews at the respondent's home, versus questionnaires filled in at school in class. Adolescents reported delinquency more often in school-based surveys than in home-based surveys. Naplava and Oberwittler explain these differences, first, by the fact that the response rate of home-based surveys is usually lower than the response of school-based surveys. This selection effect is less marked in school-based surveys, although it cannot be eliminated entirely. School-based surveys exclude school dropouts, except where efforts are made to follow them up outside school. Second, in home-based surveys people feel less anonymous than in class-based interviews. This could imply that people are more likely to give socially desirable answers. At home, in the presence of parents, it would be more appropriate to act more decently. In contrast, at school, in the presence of classmates, it might be 'cool' to overact. In our research, we will test for differences in data collection, and hypothesize that cities where data have been collected in classes at schools show a higher extent of youth

delinquency than cities where data have been collected by mail questionnaires, i.e. questionnaires sent to the respondent's home⁴.

Table 2.1: Characteristics of the data for the different cities

City	Year of data collection	N	Sample	Data collection	Measurement of delinquency
Almelo	2002	803	Randomly selected adolescents	Written mail-questionnaire sent to adolescent's home	- Which delinquent acts committed past 12 months; - 24 items.
Den Bosch	2002	1,382	Randomly selected adolescents	Written mail-questionnaire sent to adolescent's home	- Which delinquent acts committed past 12 months; - 12 items.
Helmond	2000/2001	1,322	Randomly selected adolescents	Written mail-questionnaire sent to adolescent's home	- Which delinquent acts committed past 12 months; - 24 items.
Leeuwarden	2001	692	Randomly selected adolescents	Written mail-questionnaire sent to adolescent's home	- Which delinquent acts committed past 12 months, and how often; - 24 items.
Nijmegen	1999	1,349	Randomly selected adolescents	Written mail-questionnaire sent to adolescent's home	- Which delinquent acts committed past 12 months; - 24 items.
Schiedam	2000/2001	668	Randomly selected adolescents	- 12 to 16 year olds partly written mail-questionnaire sent to adolescent's home, partly written questionnaire in class at school; - 17 year olds written mail-questionnaire sent to adolescent's home	- Which delinquent acts committed past 12 months; - 23 items.
Heerlen	2001	1,384	All secondary schools selected, students in year 2 and 4 questioned	Written questionnaire in class at school	- How often did you commit the following delinquent acts the last 12 months? - 12 items.
Maastricht	2001	1,906	All secondary schools selected, students in year 2 and 4 questioned	Written questionnaire in class at school	- How often did you commit the following delinquent acts the last 12 months? - 12 items.
Venlo	2001	1,154	All secondary schools selected, students in year 2 and 4 questioned	Written questionnaire in class at school	- How often did you commit the following delinquent acts the last 12 months? - 12 items.
Sittard-Geleen	2001	1,222	All secondary schools selected, students in year 2 and 4 questioned	Written questionnaire in class at school	- How often did you commit the following delinquent acts the last 12 months? - 12 items.
Rotterdam	Year 1: 1998/1999 Year 3: 2000-2002	5,604	All secondary schools selected, students in year 1 and 3 questioned	Written questionnaire in class at school	- Which delinquent acts committed past 12 months, and how often; - Year 1: 23 items; - Year 3: 15 items.

⁴ Differences between cities in the extent of youth delinquency could also be due to sampling effects. In the described city projects, not all cities use representative samples of the studied city. For example, the PYS samples only boys (Loeber et al., 1991; Browning and Loeber, 1999; Thornberry and Krohn, 2003), the RYDS uses a sample of high-risk adolescents (Thornberry et al., 1991; Browning et al., 1999; Thornberry and Krohn, 2003), and the DYS takes a sample from adolescents living in high-risk neighbourhoods (Huizinga et al., 1991; Browning and Huizinga, 1999; Thornberry and Krohn 2003). By sampling or an overrepresentation of adolescents at risk (for example on the basis of the characteristics mentioned in the previous paragraph), the overall extent of delinquency is likely to be higher in comparison with taking a representative sample of the city's youth, although it is possible to account for this by weighing the data to reflect the broader population. Another example of the influence of sampling is when schools are being sampled, and consequently students are being questioned. In this way, school dropouts, a group likely to be at risk, are not part of the research group. Our purpose was to control both for sample effects, and for effects of the way data were collected. As can be concluded from Table 2.1, on city level no variation exists between these characteristics. Cities which randomly sampled adolescents, used mail-questionnaires sent to the adolescent's home, whereas cities which selected schools to collect the data, interviewed the respondents in class. Hence we can not test both the effect of sampling and the effect of data collection.

2.3 Methods

2.3.1 Data

For the purpose of this research we compiled data from 11 cities in the Netherlands. These were all cities available and comparable for the purpose of this chapter: to estimate the amount of variance in youth delinquency at city level, neighbourhood level, and individual level. From 1998, these cities carried out at least one youth survey. The purpose of such surveys was to describe the circumstances and life-styles of adolescents. All of the surveys are based upon the Dutch Standard Youth Monitor (Bijmold et al., 1998), which optimizes the comparability of the surveys. In every city adolescents were questioned about their (risk) behaviour (such as drinking, drug use, and delinquency), their home situation and relations with their care takers, peer relations, and background characteristics (such as age, ethnicity, and gender). Data collection and sampling methods were not the same for all of the cities. Some cities put together a sample of all youth living in the particular city, other cities sampled schools at which they administered the questionnaires in class. By this method, the adolescents questioned were not only those living in the particular city but also those living in localities nearby. In Table 2.1 an overview is given of some relevant characteristics of the different datasets. For this research we selected adolescents from the different datasets, taking only those aged 12 to 17 who lived in one of the cities.

As stipulated in Table 2.1, all cities asked, for a list of delinquent acts, whether or not the adolescent had committed that act over the last 12 months. Some cities also asked how often these offences had been committed in the last year. However, due to the fact that not all cities asked about frequency, we cannot use this information in the present analysis. Six delinquent acts were covered in all 11 cities. Hence we will use these six acts to measure youth delinquency.

2.3.2 Measures

Youth delinquency is operationalized by six delinquent acts. These acts are: theft from shops, vandalism, graffiti, burglary, carrying a weapon, and threatening other persons for money. For each item respondents were asked whether they had committed this offence in the last twelve months. In Almelo, Helmond, Leeuwarden, Nijmegen, and Schiedam theft from shops was measured by two items, namely: ‘in the last twelve months did you steal something from a shop worth less than 10 guilders (approximately 5 Euro)’, and ‘in the last twelve months did you steal something from a shop worth more than 10 guilders (approximately 5 Euro)’. The same holds for vandalism. In these cases where vandalism has been measured based upon more than one item, adolescents were coded as committing this act when they admitted they had committed at

least one of the vandalism acts asked about. For our final analyses we have counted the number of delinquent acts committed. In Table 2.2, for each city the proportion of adolescents who committed a particular delinquent act is given. Generally, for each individual delinquent act it can be seen that most adolescents are not very likely to have committed it. Comparing the relative frequency per offence, a pattern can be distinguished between cities. In every city the same items are least committed: namely burglary and threatening for money. No doubt these are the least common offences because they are the most serious ones. Furthermore Table 2.2 shows that some variation in youth delinquency exists between different cities.

Table 2.2: Proportion who had committed each delinquent act, by city

City	Theft from shops	Vandalism	Graffiti	Burglary	Carrying a weapon	Threatening for money
Almelo	.03	.07	.02	.01	.03	.00
Den Bosch	.04	.03	.04	.01	.02	.00
Helmond	.02	.05	.03	.01	.02	.00
Leeuwarden	.08	.16	.07	.01	.04	.00
Nijmegen	.09	.14	.10	.02	.08	.01
Schiedam	.04	.09	.05	.01	.03	.01
Heerlen	.13	.17	.06	.03	.16	.04
Maastricht	.13	.13	.05	.01	.09	.02
Venlo	.08	.11	.07	.01	.10	.02
Sittard-Geleen	.12	.12	.05	.01	.10	.02
Rotterdam	.20	.12	.19	.04	.20	.03
Total	.13	.12	.10	.02	.13	.02

To test whether differences between cities and neighbourhoods exist due to composition effects, we take account of individual characteristics which previous research has shown to be significantly related to youth delinquency⁵. When such characteristics are disproportionately present in a city or neighbourhood, this could explain why these cities or neighbourhoods show higher levels of youth delinquency. The variables we control for are *ethnicity*, *educational level*, *home situation*, *gender* and *age*. Six categories, i.e. Dutch, Surinamese/Antillean, Turkish, Moroccan, mixed, and others represent *ethnicity*. This measure is based upon the country in which the adolescent's parents were born. When both parents were born in the same country, the adolescent is placed in that particular category. The 'mixed' category contains adolescents with one parent born in the Netherlands and the other abroad. Adolescents are placed in the 'others' category when their parents are born in different countries, neither being the Netherlands, or in

⁵ Composition might also play a role at the neighbourhood level. It may be that city differences in youth delinquency are due to composition effects at the neighbourhood level, which means that cities with more high-crime neighbourhoods show a higher level of youth delinquency. However, in this research we will focus only on individual composition effects.

the same country, but other than those listed above. Given the Dutch situation, ideally we would like to distinguish between Surinamese and Antilleans⁶, but because of the fact that not all cities made this distinction, it is not possible to do so. *Educational level* represents the level of education the adolescent was following at the time of the interview. Categories of *educational level* are: primary school, lower secondary, higher secondary, other, and not at school anymore. By *home situation* we mean the people with whom the adolescent lives at home. Categories are: with both parents, only with one parent, with one parent and new partner of the parent, and other home situation. When adolescents do not live with both parents, we do not know why. *Age* varies from 12 to 17 years. Some cities asked not age but birth year.

With regard to methodological effects, we included a dummy variable informing us where and how the data had been collected. Cities which randomly sampled adolescents and collected the data using postal questionnaires are compared with cities that selected schools and collected the data in class. We inserted a dummy variable to distinguish the influence of the number of items asked to measure theft and vandalism. As shown in Table 2.1, some cities used more than one item to measure these delinquent acts.

2.3.3 Analysis

In order to answer our research questions, we applied a multilevel design. In a multilevel design, units are nested within higher level units, i.e. for this research individuals are nested within neighbourhoods, which are nested within cities. Usually individuals within the same higher-level unit resemble each other more than individuals from different higher-level units. Using multilevel analysis takes account of this clustering of similar individuals within the same units (Snijders and Bosker, 1999). By performing multilevel analyses, we test whether differences in the extent of youth delinquency exist not only between individuals, but also between neighbourhoods and cities. We test this by first estimating a model with only differences between individuals. Subsequently, a two level model is estimated in which individual and neighbourhood differences in youth delinquency are present. If the analyses show a better fit for this model in comparison with the model in which only individuals differ, then there are also significant differences between neighbourhoods. The third step is to estimate a three level model in which differences are allowed between individuals, neighbourhoods, and cities, i.e. a three level random intercept model. Again, a significantly improved fit of this model would indicate variance on all three different levels. Subsequently when significant variance at the distinguished levels is shown, we continue by controlling for composition effects to check whether differences between

⁶ Surinamese and Antilleans are two separate ethnic groups with their own migration history in the Netherlands.

neighbourhoods and between cities are due to differences in population composition. In the final step, we insert methodological characteristics to examine whether city differences can be explained by differences in data collection. Because of the highly skewed distribution of the delinquency measure, we have used the square root of the raw delinquency measure as the dependent variable in these analyses.

2.4 Results

In Table 2.3 we show the results of the deviance tests for fitting the different models. These results show that extending the single level null model with variance at neighbourhood level leads to significant decrease in the likelihood statistic. Further extending the model with variance at the city level leads to a further significant decrease of the likelihood ratio statistic. These deviance values are both highly significant, indicating that there are significant differences between neighbourhoods and between cities concerning youth delinquency. Extending the three level model with individual characteristics to control for composition effects improves the model further. The deviance statistic decreases by 2210.9, which is highly significant with 18 degrees of freedom. In our final model we include two methodological characteristics, which improves the goodness of fit only slightly, but this increase is not significant ($p=0.08$) (see Table 2.3).

Table 2.3: Model of fit measures and variance in youth delinquency at individual, neighbourhood and city level

Model	Deviance	Δ Deviance	Df	P-value	Individual variance	Neighbourhood variance	City variance
0 Single level null model	30688.5	-	-	-	0.36	-	-
1 Two level random intercept model	29758.2	930.3	1	< 0.01	0.33	0.03	-
2 Three level random intercept model	29485.2	273.0	1	< 0.01	0.33	< 0.01	0.02
3 + individual characteristics	27274.3	2210.9	18	< 0.01	0.31	< 0.01	0.02
4 + methodological characteristics	27269.4	4.9	2	0.08	0.31	< 0.01	0.01

Table 2.4: Different multilevel models; dependent variable youth delinquency is represented by the square root of the number of committed delinquent acts ($N_{\text{city}}=11$; $N_{\text{neighbourhood}}=185$; $N_{\text{individual}}=17,018$)

	Model 2:	Model 3:	Model 4:
Intercept	0.28**	0.27**	0.21**
<i>Individual characteristics (composition effects)</i>			
Ethnicity (ref. Dutch)			
Surinamese/Antillean		0.02	0.02
Turkish		-0.01	-0.01
Moroccan		-0.10**	-0.10**
Mixed		0.08**	0.08**
Other groups		-0.05**	-0.05**
Education (ref. higher secondary)			
Primary		-0.04	-0.04
Lower secondary		0.08**	0.08**
Other		0.09**	0.09**
Not at school		0.14**	0.14**
Home situation (ref. Both parents)			
One parent		0.11**	0.11**
One parent + new partner		0.13**	0.13**
Other home situation		0.13**	0.13**
Female		-0.22**	-0.22**
Age (ref. Age 12)			
Age 13		0.02	0.02
Age 14		0.05**	0.05**
Age 15		0.09**	0.09**
Age 16		0.10**	0.10**
Age 17		0.12**	0.12**
<i>City characteristics (methodological effects)</i>			
Data collected (1: in class at school)			0.13
More than 1 item for theft and vandalism			-0.03

†p < .10; *p < .05; **p < .01

To estimate the amount of variance at different levels, the degree to which adolescents in the same neighbourhoods, and/or the same cities resemble each other as compared to adolescents in different neighbourhoods and/or cities is illustrated by the intra-class correlation, which is the between-neighbourhood, and the between-city variance expressed as the proportion of the total variance (Goldstein, 1995)⁷. In the second column of Table 2.4, the variance at each distinguished level is shown. These numbers show that most of the variance in youth delinquency is at the individual level, i.e. 0.33, which is 95.1 percent of the total variance. Of the remaining 4.9 percent of the variance, most can be attributed to the city level (0.02, that is 4.6 percent of the

⁷ For this three-level model, the intra-city correlation is the variance at city-level as a proportion of the total variance. In formula: $\rho = \sigma^2_{\text{city}} / (\sigma^2_{\text{city}} + \sigma^2_{\text{neighbourhood}} + \sigma^2_{\text{individual}})$. The intra-neighbourhood correlation is the variance at neighbourhood-level as a proportion of the total variance. In formula: $\rho = \sigma^2_{\text{neighbourhood}} / (\sigma^2_{\text{city}} + \sigma^2_{\text{neighbourhood}} + \sigma^2_{\text{individual}})$.

total variance). The variance at neighbourhood level is only 0.3 percent of the total variance. Importantly, these results thus suggest that the city level is a more important social context for the explanation of youth delinquency than the neighbourhood. The improvement in the goodness of fit of the two-level random intercept model in Table 2.3, where variance in youth delinquency is allowed only between neighbourhoods and between individuals, has to be attributed to ignoring variance at the city level. In other words, from Table 2.3 it seems that neighbourhoods differ in the extent of youth delinquency, but actually most of these differences are captured by differences between cities. Ignoring the city level can thus distort the real picture.

However, as we suggested in the previous sections, differences between cities and between neighbourhoods can exist due to differences in composition. Therefore, we expanded the random intercept model, i.e. the null model in Table 2.4, with some individual characteristics to control for these possible composition effects. The results of the analysis of this expanded model are in the third column of Table 2.4. From Table 2.3 we know that expanding the three level random intercept model with individual characteristics significantly increases the goodness of fit of the model. In Table 2.4 we see that model 1, i.e. the random intercept model with individual characteristics, only moderately changes the variance components at the different levels. The individual level variance decrease slightly by inserting the individual characteristics from 0.33 to 0.31. The city and neighbourhood level variance, however, remains equal in this model. Hence, taking composition effects into account explains to some extent city differences in youth delinquency, but not neighbourhood differences.

The results of model 1 are to a large extent in line with previous findings (see Table 2.4). In comparison with youngsters following a higher secondary education, adolescents at lower secondary school, at other types of educational institution, and those no longer at school are shown to commit more delinquent acts. With regard to one's home situation, it appears advantageous to reside with both parents. Adolescents living with only one parent, with one parent and the new partner of the parent, or in a different home situation engage in more delinquent behaviour. As expected, boys commit more delinquent acts than girls, and older adolescents are more delinquent than younger ones. However, with regard to ethnicity, unexpected findings appear. We expected, in line with previous findings, that adolescents with a non-Dutch background would show a higher level of youth delinquency than Dutch-born adolescents. Our findings suggest, however, that only adolescents with a mixed background (i.e. one Dutch parent, one non-Dutch parent) show more delinquent behaviour than Dutch adolescents. According to our results, adolescents with a Moroccan background and adolescents in the category 'others' show less delinquent acts than Dutch youngsters. Especially for

Moroccan youth this seems rather surprising. Recent research using official police statistics in the Netherlands showed that youth from a Moroccan background were more likely to become registered as a crime suspect than Dutch adolescents, even after controlling for relevant background characteristics, like for example age, gender, and school dropout (Blom et al., 2005). An explanation for the difference between self-report measures of youth delinquency and official police statistics for youth with a Moroccan background might be that Moroccan adolescents are more reluctant to admit delinquent activities than Dutch youth (Junger, 1989; Junger and Haen Marshall, 1997). However, this means that we have to be careful with statements about different ethnic groups.

In our final model we introduced survey characteristics in the analysis. This expansion of the model did not show a significant improvement of the goodness of fit (see Table 2.3). Both measures appeared to be non-significant. Hence the level of youth delinquency of an individual is not affected by survey characteristics, which do, however, explain some of the variance at the city level.

2.5 Conclusion and discussion

The purpose of this chapter was to examine whether the city level may contribute to the explanation of youth delinquency, next to the influence of the neighbourhood and individual level. Previous research on city differences in crime rates neglected the influence of individual and neighbourhood determinants (Blau and Blau, 1982; Miethe et al., 1991; Shihadeh and Steffensmeier, 1994; Shihadeh and Flynn, 1996; Krivo and Peterson, 2000; Parker 2001; Velez et al. 2003), whereas studies with the focus on the neighbourhood and individual level neglected higher level explanations, like city explanations, of youth delinquency (Sampson and Groves, 1989; Peeples and Loeber, 1994; Sampson et al., 1997; Wittebrood, 2000; Beyers et al., 2001).

In our description of previous research on city differences in crime rates, we showed that there are ample (theoretical) reasons to consider the city as an influential context of individual level youth delinquency. We performed multilevel analyses in order to test whether variance in youth delinquency exists at city level, above and beyond variance at neighbourhood and individual level. The results showed considerable variance at the city level, along with variance at neighbourhood and individual level. Controlling for composition effects did not change the observed variance at the city level. Interestingly, our results suggest that the city is a more important context for the explanation of youth delinquency than the neighbourhood level, at least in the Netherlands. We found that neighbourhoods differ only marginally in the extent of

youth delinquency. For the Dutch situation this is not so surprising considering the research of Rovers (1997), and of Schneiders et al. (2003), who also found only small differences between neighbourhoods. In Germany, Oberwittler (2004) also found merely small differences between neighbourhoods. However, in comparison with American research our results are more surprising, because in the US neighbourhoods seem to differ more. It might be the case that in the Netherlands, and maybe also in other European countries, contrasts between neighbourhoods are less striking than in the US with respect to youth delinquency, as also in other respects. Another explanation relates to our measure of youth delinquency. Due to the use of secondary data, we have information available only on six delinquent acts. Of these acts, we only know whether adolescents have committed these acts in the last twelve months. Maybe neighbourhoods in our research will differ more when delinquency is measured more extensively.

Our findings showed further that differences in youth delinquency between cities can not be explained by different modes of data collection, because the effect of this variable was not significant. Based upon previous research (Naplava and Oberwittler, 2002), it was expected that home questionnaires should induce an under representation of delinquent behaviour. A possible reason why our results do not support this expectation is that in Naplava and Oberwittler's study face-to-face interviews were conducted at home, and written questionnaires in class. This might indicate that it is not the place where the data are collected that matters, but the way in which the data are collected. Apparently, written questionnaires increase the feeling of anonymity among respondents. More research is needed to further disentangle the relationship between the place of data collection and under (or over) representation of sensitive behaviour, like delinquency.

Additionally, our results indicate that by ignoring the city level, variance at neighbourhood level is overestimated. This might also account for research using data from different neighbourhoods across different municipalities, focussing on the effect of neighbourhood characteristics neglecting higher level determinants, like the studies of Sampson and Groves (1989) and Wittebrood (2000). Sampson and Groves found that the more ethnically heterogeneous neighbourhoods are, the higher the extent of violent offending. Wittebrood found that structural neighbourhood characteristics, i.e. low economic status, high ethnic heterogeneity, high residential mobility, affect violent victimization. In research studying city differences in crime rates, the same measures are used but then measured at the city level to explain city differences in crime rates. There is evidence that these characteristics explain city differences in crime rates (Blau and Blau, 1982; Logan and Messner, 1987; Land et al., 1990; Miethe et al., 1991). This raises the question whether the results of Sampson and Groves and of Wittebrood on the explanatory power of neighbourhood characteristics still hold when the city level (or

municipality level) is included as a unit of analysis. Including this higher level makes it possible to simultaneously test the influence of different determinants derived from social disorganization or social stratification theory, located at the city level as well as at the neighbourhood level, to disentangle respectively whether these determinants at city level and at neighbourhood level have separate effects on crime, over and above individual level effects.

Moreover, we propose to link these different levels of analysis both theoretically and empirically. Strategies and procedures included in multi-level analyses provide the tools to disentangle these effects at different levels. For example, from social stratification theory the hypothesis can be derived that the higher the level of absolute and/or relative deprivation in a city, the higher the extent of delinquency. The same hypothesis can be related to the neighbourhood level. In a similar vein, it is argued that at the individual level, poverty relates to delinquency: the lower one's income, the more delinquent behaviour one shows (e.g., Farrington, 1995). To disentangle the effect of poverty on youth delinquency at the different levels, contextual and individual measures of poverty at city, neighbourhood, and individual levels should be simultaneously examined in a multilevel design. In this way, it can be determined to what extent characteristics at the different levels have separate and independent effects on youth delinquency.

To conclude, we think that our results illustrate that the city can play an important role in the explanation of crime and delinquency. How strong this role is above and beyond the influence of the neighbourhood and individual characteristics should be tested in future research. Especially as in the Netherlands the neighbourhood is an important context upon which policies are developed to reduce crime levels. If our results are replicated in future investigations, focusing on a broader age group and studying not only self-reported delinquent behaviour, then it might be useful for policymakers to take into account the city level, next to the neighbourhood level. Furthermore, the conclusions in this chapter form a worthwhile first step towards an integration of different contextual levels for the explanation of individual levels of youth delinquency. Future research must document in more detail the relative importance of city, neighbourhood, and individual level explanations of youth delinquency.

Chapter 3

City and/or neighbourhood determinants? Contextual effects on youth delinquency

Abstract

Prior research has not yet integrated determinants of youth delinquency at city, neighbourhood, and individual level simultaneously. In this study we derived hypotheses from social disorganisation theory at city as well as neighbourhood level. We use individual level data from 11 cities in the Netherlands. Our results show that concentrated contextual disadvantage at both city and neighbourhood level affect youth delinquency. More detailed analyses demonstrate that of the indicators used to construct concentrated contextual disadvantage, only the percentage one-parent families has a significant effect on youth delinquency. Implications for the study on the influence of ecological contexts on youth delinquency are discussed.

3.1 Introduction

Crime is most prevalent in urban areas. Consequently, researchers show great interest in trying to explain differences in crime rates between cities (e.g., Blau and Blau, 1982; Sampson, 1987; Balkwell, 1990; Land et al., 1990; Miethe et al., 1991; Shihadeh and Steffensmeier, 1994; Shihadeh and Flynn, 1996; Shihadeh and Ousey, 1996; Krivo and Peterson, 2000; Parker, 2001; Velez et al., 2003). However, these researchers focus solely on determinants at the city level in explaining differences in crime rates between cities, thus neglecting possible influences at lower levels like the neighbourhood and individual level. As a consequence, many studies assume, but do not test that these city characteristics influence individual levels of crime.

Another implication of the prevalence of crime in city contexts is that researchers pay attention to neighbourhoods within cities. Researchers studying the influence of neighbourhood characteristics on crime mostly consider both neighbourhood and individual level characteristics (e.g. Sampson and Groves, 1989; Peebles and Loeber, 1994; Sampson et al., 1997; Wittebrood, 2000; Beyers et al., 2001). Higher level determinants, like city characteristics, however, are ignored by these researchers.

Recently, it has been shown that by ignoring the city level in the study of youth delinquency, differences at the neighbourhood level are overestimated (Weijters, Scheepers and Gerris, 2007). When the city-level was excluded from their analyses, neighbourhoods seemed to differ in the extent of youth delinquency. When, however, the city-level was included, it appeared that the differences between neighbourhoods should actually be attributed to the city-level. The

results of Weijters et al. (2007) thus have shown that only neighbourhoods from different cities differ. Neighbourhoods within the same city show equal amounts of self-reported youth delinquency.

Integrating that in prior research the city-level has not been included yet in the study of youth delinquency at the individual level, with the findings that cities differ in the extent of individual level's of youth delinquency (Weijters et al., 2007), leads to the question which city characteristics affect youth delinquency at the individual level, above and beyond the influence of neighbourhood and individual characteristics. Including different ecological contexts in the analyses makes it possible to simultaneously test the influence of determinants located at the city level, as well as at the neighbourhood level. Moreover, in this manner an indication can be given of which phenomena at which ecological level are decisive in the explanation of youth delinquency.

In this chapter we will test whether and which city and neighbourhood characteristics have additional effects on youth delinquency, controlling for individual level determinants. Furthermore, by testing the influence of different indicators at each level, an indication is given as to which characteristics are decisive in the explanation of youth delinquency at city and at neighbourhood level. For this purpose we will derive similar hypotheses on both city and neighbourhood level to disentangle the effects of these different ecological contexts on youth delinquency. Similar phenomena measured at both city and neighbourhood level will be included in the analyses simultaneously to ascertain which phenomena measured at which level affect youth delinquency.

Same phenomena can affect delinquent behaviour at different levels. For example, from social stratification theory the hypothesis is derived that the higher the level of absolute or relative deprivation in a city, the higher the extent of delinquency. This hypothesis has received support in previous research (e.g. Blau and Blau, 1982; Logan and Messner, 1987; Balkwell, 1990). The same hypothesis can be related to the neighbourhood level, which also has received support (e.g., Beyers et al., 2001). In a similar vein, it is argued that at the individual level, poverty relates to delinquency: the lower one's income, the more delinquent behaviour one shows (e.g., Farrington, 1995). To disentangle the effect of poverty on youth delinquency at different levels, measures of poverty at city, neighbourhood, and individual levels should be simultaneously examined in a multilevel design. In this way, it can be determined to what extent characteristics at different contextual levels have separate, independent effects on youth delinquency.

As no research yet (to our knowledge) has tested whether city characteristics explain youth delinquency at the individual level, we improve on past research by testing the effects of

city characteristics on youth delinquency, on top of the influence of neighbourhood and individual characteristics. To accomplish our research aim, data from different Dutch cities are compiled, thus making intercity comparisons possible. These individual level data have been enriched with contextual level data.

3.2 Theoretical background

One of the main theoretical approaches regarding community differences in crime rates is the social control perspective (Ousey, 2000). The social control perspective implies that a lack of social integration in communities decreases informal social control, which in turn enhances crime rates in these communities. This perspective has been derived from social disorganization theory, a theory developed by Shaw and McKay ([1942]1969). Social disorganization theory emphasises that ‘society is organized, and thus functions, when people are presumed to have developed common agreement about fundamental values and norms, as reflected in a high degree of behavioural regularity’ (Clinard and Meier, 1992: 89).

In their original study, Shaw and McKay tried to explain why crime rates differed between neighbourhoods. They found particular neighbourhood characteristics and crime rates to be related. Neighbourhoods characterized by high residential mobility, by ethnic heterogeneity, and by a low economic status showed higher crime rates. Shaw and McKay explained this finding by proposing that neighbourhoods with these characteristics are characterized by community disruption, which implies a low degree of social cohesion, which can be identified by low social control and weak social networks. As an extension to the social disorganization approach, Sampson (1986) asserted that family disintegration at the contextual level is an important indicator affecting social control. Adolescents in areas characterized by a high number of disrupted families have less informal social control on their activities, and are less likely to be discouraged to show delinquent behaviour. In the past decades, the social disorganization perspective has also been applied to the explanation of crime rates at the city level.

3.2.1 Previous research on social disorganisation theory at city level

Almost all researchers studying the effects of social disorganization theory at the city level focused solely on explaining crime rates between cities, thus ignoring possible influences at the neighbourhood and individual level. Balkwell (1990) showed that poverty, measured at city level, positively affects city crime rates. The higher the poverty level in a city, the higher the crime rate. Miethe et al. (1991) found that the more ethnically heterogeneous a city is, the higher the city’s

level of crime. Other authors used segregation as an indicator of ethnic heterogeneity. Shihadeh and Flynn (1996) showed that the level of black segregation in a city positively affects the city rate of serious black violence. Parker (2001) showed that city level segregation affects city level homicide rates both for blacks and for whites. In their contribution on differences in homicide offending between blacks and whites in US cities, Velez et al. (2003) found that in cities where residential segregation is higher, blacks have much higher levels of homicide offending than whites. In different studies evidence is provided that a higher divorce rate in a city relates to higher crime rates (Sampson, 1986; Balkwell, 1990; Parker, 2001). Shihadeh and Steffensmeier (1994) have shown that family disruption at the city level is positively related to black violence rates. Neglecting family disruption at the individual level in this research, however, runs the risk of ecological fallacy. From these macro-level findings the conclusion can not be drawn that adolescents with divorced parents show a higher level of delinquent behaviour than adolescent living with both parents.

3.2.2 Previous research on social disorganisation theory at neighbourhood level

Considering the fact that most structural characteristics related to social disorganisation theory are rather strongly connected, some researchers used an index to measure social disadvantage to test social disorganisation theory at the neighbourhood level. Peeples and Loeber (1994) found in their research on the seriousness and frequency of adolescent boys' delinquency that adolescents living in underclass neighbourhoods showed more delinquent behaviour than adolescents who did not live in an underclass neighbourhood. Beyers et al. (2001) showed that neighbourhood disadvantage, constructed by percent families with children headed by single parents, median household income, percent families below the poverty level, percent households on public assistance, percent unemployed, and percent African Americans, reinforces boys' violent delinquency. Further support for the results of Peeples and Loeber (1994) and Beyers et al. (2001) was provided by the study of Schneiders et al. (2003), who investigated to what extent neighbourhood disadvantage contributes to children's externalising problem behaviour.

Other authors tested the effect of different elements derived from social disorganisation theory separately. Sampson and Groves (1989) found that the more ethnically heterogeneous a neighbourhood, the higher the offence rate of personal violence. Furthermore, they have shown that the rates of property theft and vandalism are higher in areas characterized by a higher level of family disruption. Wittebrood (2000) showed that individuals living in neighbourhoods characterised by low economic status and high ethnic heterogeneity, are more likely to become victims of violent crime.

Pratt (2001) conducted a meta-analysis on the effects of macro-level predictors of crime. For his analysis Pratt used macro-level studies using different units of analysis, among which neighbourhoods, cities and countries. His results indicate that macro-level indicators relating to concentrated disadvantage are among the most strong and stable predictors of crime across studies. Concentrated disadvantage is related to poverty, ethnic heterogeneity, and family disruption. These are indicators related to social disorganization theory.

In sum, previous research has demonstrated that (low) economic status, (high) ethnic heterogeneity, and (high levels of) family disruption at both city and neighbourhood level are related to crime. These are the three phenomena which are among the most strong and stable predictors of crime at city and neighbourhood level (Pratt, 2001). In this study we will simultaneously test the relationship of these indicators with youth delinquency measured at both ecological levels. In this way, we are able to demonstrate whether city-characteristics affect individual level's of youth delinquency, above and beyond neighbourhood characteristics, controlling for individual level characteristics. Moreover, our research will give more insight into which characteristics at city-level and which characteristics at neighbourhood-level are decisive in the explanation of youth delinquency at the individual level. We hypothesise that the lower the economic status, the more ethnically heterogeneous, and the more one-parent families in an ecological context, the more adolescents in these contexts will show delinquent behaviour.

3.2.3 Methodological limitations

We limited the deduction of hypotheses to three contextual characteristics. The main reason for this limitation is the limited number of cities ($n = 11$) with data available for our research purpose. Furthermore, using only three determinants at both contextual levels makes it easier to use the same constructs for measuring the phenomena under study. To account for the limited number of city-level and neighbourhood-level predictors we deducted hypotheses related to the most strong and stable macro-level predictors of crime (see Pratt 2001)⁸.

3.2.4 Composition effects

A demographic explanation for differences in the extent of youth delinquency between cities and between neighbourhoods could be that the population composition differs between cities and between neighbourhoods. Cities and neighbourhoods inhabited by adolescents, who are more likely to commit crimes, will show higher prevalence rates of youth delinquency. There is ample

⁸ We do not claim, however, that these characteristics are the only city-level and neighbourhood-level predictors of youth delinquency.

evidence that boys commit more crimes than girls (see for example Rhodes and Fischer, 1993; Steffensmeier and Allan, 1996; Piquero et al., 2005), and that delinquency rises sharply during adolescence, with a peak at about age 17 (Moffitt, 1993). Previous research showed that adolescents with an ethnic minority background (Junger and Haen Marshall, 1997), adolescents with lower levels of schooling (Williams et al., 1999; Hansen, 2003), or living with only one parent (Sampson and Laub, 1994; Anderson, 2002) are more likely to perform delinquent behaviour. In our analyses we will control for these characteristics to test whether compositional differences between cities and neighbourhoods may add to the explanation of differences in youth delinquency.

3.3 Methods

3.3.1 Data

For the purpose of this research we compiled data from 11 cities in the Netherlands. Those were all cities with data for secondary analysis available and comparable. From 1998, these cities performed at least once a youth survey. The purpose of these surveys was to describe living situations and life-styles of adolescents. All surveys are based on the Dutch Standard Youth Monitor (Bijmold et al., 1998), which optimises the comparability of the surveys. In every city, adolescents were questioned about their (risk) behaviour (like drinking, drug use, and delinquency), their home situation and relations with their caretakers, peers, and background characteristics (like age, ethnicity, and gender). Data collection, and sampling methods were not the same for all of the cities. Some cities composed a sample of all youth living in the particular city, other cities sampled schools at which they administered the questionnaires class-based. In this way, not only adolescents living in the particular city were questioned, but also adolescents living in regions nearby that city. For this research we made a selection of adolescents in the different datasets. We selected 12 to 17 year old adolescents who lived in one of the cities. Neighbourhoods were identified by zip code.

3.3.2 Measures

3.3.2.1 Measures at the individual level

All cities asked with a list of delinquent acts, whether or not the adolescent had committed that act over the last 12 months⁹. Overall, six delinquent acts were asked in all 11 cities. Hence we will

⁹ Some cities also asked for the frequency of the committed offences in the last year. However, due to the fact that not all cities asked for this frequency, we cannot use this information in this research.

use these six acts to measure *youth delinquency*. These acts are: theft from shops, vandalism, graffiti, burglary, carrying a weapon, and threatening other persons for money. For each item, respondents were asked whether they had committed this offence in the last twelve months. In Almelo, Helmond, Leeuwarden, Nijmegen, and Schiedam theft from shops has been measured with two items, namely: ‘in the last twelve months did you steal something from a shop worth less than 10 guilders (approximately 5 Euro)’, and ‘in the last twelve months did you steal something from a shop worth more than 10 guilders (approximately 5 Euro)’. The same holds for vandalism. In the cities mentioned, this delinquent act has been measured with seven items. In these cases, i.e. a delinquent act has been measured with more than one item, adolescents were coded as committing this act, when they admitted they had committed at least one of the delinquent acts asked. For our analyses we have counted the number of delinquent acts committed.

To test whether differences between cities and neighbourhoods may be due to composition effects, we take into account individual characteristics of which previous research has shown that they relate significantly with youth delinquency. When such characteristics are disproportionately present in a city or neighbourhood, this could explain why these cities or neighbourhoods show higher levels of youth delinquency. The variables we control for are *age*, *gender*, *ethnicity*, *educational level*, and *home situation*. *Age* has been measured in years, and varies from 12 to 17 year. Six categories, i.e. Dutch, Surinamese/Antillean, Turkish, Moroccan, mixed, and others represent *ethnicity*. This measure is based upon the country in which the adolescent’s parents are born. When both parents are born in the same country, the adolescent is placed in that particular category. The category ‘mixed’ contains those adolescents of whom one parent is born in the Netherlands, and the other abroad. Adolescents are placed in the category ‘others’, when their parents are born in different countries, none being the Netherlands, or in the same country, but other than the above categories. Given the Dutch situation, ideally we would like to distinguish between Surinamese and Antilleans, because Surinamese and Antilleans are two separate ethnic groups with their own migration history in the Netherlands. But, because of the fact that not all cities made this distinction, both groups are taken together. *Educational level* represents the level of education the adolescent follows at the time of the interview. Categories of *educational level* are: primary school, lower secondary, higher secondary, other, and not at school anymore. By *home situation* we take into account with whom the adolescent lives at home. Categories are: with both parents, only with one parent, with one parent and new partner of the parent, and other home situation. When adolescents do not live with both parents, we do not know what the reason is why the parents do not live together anymore.

3.3.2.2 Measures at city- and neighbourhood level

As we have proposed the same hypotheses at city and neighbourhood level, we also wanted to use similar measurements at both levels. For *economic status* we used mean income per receiver per ecological context. *Ethnic heterogeneity* is constructed using the percentage of non-western ethnic minorities living in the ecological context. *Family disruption* has been measured by aggregating the percentage of adolescents living with only one parent to the city and neighbourhood level. It was not possible to use any other information for constructing the city and neighbourhood measures, because no other relevant information was available at both levels. Since we only wanted to use information in the same way available at both levels, we were restricted to the city and neighbourhood measures described above.

Table 3.1: Correlations between social disorganisation characteristics at city and neighbourhood level. Above the diagonal correlations at the city level are shown, below the diagonal the correlations at the neighbourhood level are shown.

	One-parent families	Mean income	Percentage non-western families
One-parent families	1.00	0.04	0.84
Mean income	0.51	1.00	-0.11
Percentage non-western families	0.55	0.47	1.00

The three phenomena, mean income per receiver, percentage non-western ethnic minorities and percentage one-parent families, correlate rather strongly at the neighbourhood level (see Table 3.1). At the city level, however, mean income correlates hardly with percentage of non-western ethnic minorities, and percentage of one-parent families. As we want to examine the influence of the different determinants at different levels simultaneously, we constructed a *disadvantage index* indicating the level of disadvantage at both the city level and the neighbourhood level to avoid multicollinearity at (especially) the neighbourhood level. The *disadvantage index* has been constructed by standardizing the three measurements, and then taking the mean score.

3.3.3 Analysis

In order to answer our research questions, we applied a multilevel design. In a multilevel design, units are nested within higher level units, i.e. individuals are nested within neighbourhoods, which are nested within cities. The assumption that individuals within the same higher-level unit resemble each other more than individuals from different higher-level units is captured by using multilevel analysis (Snijders and Bosker, 1999). By performing multilevel analyses, we test whether differences in the extent of youth delinquency exist not only between individuals, but also between neighbourhoods and between cities. Furthermore we use multilevel analyses to test

whether differences between individuals in youth delinquency can be explained by city level and neighbourhood level determinants. Step by step, the final model has been built up. For each step we tested whether the expansion of the model resulted in an improvement of the fit of the model. Because of the highly skewed distribution of the delinquency measure and to approach a normal distribution, we have used the square root of the delinquency measure as the dependent variable in these analyses.

3.4 Results

Table 3.2 shows the different models we estimated in order to answer our research questions. From this table we learn that differences in youth delinquency exist between cities, neighbourhoods and individuals. Model 1 shows that extending the single level null model with variance at neighbourhood level leads to significant decrease in the likelihood statistic. Further extending the model with variance at the city level leads to a further significant decrease of the likelihood ratio statistic. These deviance values are both highly significant, indicating that there are significant differences between neighbourhoods and between cities concerning youth delinquency. The degree to which adolescents in the same neighbourhoods and/or the same cities resemble each other as compared to adolescents in different neighbourhoods and/or cities, is illustrated by the intra-class correlation, which is the between-neighbourhood, and the between-city variance expressed as the proportion of the total variance (Goldstein, 1995)¹⁰. Model 2 in Table 3.2 shows that most of the variance in youth delinquency is at the individual level, i.e. 0.33, which is 95.1 percent of the total variance. Of the remaining 4.9 percent of the variance, most can be attributed to the city level (0.02, that is 4.6 percent of the total variance). The variance at neighbourhood level is only 0.00, which is 0.3 percent of the total variance. Importantly, these results thus indicate that the city level is a more important social context for the explanation of youth delinquency than the neighbourhood.

In Model 3, we tested to what extent city and neighbourhood variance in youth delinquency can be explained by accounting for composition effects. The results show that variance at the city level decreases only marginally, whereas variance at the neighbourhood level is not changed by adding demographic characteristics to the analysis. These results thus indicate that differences in the extent of youth delinquency between cities and between neighbourhoods

¹⁰ For this three-level model, the intra-city correlation is the variance at city-level as a proportion of the total variance. In formula: $\rho = \sigma^2_{\text{city}} / (\sigma^2_{\text{city}} + \sigma^2_{\text{neighbourhood}} + \sigma^2_{\text{individual}})$. The intra-neighbourhood correlation is the variance at neighbourhood-level as a proportion of the total variance. In formula: $\rho = \sigma^2_{\text{neighbourhood}} / (\sigma^2_{\text{city}} + \sigma^2_{\text{neighbourhood}} + \sigma^2_{\text{individual}})$.

can hardly be attributed to differences in population composition. Further extending the model with the disadvantage index at neighbourhood (Model 4) and city level (Model 5), improves the fit of the model even more. Adding city determinants to the model almost halves the variance at the city level (it decreases from 0.02 to 0.01).

Table 3.2: Model of fit measures and variance in youth delinquency at individual, neighbourhood and city level

Model	Deviance	Δ Deviance	Df	P-value	Individual variance	Neighbourhood variance	City variance
0 Single level null model	30397.2	-	-	-	0.36	-	-
1 Two level null model	29495.1	902.1	1	< 0.01	0.33	0.03	-
2 Three level null model	29215.4	279.7	1	< 0.01	0.33	< 0.01	0.02
3 + demographic characteristics	27054.2	2161.2	15	< 0.01	0.32	< 0.01	0.02
4 + neighbourhood characteristics	27049.4	4.8	1	0.03	0.32	< 0.01	0.02
5 + city characteristics	27044.2	5.2	1	0.02	0.32	< 0.01	0.01

The results for the models including city and neighbourhood disadvantage are shown in Table 3.3. These results reveal that both the city disadvantage index and the neighbourhood disadvantage index have a positive, significant effect on youth delinquency. Hence the more disadvantaged a city, the more likely adolescents living in that city will show delinquent behaviour. The same holds for the neighbourhood level. The more disadvantaged the neighbourhood in which adolescents live, the more likely they will be to show delinquent behaviour. To find out which of the components of the disadvantage index affects youth delinquency, we added the different components separately to our model. Still we tested the effect of the different disadvantage components simultaneously at city and neighbourhood level. Our findings in Table 3.3 reveal that only the percentage of single parent families has a significant effect on youth delinquency, both at the city and neighbourhood level. The higher the percentage of single parent families in the city or the neighbourhood, the more adolescents in that particular ecological context show delinquent behaviour. Both the mean income level and the percentage of ethnic minorities in the city or the neighbourhood did not affect delinquent behaviour of adolescents.

Our results in Table 3.3 thus indicate that adolescents in ecological contexts characterized by a high percentage of single parent families show more delinquent behaviour than adolescents living in ecological contexts with less single parent families. This finding might imply that

contexts where comparatively many one-parent families live, are less effective in controlling the behaviour of the adolescents living in these ecological surroundings, which generally is in line with social disorganization theory.

Table 3.3: Multilevel regression analysis; dependent variable is delinquent behaviour ($n_{\text{city}} = 11$; $n_{\text{neighbourhood}} = 200$; $n_{\text{individual}} = 15,857$)

	Model 3	Model 5	Model 5a	Model 5b	Model 5c
Intercept	0.31**	0.34**	0.31**	0.34**	0.37**
<i>Composition effects</i>					
Age	0.04**	0.04**	0.04**	0.04**	0.04**
Age squared	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Female	-0.22**	-0.22**	-0.22**	-0.22**	-0.22**
Ethnicity (ref. Dutch)					
Surinamese/Antillean	0.02	0.01	0.01	0.01	0.02
Turkish	-0.01	-0.02	-0.03	-0.03	-0.02
Moroccan	-0.11**	-0.12**	-0.11**	-0.11**	-0.11**
Mixed	0.08**	0.08**	0.08**	0.08**	0.08**
Other groups	-0.06**	-0.06**	-0.05**	-0.05**	-0.06**
Education (ref. primary)					
Lower secondary	0.02	0.02	0.03	0.03	0.02
Higher secondary	-0.06**	-0.05**	-0.05**	-0.05**	-0.05**
Other	0.09	0.08	0.08	0.08	0.08
Not at school	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Home situation (ref. both parents)					
One parent	0.11**	0.11**	0.10**	0.10**	0.10**
One parent + new partner	0.13**	0.13**	0.13**	0.13**	0.13**
Other home situation	0.14**	0.14**	0.14**	0.14**	0.14**
<i>City characteristics</i>					
Disadvantage index		0.13*			
Mean income			-0.04		
Percentage ethnic minorities				0.01	
Percentage one-parent families					3.49**
<i>Neighbourhood characteristics</i>					
Disadvantage index		0.02*			
Mean income			-0.01		
Percentage ethnic minorities				< 0.01	
Percentage one-parent families					0.23**

†p < .10; *p < .05; **p < .01

The results of the demographic characteristics are mostly in line with our expectations: older adolescents show more delinquent behaviour than younger ones; boys are more likely to commit delinquent acts than girls; adolescents at higher secondary school are less likely to commit delinquent acts than adolescents at other school levels; and youngsters not living with two of their (biological) parents show more delinquent behaviour than adolescents who do live with both of their parents. With regard to ethnicity the results are not as expected. Only adolescents

with one foreign born parent and one Dutch born parent show a higher likelihood of committing delinquent acts than adolescents with two Dutch born parents. Adolescents with a Moroccan background even show less delinquent behaviour than Dutch adolescents. Considering previous research showing the opposite (Blom et al., 2005), these findings are rather remarkable.

3.5 Conclusion and discussion

In this research we examined to what extent determinants at different ecological levels, i.e. the city versus the neighbourhood level, derived from social disorganisation theory affect youth delinquency controlling for individual characteristics. No studies have yet tested characteristics from these different ecological contexts simultaneously in the study of delinquent behaviour of adolescents. We have derived similar hypotheses on both city and neighbourhood level to disentangle the effects of these different ecological contexts on youth delinquency. The same phenomena measured at both city and neighbourhood level have been included into the analyses simultaneously to ascertain which determinant measured at which level affects youth delinquency.

Using data from different cities in the Netherlands, we first found that cities were a more important ecological context in the explanation of youth delinquency than neighbourhoods. Furthermore we found that contextual disadvantage, measured at both city and neighbourhood level, affected youth delinquency. Adolescents living in cities or neighbourhoods characterized by a higher level of contextual disadvantage showed higher levels of delinquent behaviour, regardless of their individual situation. Further analyses showed that from the indicators used to construct contextual disadvantage, only the percentage of one-parent families living in the city or the neighbourhood significantly affected delinquency of adolescents. A similar finding amounts from the research of Anderson (2002), although found in a different ecological context. In her research, Anderson used the school as ecological context. She found that the amount of single-parent families positively affected delinquent behaviour of adolescents. Adolescents attending schools with more pupils from broken homes, were more likely to commit delinquent acts than adolescents attending schools with less pupils from broken homes.

The results of this chapter have shown that family disruption affects youth delinquency at individual, neighbourhood and city level. Meaning that living in neighbourhoods and cities in which more one-parent families live, affects delinquent behaviour of adolescents, as well as living at home with one parent. At the individual level this finding suggest that delinquent behaviour might be a disadvantageous outcome of living with one parent. At the neighbourhood and city level, these findings ask for an explanation as to why adolescents living in ecological contexts

characterized by high family disruption, show more delinquent behaviour than in ecological contexts in which less one-parent families live. A mechanism explaining these results might be that such contexts are less able to control behaviour of adolescents in these areas. More one-parent families in an area mean less people available to keep an eye on the behaviour of adolescents, and to address to their behaviour when necessary.

In our study we only tested the influence of the structural components of social disorganisation theory. In recent empirical studies testing social disorganisation theory, also intervening mechanisms have been tested, like for example collective efficacy (Sampson et al., 1997), and sense of community (Cantillon, Davidson and Schweitzer, 2003). These recent studies propose and show that structural characteristics indicating disadvantage induce a lack of social cohesion within an ecological context, which in turn reinforces delinquent behaviour. In the present research we have found that especially the percentage of one-parent families in a context affects delinquent behaviour. In future research it must be examined whether, and if so which mechanisms can explain this relationship with adolescent delinquency.

A limitation of our study is the use of cross-sectional data. For this reason it remains questionable whether the relations are actually causal relationships. Liska, Logan and Bellair (1998) found that crime rates are positively related with the ethnic composition in the ecological context. They have found causal effects in both directions: crime rates changed the ethnic composition of an area, and ethnic composition affected crime rates. Hence, to pre-empt the problem of causality, more elaborated data, like longitudinal or panel data, are desired. As yet such data are not available in the Netherlands.

Another limitation of this study is the fact that due to comparability problems between the different cities we were restricted to construct delinquent behaviour using only six items. Future research testing the effect of city characteristics, above and beyond the influence of other ecological contexts, should try to use information from more cities, and should try to operationalize delinquency in a more profound way. An interesting research plan would be to collect and use data from cities and neighbourhoods in different European countries. Especially considering the apparent robust results on the lack of differences in youth delinquency between neighbourhoods in different West-European countries (for Germany, see Oberwittler, 2004; for Belgium, see Pauwels, 2007; for the Netherlands, see Rovers, 1997; Schneiders et al., 2003; Weijters et al., 2007).

What have we learnt from this research? Integrating explanations from different ecological contexts seems fruitful. We have shown evidence that the city level is a more important context in the explanation of youth delinquency than the neighbourhood context. At

contextual level we found that the proportion of one-parent families is most decisive to explain youth delinquency. Conventional wisdom holds that the percentage of ethnic minorities living in ecological contexts would increase youth delinquency. This explanation, however, is not supported by our results. In sum, future research must thus not consider the city context solely to explain aggregate levels of crime, but should also pay attention to the effects of city-level characteristics on individual behaviour.

Chapter 4

Differential effects of social control and peer characteristics on youth delinquency: The neighbourhood as moderator¹¹

Abstract

Given the inconsistent findings across studies testing the influence of individual, parent, school and peer characteristics on youth delinquency, we examined to what extent the influence of these characteristics have differential effects on youth delinquency in different neighbourhoods using data of 1,312 Dutch adolescents, derived from the Nijmegen Youth Monitor 1999. Differential effects have been found of individual characteristics on youth delinquency in different neighbourhoods. A better relationship with parents, and better school performance withheld adolescents from delinquent behaviour in advantaged neighbourhoods, but not in disadvantaged neighbourhoods. Less favourable attitudes towards deviancy withheld adolescents from delinquent behaviour in disadvantaged neighbourhoods. Association with deviant peers influenced delinquent behaviour in both advantaged and disadvantaged neighbourhoods. In disadvantaged neighbourhoods this effect was stronger for adolescents meeting their friends out on the streets.

4.1 Introduction

There is quite some consensus about conditions in which adolescents are withheld from committing delinquent acts, and conditions in which adolescents are more prone to perform delinquent behaviour. Possible conditions in which adolescents are withheld from delinquent behaviour are originally derived from Hirschi's version of social control theory (Hirschi, 1969). Social control theory predicts that adolescents with stronger bonds to society, that is adolescents who are closer attached to parents, more committed to school, and with a stronger belief in society's norms and values, are less likely to show delinquent behaviour. Conditions enhancing delinquent behaviour are association with deviant peers (Agnew, 1993; Aseltine, 1995; Lotz and Lee, 1999; Vitaro et al., 2000; Haynie, 2001; Henry et al., 2001; Garnier and Stein, 2002), and hanging around with friends on the streets (Osgood and Anderson, 2004). To test the influence of these conditions simultaneously, researchers have integrated social control theory with differential association theory, assuming that lack of social control induces interaction with deviant peers, which in turn reinforces the likelihood to commit delinquent acts (Elliott, Huizinga and Ageton, 1985; Thornberry, 1987). However, research testing this integrated model has shown

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mixed results. Some authors have found that association with delinquent peers fully mediates the effect of social control characteristics on delinquency (Simons et al., 1991; Warr, 1993; Scaramella et al., 2002), whereas others have found that social control characteristics both have a separate, direct effect on delinquency beyond and above an indirect effect via association with delinquent peers (Aseltine, 1995; Costello and Vowell, 1999; Erickson et al., 2000).

Agnew (2003) provides a possible explanation for these mixed findings, namely that characteristics influencing youth delinquency have differential effects in different circumstances. In this article, our main aim is to test whether and to what extent neighbourhood characteristics condition the effects of individual characteristics on youth delinquency. From previous research we know that neighbourhood characteristics affect youth delinquency (Sampson and Groves, 1989; Peebles and Loeber, 1994; Sampson et al., 1997; Beyers et al., 2001). Furthermore, testing the conditional effect of the neighbourhood seems fruitful, regarding the proposition of Sampson and Laub (1994, pp. 523 – 524) that poverty and structural disadvantage at the neighbourhood level influence delinquency by reducing the capacity of families to achieve effective informal social controls.

In the following, we derive and test hypotheses on the individual level regarding social control and peer characteristics. From social disorganization theory we derive neighbourhood conditions that might influence youth delinquency, and we derive hypotheses on how neighbourhood characteristics condition the effect of social control and peer characteristics on youth delinquency.

4.2 Theoretical background

4.2.1 Hypotheses regarding social control characteristics

We will focus in this research on three concepts of social control: attachment to parents, commitment to school, and internal control. With regard to the attachment of adolescents to their parents, Rankin and Wells (1990, p. 142) have generally proposed that juveniles who are not strongly attached to their parents are also insensitive to their parents' values and opinions, and thus are more likely to behave in a way that is not approved by their parents. In social control theory it is expected that adolescents more strongly attached to their parents, that is who have a better relationship with their parents, are less likely to commit delinquent acts. Research by Peiser and Heaven (1996) has shown that family relations are associated with youth delinquency. Adolescents with 'negative' family relations show more delinquent behaviour than adolescents with positive family relations. Furthermore, research by Sampson and Laub (1994), and Demuth

and Brown (2004) has shown that adolescents more closely attached to their parents are less likely to commit delinquent acts. We propose that the better the relationship of adolescents with their parents, the less they commit delinquent acts.

Adolescents less committed to school are more likely to commit delinquent acts (Hirschi, 1969). More recent research testing the effect of commitment to school on delinquency, has used different measures of commitment. Some authors used school performance and/or perceived school performance as indication of school commitment (Agnew, 1991; Benda, 1995; Mason and Windle, 2002). Others used a measure referring to adolescents' bond with school, indicating how much adolescents like school, and how they get along with teachers (Junger-Tas, 1992; Agnew, 1993; Junger and Haen-Marshall, 1997). Both measures showed to affect delinquency: adolescents who perform, or think they perform poorly at school turn out to be more likely to commit delinquent acts. Regarding the bond to school, the above mentioned studies found that adolescents who do not like school, and can not get along with their teachers, are more likely to commit delinquent acts. Both relationships will also be tested in this research. Thus, we propose that the better adolescents perform at school, and the more adolescents like school, the less they commit delinquent acts.

Internal control relates to the control imposed by the adolescent him/herself. Hirschi (1969) argued that there is a common value system present in society, to which some people feel more inclined to than other people. Adolescents who feel less inclined to support this value system were expected to be more likely to commit delinquent acts. The general social norm in society will be that deviance is wrong. People who are less committed to this social norm, are thus less likely to behave according to this norm. Various researchers testing control theory have found a significant, direct effect of belief on delinquency, concluding that adolescents who disapprove deviant/delinquent acts, are less likely to show such behaviour themselves (Matsueda, 1982; Junger-Tas, 1992; Benda, 1995; Junger and Hagen-Marshall, 1997; Costello and Vowell, 1999; Hoffmann, 2002). Hence, we expect that adolescents who disapprove deviancy, are less likely to commit delinquent acts than adolescents who approve deviancy, because having unfavourable attitudes towards deviance means that one feels more control from 'inside' to support the general social norm that deviant behaviour is wrong. A similar hypothesis can be derived from differential association theory (Sutherland, 1947), as this theory proposes that crime results from having so-called 'definitions' favourable to violation of law. In this research however we conceptualise the attitudes towards deviance as the extent to which adolescents disapprove delinquent acts. Hence, we will consider these attitudes as an element of social control.

4.2.2 The influence of peers on youth delinquency

4.2.2.1 Association with deviant peers

Differential association theory argues that crime results from learning positive ‘definitions’ towards criminal behaviour that are learned through interaction with others (Sutherland, 1947). People who interact more with others with favourable attitudes towards criminal behaviour, will learn these unconventional norms, and therefore will be more likely to show delinquent behaviour. Thus, association with delinquent peers is an important predictor of delinquent behaviour (Sutherland et al., 1992). There is ample evidence that association with deviant peers is closely related to deviant behaviour of adolescents (Agnew, 1993; Aseltine, 1995; Lotz and Lee, 1999; Vitaro et al., 2000; Haynie, 2001; Henry et al., 2001; Garnier and Stein, 2002).

Several researchers integrated elements of social control theory with differential association theory (Elliott et al., 1985; Thornberry, 1987). They proposed that weak conventional bonding permits strong delinquent bonding, which in turn reinforces delinquent behaviour (Elliott et al., 1985). Thus, the more general proposition, synthesizing social control theory and differential association theory, is that the effects of social control on juvenile delinquency are mediated by delinquent bonding, referred to by most authors as the association with delinquent/deviant peers. Research testing this mediating effect has shown mixed results. Some authors have found that association with delinquent peers fully mediates the effect of social control characteristics on delinquency (Simons et al., 1991; Warr, 1993; Scaramella et al., 2002), whereas others have found that social control characteristics both have a separate, direct effect on delinquency beyond and above an indirect effect via association with delinquent peers (Aseltine, 1995; Costello and Vowell, 1999; Erickson et al., 2000). Therefore, we will test to what extent the association with deviant peers affects youth delinquency, above and beyond the influence of social control characteristics. Moreover, we will test to what extent association with deviant peers mediates the effect of social control characteristics on youth delinquency.

4.2.2.2 Unstructured peer socializing

Another explanation of how peers can influence adolescents’ behaviour is derived from routine activity theory by Osgood et al. (1996). These authors have proposed that hanging around with peers in the absence of social control, that is in the absence of authority figures, increases the likelihood of deviant behaviour. According to these researchers, situations conducive to deviance are mostly prevalent during leisure activities away from authority figures. They argued that the presence of peers will make deviant acts more rewarding, the absence of authority figures will reduce the potential for social control responses, and the lack of structure will leave time available

for deviance. Results (Osgood et al., 1996) have shown support for the proposition that unstructured socializing with peers is strongly related to deviant behaviour, like crime, alcohol use and drug use. Osgood and Anderson (2004) have shown that unstructured socializing with peers, measured as the average amount of time adolescents spent with their peers unstructured and unsupervised, has a significant effect on delinquency, even after controlling for demographic characteristics, like gender, ethnicity and parents' education. Moreover, even after controlling for predictors like parental monitoring, commitment to school success and attachment to parents, unstructured socializing remained directly associated with delinquency (Osgood and Anderson, 2004).

Other studies have supported the notion that the likelihood to engage in deviant behaviour increases more strongly during unstructured leisure activities with peers than during activities that are highly structured (Agnew and Petersen, 1989; Hawdon, 1996; 1999; Mahoney and Stattin, 2000; Vazsonyi et al., 2002), even after controlling for social control characteristics, like attachment to parents, commitment to school and belief (Agnew and Petersen, 1989; Hawdon, 1996, 1999), and other peer characteristics, like association with deviant peers (Agnew and Petersen, 1989). In this study, we will test whether spending time with friends, unstructured and unsupervised, increases the likelihood of committing delinquent acts, beyond and above the influence of social control characteristics and association with deviant peers. We argue that it is not only having deviant peers as such that induces delinquency, but rather that socializing with peers out of authority's control is another independent, decisive determinant of youth delinquency.

Moreover, we expect association with deviant peers, and unstructured peer socializing to reinforce each other. We expect that the effect of associating with deviant peers on youth delinquency will be stronger for youngsters who hang out with their peers out of sight of authorities' eyes. Stated the other way around: the effect of unstructured socializing on youth delinquency is stronger for adolescents who associate more with deviant peers.

4.2.3 Neighbourhood effects on youth delinquency

4.2.3.1 Social disorganization theory: main effects

The influence of neighbourhood characteristics on delinquent behaviour has received more and more interest. Most of this recent research tests propositions derived from social disorganization theory. Social disorganization theory explains delinquency on the basis of disfunctioning of neighbourhoods. The theory emphasizes that 'society is organized, and thus functions, when people are presumed to have developed common agreement about fundamental values and

norms, as reflected in a high degree of behavioural regularity' (Clinard and Meier, 1992, p. 89). Related to the neighbourhood level, this means that a neighbourhood is socially organized when there is a high degree of social cohesion between the residents of this neighbourhood, and its institutions.

The origin of current social disorganization theory dates back to the research of Shaw and McKay ([1942]1969). They found neighbourhood characteristics and delinquency to be related. Neighbourhoods characterized by high residential mobility, by ethnic heterogeneity, and by a low economic status were found to have high levels of delinquency. Shaw and McKay explained this finding by proposing that neighbourhoods with these characteristics are characterized by community disruption, which implies a low degree of social cohesion, that can be identified by low social control and weak social networks. As an extension to social disorganization theory, Sampson (1986) asserted that family disintegration at contextual level is an important indicator affecting informal social control. Adolescents in areas characterized by a high number of disrupted families receive less informal social control on their activities, and are less likely to be addressed on their (delinquent) behaviour.

Various researchers have tested that neighbourhood characteristics like high residential mobility, ethnic heterogeneity, low economic status, and more family disruption directly affect the likelihood of its residents to commit crimes (Sampson and Groves, 1989; Peeples and Loeber, 1994; Sampson et al., 1997; Beyers et al., 2001). Beyers et al. (2001) have shown that the more disadvantaged a neighbourhood is, the more boys residing in such neighbourhoods show violent delinquent behaviour. Their measure of neighbourhood disadvantage has been constructed by using six indicators: percent families with children headed by single parents, median household income, percent families below the poverty level, percent households on public assistance, percent unemployed, and percent African Americans. Similar findings have been reported by Peeples and Loeber (1994) in their research on the seriousness and frequency of adolescent boys' delinquency. Rovers (1997), however, has found neither influence of neighbourhood deprivation, nor an effect of a lack of social control in the neighbourhood on criminal behaviour of juveniles. Sampson and Groves (1989) have found only ethnic heterogeneity to have a direct effect on the offence rate of personal violence. Sampson et al. (1997) have shown direct effects of neighbourhood characteristics, concentrated disadvantage, immigrant concentration, and residential stability, on rates of violence.

Considering previous research, we test the proposition that adolescents in disadvantaged neighbourhoods are more likely to commit delinquent acts than adolescents in advantaged neighbourhoods, controlling for relevant social control and peer characteristics. Following

previous findings on social disorganization theory, neighbourhoods are considered to be disadvantaged when characterized by high level of ethnic minorities, low socio-economic status, high residential mobility, and high level of one-parent families.

4.2.3.2 Conditional effects of the neighbourhood on the relation between social control and peer characteristics and youth delinquency

Empirical research testing the hypothesis that individual characteristics have differential effects in different neighbourhoods is relatively scarce. But, there are arguments in favour of the conditional effect of the neighbourhood on the relation between individual characteristics and youth delinquency. It has been argued by Sampson and Laub (1994) and Hoffmann (2002) that social controls that withhold adolescents from committing crimes will be less effective in disadvantaged neighbourhoods, because these neighbourhoods are characterized by low social support structures that make them less effective to control their residents' behaviour. Hoffmann (2002) has further argued that reinforcements of deviant behaviour are more prevalent in disorganized neighbourhoods, which contributes to residents' deviant behaviour. These arguments can be placed in line with the separation-individuation process. During adolescence the parent-adolescent relationship is redefined by adolescents. They become more autonomous from their parents, and at the same time adolescents become more susceptible for peer pressure (Steinberg and Silverberg, 1986). Hence, during adolescence a process is taking place of adolescents becoming less dependent on parents, but more dependent on peers.

We propose that the shifting dependence from parents to peers will be more pronounced in disadvantaged neighbourhoods. We expect that a positive relationship of adolescents with their parents will be less effective in withholding adolescents from delinquent behaviour in disadvantaged neighbourhoods than in advantaged neighbourhoods. This expectation is based on the assumption that negative stimuli are more prevalent in disadvantaged neighbourhoods, which will reduce the effectiveness of parental control over adolescents' delinquent behaviour in disadvantaged neighbourhoods even more so than in advantaged neighbourhoods. More generally, we propose that the deterrent effect of social control characteristics on youth delinquency will be less effective in disadvantaged neighbourhoods than in advantaged neighbourhoods. The same rationale can be applied to the influence of peer characteristics on youth delinquency. In disadvantaged neighbourhoods delinquent behaviour is less disapproved than in advantaged neighbourhoods, which reduces the threshold to perform such behaviour. Therefore we expect that the effect of characteristics enhancing youth delinquency will be stronger in disadvantaged neighbourhoods than in advantaged neighbourhoods. In former

sections we have argued that association with deviant peers, and unstructured peer socializing positively affect youth delinquency. Hence, we expect these characteristics to have stronger effects on youth delinquency in disadvantaged neighbourhoods than in advantaged neighbourhoods.

Few studies have tested the conditional effects of the neighbourhood on the relationship of social control and peer characteristics with youth delinquency. Beyers et al. (2001) have shown that poor parent child communication has a stronger effect in disadvantaged neighbourhoods than in advantaged neighbourhoods. Knoester and Haynie (2005) have concluded that family integration is less effective in deterring youth violence in high risk neighbourhoods. Likewise, Simons et al. (2002) have found that parental control is less effective in communities characterized by high levels of crime and deviant behaviour. Hoffmann (2002) has tested the interaction between individual and neighbourhood characteristics. His results show that some effects of individual characteristics (i.e. stressful life events, parental supervision, and school results) vary between advantaged and disadvantaged neighbourhoods. The effects of stressful life events and parental supervision on delinquent behaviour are shown to be more substantial in disadvantaged neighbourhoods than in advantaged neighbourhoods, whereas the effect of school involvement is more pronounced in advantaged neighbourhoods.

This previous research is in general in line with our expectations stated above. Hence, we will test two hypotheses with regard to the conditional effects of the neighbourhood. First, we expect that social control characteristics have a stronger effect on youth delinquency in advantaged neighbourhoods than in disadvantaged neighbourhoods. Second, we test the hypotheses that peer group characteristics, that is association with deviant peers and unstructured peer socializing, have a stronger effect on youth delinquency in disadvantaged neighbourhoods than in advantaged neighbourhoods.

4.2.4 Recapitulation of hypotheses

The hypotheses to be tested in this study can be distinguished in hypotheses related to main effects, and hypotheses related to conditional effects. With regard to the main effects, we have proposed that the stronger adolescents are attached to their parents, the more they are committed to school, and the less favourable attitudes they have towards deviancy, the less likely they are to commit delinquent acts. Furthermore, we proposed that the more adolescents associate with deviant peers and the more they hang out unsupervised with their peers, the more adolescents commit delinquent acts. With regard to the influence of the neighbourhood on youth

delinquency, we hypothesized that adolescents in disadvantaged neighbourhoods show more delinquent behaviour than adolescents in advantaged neighbourhoods.

Our main research question is to what extent neighbourhood characteristics condition the effect of social control and peer characteristics on youth delinquency. In other words, we want to test whether individual characteristics have differential effects in different neighbourhoods. We proposed that social control characteristics withhold adolescents more strongly from delinquent behaviour in advantaged neighbourhoods than in disadvantaged neighbourhoods. With regard to peer characteristics, we proposed that the positive effect of association with deviant peers and unstructured peer socializing on youth delinquency is stronger in disadvantaged neighbourhoods than in advantaged neighbourhoods.

To avoid overestimation of social control and peer characteristics, we control in all the analyses of this chapter for demographic characteristics. With regard to the influence of demographic characteristics on youth delinquency, there is ample evidence that boys commit more crimes than girls (e.g., Rhodes and Fischer 1993; Steffensmeier and Allan, 1996; Piquero et al., 2005), and that delinquency rises sharply during adolescence, with a peak at about age 17 (Moffitt, 1993). Other demographic characteristics correlating with youth delinquency are ethnicity, educational level, and home situation. Previous research has shown that adolescents from ethnic minorities (Junger and Haen Marshall, 1997), adolescents with a lower level of education (Williams et al., 1999; Hansen 2003), or living with only one parent (Sampson and Laub, 1994; Anderson 2002) are more likely to perform delinquent behaviour.

4.3 Methods

4.3.1 Data

In this research we use data derived from the Youth Monitor 1999 of Nijmegen, a major city in the south eastern part of the Netherlands. The purpose of this youth survey, based upon the Dutch standard Youth Monitor G21 (Bijmold et al., 1998), is to sketch the behaviour and living situation of 12 to 17 year old youngsters in this city. Participating youngsters are questioned about several subjects, like risk behaviour (smoking, drinking, drug use, delinquency, etc.) and characteristics about family, school, and peers. Youngsters were randomly selected from the municipal register. Selected individuals received a mail questionnaire at their home. In order to enlarge the reliability for disadvantaged neighbourhoods, these neighbourhoods were over sampled. In an accompanying letter, parents were asked whether they had any objections against the research, and if not, whether they could let the adolescent fill in the questionnaire alone. The

questionnaires were picked up at home, that led to a response rate of 67%, which is relatively high for survey research in the Netherlands. In total 1,349 adolescents participated in the research. For this research we selected only adolescents who still attend school. This has the disadvantage that possible school dropouts are excluded from the analyses. The number of respondents not at school anymore is, however, relatively low due to legal obligations to visit school up to the age of 18. 37 Respondents state that they do not attend school. Of this group we do not know whether or not they left school after passing their exam. We know that approximately half of this group has a job. As we do not know whether this group consists solely of school dropouts, we decided to exclude them from the analyses.

The sample used in this research is representative for age, gender, and living area. Two short comments have to be made with regard to representativity. First, respondents of ethnic minority origin are on average a bit older than Dutch respondents. Secondly, adolescents at lower secondary school are slightly underrepresented in the final dataset, whereas adolescents at higher secondary school are slightly overrepresented. We do not expect this to be problematic. Neighbourhood characteristics were gathered via the so called City numbers ('Stadsgetallen'). These numbers represent information on various topics on neighbourhood level, like demographics, and work and income.

4.3.2 Measures

Delinquency has been measured by a list of 24 serious and less serious offences. The list of acts can be found in appendix A. Per offence respondents had to report whether they had committed that act over the last 12 months. The final scale is constructed by counting the different acts committed over the last year. This scale varies from 0 to 21 ($\alpha = 0.83$). Because most adolescents have not committed a crime, this scale is highly skewed; approximately 60% of the respondents stated not to have committed a crime in the past 12 months. To reduce this skewness, the square root of this counted delinquency scale is used in the regression analyses.

The *relationship of adolescents with their parents* has been measured by asking the adolescents four items. These items are: 'when something is bothering you, can you talk with your parents about it?', 'do you feel comfortable at home?', 'do you think your parents have enough time for you?', and 'can you talk with your parents about things you really care about?' Reliability analysis shows that these items form a good scale ($\alpha = 0.76$). A higher score indicates that adolescents perceive to have a good relationship with their parents.

The scale that represents how much adolescents like school, *school satisfaction* ($\alpha = 0.70$), is formed by three items, ‘do you like it at school?’, ‘do you like most teachers at school?’, and ‘do you dislike going to school?’ The higher the score on this scale, the more adolescents like school.

For *school performance* a scale is used, representing adolescents’ perceived performance at school. The adolescents were asked three questions: ‘do you think it is difficult at school?’, ‘do you understand everything at school?’, and ‘can you finish your schoolwork in time?’ A higher score indicates higher perceived school performance ($\alpha = 0.52$). Constructing a two item scale does not enhance the reliability. The low reliability coefficient is due to the fact that the scale is constructed with only three items. When more items would be available, the reliability coefficient would presumably be (much) higher.

To measure adolescents’ *negative attitudes towards delinquency*, respondents were asked what they think about shoplifting, troubling girls, other adolescents selling soft drugs, and smashing up a phone booth, a bike or something else. Per item, adolescents were asked to state their opinion. The answer categories to choose from were: it is ok, I don’t mind, I think it is bad, I think it is very bad, don’t know. Reliability analysis of these items showed an alpha of .71. A higher score means more disapproval of delinquent behaviour.

Association with deviant peers has been measured by asking the adolescents about the risk behaviour of their friends. Respondents were asked how many (0 = nobody, 1 = a few, 2 = most) of their friends showed risk behaviour: getting drunk at least once a week, using tranquillizers, using sleeping pills, playing a slot machine, betting or playing cards for money, using marihuana (hashish or weed), using cocaine, using heroin, using XTC, using amphetamines, and skip school. A higher score on this scale indicates that adolescents state to associate more with peers with deviant behavioural patterns ($\alpha = 0.78$).

The second peer measure is *unstructured peer socialization*. This measure represents the place where adolescents meet their friends, distinguishing between places with and without adult supervision. Those adolescents, who stated that they met their friends on the streets hanging around, or in the city centre, scored a 1 on this measure. Respondents who answered they met their friends at other places, that is at home, at a friend’s home, at school, in a bar or disco, in a community centre, or at a sports club, scored a 0 on this measure. In Table 4.2 it is shown that 25% of the respondents meet their friends outside on the streets and/or in the city centre.

With regard to neighbourhood characteristics, we operationalize the following measures: *ethnic heterogeneity*, *residential mobility*, *economic status*, and *family disruption*. *Ethnic heterogeneity* has been measured by the percentage of ethnic minority families living in the neighbourhood. A selection is made on ethnic minority groups which are subject to special minority policies, among these

groups are Turks, Moroccans, Surinamese and Antilleans. *Residential mobility* is measured by the number of people who have moved outside of the neighbourhood in the last year divided by the total number of people living in the neighbourhood in that particular year. *Economic status* has been measured in two ways. The first measure is the percentage low income families in the neighbourhood, the second one is the percentage low priced houses in the neighbourhood. *Family disruption* has been constructed by aggregating the percentage of adolescents living with only one parent to the neighbourhood level. This measure thus represents the percentage adolescents living with one parent in the neighbourhood. Table 4.1 shows that the neighbourhood measures correlate highly except for residential mobility. We performed a factor analysis, which showed that the neighbourhood measures can be composed into one clear factor. Reliability analysis of these measures suggests that ethnic heterogeneity, both economic status measures, and family disruption form the best scale. Excluding residential mobility improved the Cronbach's alpha from 0.75 to 0.78. Therefore we constructed a measure of *neighbourhood disadvantage*, including ethnic heterogeneity, the two measures regarding economic status, and family disruption. *Neighbourhood disadvantage* has been constructed by first standardizing the neighbourhood measures, and then taking the mean score of ethnic heterogeneity, percentage of low income families, percentage low priced houses, and the percentage one-parent families. In the analyses we used *residential mobility* as a separate neighbourhood measure.

Table 4.1: Correlations between the neighbourhood measures

	Ethnic heterogeneity	Residential mobility	Low income families	Low priced houses
Residential mobility	0.27			
Low income families	0.47	0.20		
Low priced houses	0.54	0.23	0.59	
Family disruption	0.54	0.09	0.43	0.45

The demographic variables we control for in this chapter are: *gender*, *age*, *ethnicity*, *education*, and *home situation*. With regard to *gender*, girls were coded a 1, and boys 0. *Age* has been measured in years, and varies from 12 to 17 year. For each adolescent we subtracted 12 years of his/her age. Hence, the final measure of *age* varies from 0 (12 years old) to 5 (17 years old). *Ethnicity* is represented by six categories, that is Dutch, Surinamese, Antillean, Turkish, Moroccan, mixed and others. This measure is based upon the country in which the adolescent's parents are born. When both parents are born in the same country, the adolescent is placed in that particular category. The category mixed contains those adolescents of whom one parent is born in the Netherlands, and the other abroad. Adolescents are placed in the category others, when their

parents are born in different countries, none being the Netherlands, or in the same country, but other than the above categories. The variable measuring *education* represents the level of education the adolescent attends at the time of the interview. Categories of educational level are: primary, lower secondary, higher secondary, and other. By *home situation* we take into account with whom the adolescent lives at home. Categories are: with both parents, only with one parent, with one parent and new partner of the parent, and other home situation. When adolescents do not live with both parents, we do not know what the reason is why the parents do not live together anymore.

Table 4.2: Descriptive statistics of the dependent and independent variables (N = 1,312)

	M	SD	Minimum	Maximum
Delinquency	1.15	2.32	0.00	21.00
<i>Social control characteristics</i>				
Relation with parents	2.67	0.42	1.00	3.00
School satisfaction	2.86	0.51	1.00	4.00
School performance	3.01	0.41	1.67	4.00
Negative attitudes towards deviance	3.41	0.56	1.00	4.00
<i>Peer characteristics</i>				
Association with deviant peers (ADP)	0.16	0.21	0.00	1.55
Unstructured peer socializing (UPS)	0.25	0.44	0.00	1.00
<i>Neighbourhood characteristics</i>				
Neighbourhood disadvantage	0.00	0.79	-2.06	1.15
Residential mobility	0.12	0.03	0.07	0.38

4.3.3 Analysis

Individuals are nested within neighbourhoods in the dataset used for this research. In general, it is assumed that individuals within the same neighbourhood resemble each other more than individuals from different neighbourhoods. Using multilevel analysis accounts for this dependence of individuals in the same neighbourhoods (Snijders and Bosker, 1999). The first step is to test whether the assumption holds that individuals within the same neighbourhood resemble each other more than individuals from different neighbourhoods. Therefore in our first model only individual level variance is estimated, while in a second model also neighbourhood level variance is estimated. It turned out that the goodness of fit of the latter model did not improve significantly by allowing neighbourhoods to differ (the decrease in deviance is 1.17, which is not significant in a chi squared distribution with 1 degree of freedom). This implies that in our research there is no variance at the neighbourhood level, suggesting that neighbourhoods do not differ in the extent of youth delinquency. Considering this lack of support for a multilevel design, we decided to show results of ordinary regression analyses instead of multilevel analyses.

4.4 Results

4.4.1 Main effects

In Table 4.3 the results of the regression analyses for testing our hypotheses with regard to the main effects are shown. Analyses were performed in three subsequent steps. In the first step the influence of social control characteristics on youth delinquency was tested. In the second step we extended the social control model by inserting peer characteristics. In the final step, neighbourhood characteristics were included in the model. In all three models we controlled for the influence of demographic variables.

Table 4.3: Regression analysis of the influence of social control, peer, and neighbourhood characteristics on youth delinquency (unstandardized regression coefficients, N = 1,312)

	Model 1	Model 2	Model 3
Intercept	4.13**	2.84**	2.87**
<i>Social control characteristics</i>			
Relation with parent(s)	-0.20**	-0.13*	-0.14**
School satisfaction	-0.18**	-0.09*	-0.09*
School performance	-0.09†	-0.07	-0.07
Negative attitudes towards deviance	-0.63**	-0.44**	-0.44**
<i>Peer characteristics</i>			
Association with deviant peers (ADP)		1.51**	1.50**
Unstructured peer socializing (UPS)		0.10	0.09
ADP * UPS		0.24	0.25
<i>Neighbourhood characteristics</i>			
Neighbourhood disadvantage			0.04
Residential mobility			0.13
<i>Demographic variables</i>			
Gender (0: male)	-0.20**	-0.21**	-0.22**
Age	-0.01	-0.03	-0.03
Age squared	0.01	-0.01	-0.01
Ethnicity (ref. Dutch)			
Surinamese	0.06	0.17	0.15
Antillean	-0.25	-0.22	-0.23
Turkish	-0.03	-0.01	-0.04
Moroccan	-0.04	-0.04	-0.07
Mixed	-0.10	-0.14†	-0.14*
Other groups	0.08	0.10	0.09
Education (ref. higher secondary)			
Primary school	-0.08	-0.09	-0.10
Lower secondary	0.11*	0.04	0.03
Other education	-0.02	-0.11	-0.12
Home situation (ref. both parents)			
With one parent	0.12*	0.07	0.05
One parent + parent's new partner	0.14	0.07	0.06
Other home situation	0.19	0.14	0.12
Adjusted R square	0.29	0.39	0.39

† $p < .10$; * $p < .05$; ** $p < .01$

As can be seen in Model 1 of Table 4.3, the parameters of the social control characteristics affected youth delinquency in the proposed direction. The results showed that adolescents with a

better relationship with parents, more satisfaction with school, a better (perceived) school performance, and who have more unfavourable attitudes towards deviance, are least likely to commit delinquent acts. Model 2 of Table 4.3 showed that association with deviant peers strongly affected the likelihood of adolescents to commit delinquent acts. The effects of unstructured peer socializing, and the interaction between association with deviant peers and unstructured peer socializing on youth delinquency were not significant. Also both neighbourhood measures did not affect youth delinquency directly. This is in line with the research of Rovers (1997), who did not find either an effect of neighbourhood characteristics on criminal behaviour of adolescents in the Netherlands.

With regard to the hypothesis that peer characteristics mediate the influence of social control characteristics on youth delinquency, results in Model 2 in Table 4.3 showed that by extending the social control model with peer characteristics, the effects of the social control characteristics were somewhat reduced. The effect of school performance on youth delinquency was even reduced to non significance. On the basis of our results we can thus conclude that peer characteristics mediate the effects of social control characteristics on youth delinquency to some extent. These results are in line with the propositions of theorists integrating social control theory and differential association theory (Elliott et al., 1985; Thornberry, 1987).

Table 4.4: Regression analysis of the conditional effect of neighbourhood characteristics on the relation between social control and peer characteristics, and youth delinquency (unstandardized regression coefficients, N = 1,312)¹

	Youth delinquency
Intercept	2.89**
<i>Social control characteristics</i>	
Relation with parents	-0.14**
School satisfaction	-0.08†
School performance	-0.08
Negative attitudes towards deviance	-0.44**
<i>Peer characteristics</i>	
Association with deviant peers (ADP)	1.52**
Unstructured peer socializing (UPS)	0.10
ADP * UPS	0.23
<i>Neighbourhood characteristics</i>	
Neighbourhood disadvantage	0.45**
Residential mobility	0.16
<i>Neighbourhood interactions</i>	
Attitudes towards deviance * Neighbourhood disadvantage	-0.12**
Adjusted R ²	0.40

†p < .10; *p < .05; **p < .01

¹ In the analyses we controlled for the influence of demographic characteristics, but these coefficients are not shown in the table

The results of Model 1 in Table 4.3 showed that the parameters of most of the demographic characteristics do not reach significance, except for gender and, to a lesser extent, ethnicity. It turned out that girls commit less delinquent acts than boys. With regard to ethnicity we only found an effect for adolescents with a mixed background. These youngsters turned out to be less delinquent than Dutch adolescents. From Model 1 we further learned that adolescents attending lower secondary schools commit more delinquent acts than adolescents attending higher secondary school. This effect disappeared when peer characteristics were included in the model. The same held for adolescents living with one parent: they commit more delinquent acts than adolescents living in non broken families, but this effect disappeared when peer characteristics were introduced in the model (see Model 2).

4.4.2 Conditional effects

To test the conditional effects of the neighbourhood on the influence of social control and peer characteristics on youth delinquency, we extended Model 3 of Table 4.3 with interactions between individual (i.e. social control and peer characteristics), and neighbourhood characteristics. One significant interaction effect between neighbourhood disadvantage and attitudes towards deviancy was found. Results of this analysis are shown in Table 4.4.

It appeared that unfavourable attitudes towards deviance withhold adolescents more strongly from delinquency when living in a more disadvantaged neighbourhood. This result is in contrast with our expectation that social control characteristics have a stronger effect in advantaged neighbourhoods than in disadvantaged neighbourhoods.

Next to estimating the influence of interaction effects of neighbourhood and individual characteristics on youth delinquency, another way of testing whether social control and peer characteristics have differential effects in different neighbourhoods is to test the influence of these characteristics in different neighbourhoods separately. Results of this approach are presented in Table 4.5. We conducted analyses for both advantaged and disadvantaged neighbourhoods separately. To distinguish between advantaged and disadvantaged neighbourhoods, we divided the measure of neighbourhood disadvantage into five categories of equal amount. The first category was defined as the most advantaged neighbourhoods characterized, the fifth category was defined as the least advantaged neighbourhoods. For these two extreme categories the influences of social control, peer and demographic characteristics on youth delinquency were tested. By focusing upon the most advantaged and most disadvantaged neighbourhoods separately, we enlarge the possible differences between these two different contexts. Furthermore we tested whether the coefficients of the social control and peer

characteristics differed significantly between the two distinguished types of neighbourhood. The formula for the standard test for coefficient differences across equations is: $t = (b_1 - b_2) / \sqrt{(SEb_1^2 + SEb_2^2)}$ (Paternoster et al., 1998).

Table 4.5: Regression analysis of the influence of social control and peer characteristics on youth delinquency for advantaged and disadvantaged neighbourhoods separately (unstandardized regression coefficients, for advantaged neighbourhoods n = 259 and for disadvantaged neighbourhoods n = 246)¹

	Advantaged neighbourhoods	Disadvantaged neighbourhoods	Differences between neighbourhoods
Intercept	2.50**	3.13**	
<i>Social control characteristics</i>			
Relation with parents	-0.25*	-0.08	n.s.
School satisfaction	0.06	-0.09	n.s.
School performance	-0.33**	-0.09	n.s.
Negative attitudes towards deviance	-0.12	-0.48**	**
<i>Peer characteristics</i>			
Association with deviant peers (ADP)	1.86**	1.07*	n.s.
Unstructured peer socializing (UPS)	0.06	-0.12	n.s.
ADP * UPS	0.55	1.39*	n.s.
Adjusted R ²	0.43	0.36	

†p < .10; *p < .05; **p < .01; n.s.=not significant

¹ In the analyses we controlled for the influence of demographic characteristics, but these coefficients are not shown in the table

As can be seen in Table 4.5, there were some interesting differential effects between the two distinguished groups of neighbourhoods. With regard to the social control characteristics, it turned out that in advantaged neighbourhoods, a better relationship of adolescents with parents, and better (perceived) school performance withhold adolescents from committing delinquent acts, whereas these effects were not significant in disadvantaged neighbourhoods. Unfavourable attitudes towards deviance negatively affected youth delinquency only in disadvantaged neighbourhoods. This effect was not significant in advantaged neighbourhoods. This is in line with the results in Table 4.4 that attitudes towards deviance have a stronger effect on youth delinquency in more disadvantaged neighbourhoods. Association with deviant peers reinforced youth delinquency in both areas, whereas unstructured peer socializing did not affect youth delinquency in both types of neighbourhoods. The interaction between association with deviant peers and unstructured peer socializing only showed an effect in disadvantaged neighbourhoods. This interaction effect means that association with deviant peers has an even stronger effect on youth delinquency for adolescents living in disadvantaged neighbourhoods, when they meet their friends out on the streets. We did not find, however, that this effect differed significantly from its effect in advantaged neighbourhoods.

4.5 Conclusion and discussion

Our main research question was to what extent neighbourhood characteristics condition the effects of individual characteristics, that is social control and peer characteristics, on youth delinquency. To answer this question we first tested the main effects of social control, peer and neighbourhood characteristics on youth delinquency. Secondly we examined whether neighbourhood characteristics moderated the influence of social control and peer characteristics on youth delinquency.

Our results showed that a better relationship with parents, more school satisfaction, and less favourable attitudes towards deviant behaviour withhold adolescents from delinquent behaviour, which is in line with our hypotheses. Only school performance had no direct influence on youth delinquency. In line with previous research (Aseltine, 1995; Costello and Vowell, 1999; Erickson et al., 2000), we found that the influence of social control characteristics was partially mediated by peer characteristics, that is association with deviant peers, and unstructured peer socializing. The main effect of unstructured peer socializing was not significant, which is remarkable considering previous research which did find an effect of unstructured peer socializing on youth delinquency (Agnew and Petersen, 1989; Hawdon, 1996; 1999; Mahoney and Stattin, 2000; Vazsonyi et al., 2002). An explanation might be that our measure of unstructured peer socializing is not that strong due to the use of secondary data. We measured unstructured peer socializing by asking adolescents where they met their friends. In future research, a better measurement of unstructured peer socializing would be by asking adolescents not only where they meet their friends, but also how much time they spend with their friends in unsupervised and unstructured situations (like for example, Osgood and Anderson, 2004).

Neighbourhood characteristics turned out to have no significant direct relationship related to youth delinquency. Another interesting finding of this study was that neighbourhoods even did not differ in the extent of youth delinquency. In methodological terms, we did not find evidence for a multilevel design. That is, individuals within the same neighbourhood did not resemble each other more than individuals living in different neighbourhoods. For the Dutch situation this is not so surprising considering the research of Rovers (1997) and of Schneiders et al. (2003), who also found only small differences between neighbourhoods. In Germany, Oberwittler (2004) also found merely small differences between neighbourhoods. In comparison with American research our results are more surprising, because in the U.S. neighbourhoods seem to differ more. It might be the case that in the Netherlands, and may be also in other European countries, neighbourhoods differ less than in the U.S. regarding youth delinquency.

Testing whether social control characteristics and peer characteristics have differential effects in different neighbourhoods, provided us with rather new insights. First, it turned out that in advantaged neighbourhoods, youngsters who have a good relationship with their parents are refrained from youth delinquency which on the other hand does not hold for similar youngster in disadvantaged neighbourhoods. These findings are consistent with Beyers et al. (2001), and Knoester and Haynie (2005) who found that positive family relationships are less effective in disadvantaged neighbourhoods than in advantaged neighbourhoods. Second, we found that youngsters in advantaged neighbourhoods performing better at schools are quite likely to refrain from delinquency, which does not hold for similar youngsters in disadvantaged neighbourhoods. This finding is consistent with Hoffmann's results (2002), who showed that the attenuating impact of school involvement on youth delinquency is stronger in advantaged neighbourhoods than in disadvantaged neighbourhoods. Third, we found that less favourable attitudes towards deviant behaviour withheld adolescents in disadvantaged neighbourhoods more strongly from delinquent behaviour than adolescents in advantaged neighbourhoods. Considering these differential effects we might conclude that in advantaged neighbourhoods environments around the individual, like family and school, are more important in refraining adolescents from delinquent behaviour, whereas in disadvantaged neighbourhoods it depends more on the individuals themselves whether or not they will refrain themselves from committing delinquent acts.

A short remark has to be made on the interpretation of the differential effects described above. Not all the results were found in the general population, but in the analysis of two groups of extreme neighbourhoods, that is the most advantaged neighbourhoods and the least advantaged neighbourhoods. This could indicate that our findings are specific only for these extreme categories. On the other hand, however, we conducted our research using data from a rather prosperous city in the Netherlands with relatively small differences between neighbourhoods in the extent of poverty. Perhaps our findings will be more pronounced using neighbourhoods in other cities or in other countries with more heterogeneity in poverty levels. Maybe in such a situation the buffering effect of social control characteristics will be even less in disadvantaged neighbourhoods.

In future research some shortcomings of this study can be accounted for. Our data are cross sectional. It would be more appropriate to use longitudinal data. Then, more profound statements can be made with regard to the causal order underlying this approach. Another limitation of this study was the measurement of deviant behaviour of peers. Respondents had to sketch the behaviour of their peers, in stead of a social network method by which peers respond

about them. Previous research has shown that using the social network method results in higher estimates of peer delinquency, but in lower estimates of the association between the respondent's level of delinquency and the level of delinquency of his friends (Weerman and Smeenk, 2005).

Our results contribute to the evidence derived from previous research that social control characteristics have differential effects in different neighbourhoods. In advantaged neighbourhoods, a better relationship with parents and better school performance have a mitigating effect on youth delinquency. In disadvantaged neighbourhoods the relationship with parents and school performance are less effective. In these areas having less favourable attitudes towards deviancy withhold adolescents more strongly from delinquent behaviour than in advantaged neighbourhoods. Our results might thus imply that close surroundings like family, and school are more important in constraining adolescents from delinquency in advantaged neighbourhoods than in disadvantaged neighbourhoods, whereas in disadvantaged neighbourhoods internal control might be more effective. Vice versa, our results suggest that in disadvantaged areas positive relations with family and school are less effective in influencing adolescents' delinquent behaviour. However, as only few studies have tested the differential effects of social control in different contexts, more research is needed on this topic in order to find out whether family and school are really less effective in affecting adolescents' behaviour in disadvantaged contexts.

Chapter 5

School context: What does it add to the explanation of youth delinquency? Individual and school level determinants of delinquent behaviour among adolescents at secondary school in the Netherlands

Abstract

School context has received little attention in studies on youth delinquency. In this chapter we focus on the way school-level characteristics directly affect youth delinquency, and on the way school-level characteristics condition the relationship between bonds to family, school, and peers, and youth delinquency. Data are used from the WHO-study 'Health Behaviour in School-Aged Children (HBSC)', gathered among Dutch adolescents at secondary school in 2001. Results show that at schools characterized by a higher number of students per staff member, adolescents show more delinquent behaviour. With regard to the conditional effect of school-context, results show that parental knowledge has a stronger effect in refraining adolescents from delinquent behaviour for adolescents attending schools with a higher teacher-student ratio.

5.1 Introduction

Most research on delinquent behaviour of adolescents concentrates on the influence of the relationship of adolescents with parents, school and peers, ignoring the possible influence of the context, such as schools and neighbourhoods. However, ecological theory stresses that the relation between risk factors and behavioural outcomes depends on the ecological context in which those risks are experienced (Bronfenbrenner, 1986). Studies on contextual influences of adolescent delinquent behaviour mostly focus on the effect of neighbourhood characteristics. Only few studies focus upon the school as possible context affecting delinquent behaviour of adolescents. The few studies examining the influence of the school context concentrate on the main effects of school level characteristics on youth delinquency, neglecting possible varying effects of the bond to parents, school and peers across schools (e.g., Felson et al., 1994; Welsh et al., 1999). In this chapter we want to fill this lacuna by concentrating on the school as an ecological context affecting delinquent behaviour of adolescents.

Our research aim is twofold. First, we examine to what extent school characteristics affect delinquent behaviour among adolescents, above and beyond the influence of the bond to parents, school, and peers. Second, we want to know whether and, if so, to what extent school characteristics condition the impact of the bond to parents, school and peers on delinquent behaviour. This approach seems promising as researchers studying the effect of neighbourhood characteristics on youth delinquency, found both direct effects of neighbourhood characteristics

on delinquent behaviour (e.g., Beyers et al., 2001; Sampson et al., 1997), as well as effects of the bond to parents, school and peers which vary across neighbourhoods (e.g., Hoffmann, 2002; Knoester and Haynie, 2005). Similar to neighbourhood characteristics, school level characteristics may condition the relationship between bonds to family and peers, and youth delinquency.

We will first describe our hypotheses on youth delinquency related to the bond to parents, school and peers. Next, we will propose our hypotheses related to the direct effects of school level characteristics on delinquent behaviour of adolescents. Third, hypotheses with regard to the possible conditional effects of school level characteristics with individual characteristics are proposed.

5.2 Theoretical background

5.2.1 Individual characteristics affecting delinquent behaviour among adolescents

5.2.1.1 Bond to parents

Rankin and Wells (1990, p. 142) have proposed that juveniles who are not strongly attached to their parents are also insensitive to their parents' values and opinions, and thus are more likely to behave in a way that is not approved by their parents. In social control theory it is expected that adolescents more strongly attached to their parents, meaning adolescents who have a better relationship with their parents, are less likely to commit delinquent acts. Research by Peiser and Heaven (1996) has shown that adolescents with 'negative' family relations show more delinquent behaviour than adolescents with positive family relations. Furthermore, both Sampson and Laub (1994) and Demuth and Brown (2004) have shown that adolescents more closely attached to their parents are less likely to commit delinquent acts. In general, it can be expected that the more adolescents are attached to their parents, the less they will show delinquent behaviour. This is the first hypothesis we will test in this study.

Another important indicator of the bond to parents, is the extent to which parents know about their children's activities. Both Stattin and Kerr (2000), and Fletcher, Steinberg, and Williams-Wheeler (2004) have shown that parental knowledge is a strong predictor of adolescent problem behaviour. Stattin and Kerr (2000) argued that parental knowledge is gained both by actions of parents seeking information on their children's behaviour, and by the willingness of children to provide such information. We propose that the more parents know about their children's behaviour, the less adolescents will show delinquent behaviour.

A third hypothesis we will test with regard to the bond of adolescents with their parents, is that the better adolescents are supported by their parents, the higher the willingness to provide

information to parents, the less delinquent behaviour they will show. We expect that adolescents for whom it is easy to talk to their parents, will be more supported by their parents. Therefore, they will be more likely to behave in a way approved by their parents, and thus will be less likely to show behaviour disapproved by their parents, i.e. delinquent behaviour.

5.2.1.2 Bond to school

In studies testing the effect of the bond to school on youth delinquency, different theoretical propositions and measures have been used. Some measured the bond to school indicating how much adolescents like school (Agnew, 1993; Junger and Haen-Marshall, 1997; Junger-Tas, 1992). Others used (perceived) school performance as indication of the bond to school (Agnew, 1991; Benda, 1995; Mason and Windle, 2002). Both measures have been shown to be related to delinquency: adolescents who do not like school, and adolescents who perform, or think they perform poorly at school, turned out to be more likely to commit delinquent acts. Both relationships will be tested in this research. We also test whether the relationship with classmates affects the extent of delinquent behaviour. We expect that adolescents with a better relationship with classmates will like it more at school, and are thus more attached to school. Therefore, we propose that the better the relationship with classmates, the less adolescents will commit delinquent acts.

5.2.1.3 Bond to peers

An explanation as how peers can influence adolescents' behaviour is derived from routine activity theory. Osgood et al. (1996) have proposed that hanging around with peers in the absence of social control, that is in the absence of authority figures, increases the likelihood of deviant behaviour. According to these researchers, situations conducive to deviance are mostly prevalent during leisure activities away from authority figures. They argue that the presence of peers will make deviant acts more rewarding, the absence of authority figures will reduce the potential for social control responses, and the lack of structure will leave time available for deviance. Osgood et al. (1996) have shown empirical support for the proposition that unstructured socializing with peers is strongly related to deviant behaviour, like crime, alcohol use and drug use. Osgood and Anderson (2004) have shown that socializing with peers has a significant effect on delinquency, even after controlling for demographic characteristics, like gender, ethnicity and parents' education. Moreover, even after controlling for predictors like parental monitoring, commitment to school success and attachment to parents, unstructured socializing remained directly associated with delinquency (Osgood and Anderson, 2004). In this research we will test the hypothesis that

adolescents who associate more with their friends, show more delinquent behaviour than adolescents who socialize less with their friends.

Another way in which peers can influence adolescents' behaviour is by the support they provide. We propose that adolescents for whom it is easier to talk to their friends, get more support of these friends, and will be more likely to behave in a way their friends approve. In general, people disapprove delinquent behaviour. So we hypothesize that the easier it is for adolescents to talk to their friends, the less they will show delinquent behaviour.

5.2.1.4 Demographic characteristics

Other relevant individual factors affecting adolescent delinquent behaviour are age, gender, ethnicity, educational level and home situation. There is ample evidence that delinquency rises sharply during adolescence (Moffitt, 1993), and that boys commit more crimes than girls (e.g., Rhodes and Fischer, 1993; Steffensmeier and Allan, 1996; Piquero et al., 2005). Previous research has further shown that adolescents from ethnic minorities (Junger and Haen Marshall, 1997), adolescents with a lower level of education (Williams et al., 1999; Hansen, 2003), and adolescents living with only one parent (Sampson and Laub, 1994; Anderson, 2002) are more likely to perform delinquent behaviour. Following the evidence above, we use these factors as control variables in our analyses.

5.2.2 School level characteristics affecting delinquent behaviour among adolescents

We turn to social disorganization theory to derive hypotheses relating school level characteristics to delinquent behaviour among adolescents. The origin of social disorganization theory dates back to research of Shaw and McKay ([1942]1969). They found neighbourhood characteristics and delinquency to be related. Neighbourhoods characterized by high residential mobility, by ethnic heterogeneity, and by a low economic status were found to have high levels of delinquency. Shaw and McKay explained this finding by proposing that neighbourhoods with these characteristics are characterized by community disruption, which implies a low degree of social cohesion that can be identified by low social control and weak social networks. In applying this line of reasoning to schools, we look into effects of structural school characteristics and school bonding factors on adolescent delinquency.

With regard to structural school characteristics, we propose that schools that experience greater difficulties controlling and regulating their students behaviour, will have a higher likelihood of adolescent delinquent behaviour. Previous research has shown that schools characterized by larger school size (Payne et al., 2003; Gottfredson et al., 2005) and lower teacher

experience (Stretesky and Hogan, 2005) show higher levels of school disorder. These characteristics relate to greater difficulties to monitor and control pupils' deviant behaviour. As no studies yet tested the influence of these characteristics simultaneously, we will do so. To ascertain net effects, we will also test two related indicators, namely the student-teacher ratio and the mean age of the staff. We add the teacher-student ratio as an alternative explanation for the effect of school size. It could be that at larger schools school disorder is more prevalent, because these schools are short of teachers and staff. Therefore, adding the teacher-student ratio could account for the expected impact of school size. The mean age of the staff is included, because older staff could be more experienced and hence more effective in controlling students' behaviour than younger teachers.

Following Shaw and McKay ([1942]1969), weak social networks also indicate low social cohesion within a context, and relate to higher levels of disruption. More recently, Vermey (2006) showed that in secondary school classes with a higher proportion of ethnic minority members, social boundaries between ethnic minorities and native Dutch are more profound. Meaning that ethnic cleavages in these classes are wider. Such classes can thus be characterized as less cohesive, or more disruptive, leading to the proposition that the same rationale can be applied to schools with a higher proportion students of ethnic minority background. Based upon this proposition, the hypothesis can be derived that at schools with a higher number of ethnic minorities, adolescents are more likely to commit delinquent acts. This hypothesis is supported by previous research (Felson et al., 1994; Payne et al., 2003; Gottfredson et al., 2005). Summarizing, with regard to structural school characteristics, we propose that larger school size, higher teacher-student ratio, lower teacher experience, lower mean age of staff, and higher proportion of ethnic minorities at school increase the extent of delinquent behaviour among adolescents.

School bonding factors relate to Hirschi's social control theory (Payne et al., 2003). Payne and colleagues argue that as students bonding or attachment to school increases at the school level, the level of school disorder will be lower. The school bonding factor can be seen as an indicator of school climate (Welsh et al., 1999). Higher levels of school bonding or school attachment indicate a better school climate. Previous research has shown that both better school bonding (Payne et al., 2003), and better school climate (Gottfredson et al., 2005) reduce the extent of delinquent behaviour among adolescents. For this study we use two indicators of school bonding: school climate and school achievement. We propose that at schools with a better school climate, that is where in general the level of school attachment is higher, all students are more strongly withheld from delinquent behaviour than at schools where the climate is less, regardless their individual level of school attachment. With regard to school achievement, we

propose that adolescents at schools which perform better, i.e. schools with higher mean grades, and higher success rates, i.e. schools with a higher percentage of students passing their exams, show less delinquent behaviour than adolescents at schools which perform less, regardless of their individual school performance.

5.2.3 School level characteristics as moderators of the relation between individual characteristics and delinquent behaviour

Crosnoe (2004) explored the interaction between bonds of adolescents to parents, and school environment, and its effect on academic achievement. His results indicated that adolescents who are not close to their parents, get less from going to schools with strong bonds between students and teachers. This means that a positive relationship of adolescents with their parents has a stronger effect on academic achievement in schools which are characterized by better relationships between students and staff. This implies in a more general proposition that factors enhancing positive behaviour are more effective in advantaged contexts than in disadvantaged contexts. Extending this reasoning to delinquent behaviour, this could mean that characteristics refraining adolescents from negative behaviour are more effective in advantaged contexts than in disadvantaged contexts. An explanation for this proposition can be that negative stimuli are more prevalent in disadvantaged contexts, which will reduce the effectiveness of control over adolescents' delinquent behaviour in disadvantaged contexts, even more so than in advantaged contexts. The same rationale can be applied to the influence of 'crime-inducing' characteristics: in disadvantaged contexts, delinquent behaviour is less disapproved than in advantaged contexts, which reduces the threshold to perform such behaviour.

Hence, for our study we propose that the effect of the bond to parents, school and peers to decrease adolescent delinquent behaviour will be more effective at advantaged schools than at disadvantaged schools. Furthermore, we expect characteristics positively affecting delinquent behaviour to have a stronger effect on delinquent behaviour of adolescents at disadvantaged schools than at advantaged schools. For this research this means that we expect that association with peers affects delinquent behaviour more strongly for adolescents at disadvantaged schools than for adolescents attending advantaged schools. These propositions have never been tested in previous research. Hence, by testing such hypotheses, knowledge is gained in the way schools as context can influence, directly or indirectly, the behaviour of its students.

5.3 Methods

5.3.1 Data

To test our assumptions in this research we use data from the WHO-study 'Health Behaviour in School-Aged Children (HBSC)' gathered in 2001. The HBSC-study addresses health behaviours, health and its social context in children and adolescents in Europe and North America (Currie et al., 2001). For the purpose of our study we focus upon Dutch adolescents at secondary school (first four years). In HBSC, a two-stage random sampling procedure is used (Currie et al., 2001). First, out of a list of all schools in the Netherlands, a random sample of schools was selected proportionally with urbanization strata. Secondly, within each school, one class from every grade (1 – 4) was selected randomly from a list of all classes provided by every participating school. Within classes, all students were drawn as respondents. This procedure resulted in a sample of 5730 students from 66 schools. The response rate of students was 95 %, non-response was mainly caused by sickness leave. The response rate of schools was 45 %. Most important non-response reasons had to do with lack of time, or other research going on. All data were collected by means of questionnaires, which were distributed in classes and administered by teachers during a lesson.

The individual level data of the HBSC-study was expanded by school level characteristics gathered using the (Dutch) website 'Education in Numbers'. This website provides information about primary and secondary schools, concerning structural school characteristics, like school size, exam grades and teacher information. In the Netherlands most schools have different locations, and are part of a larger school organization. If available, we used information of the school at the location which participated in the HBSC study, otherwise we used the information of the total school. School level characteristics lacked of only two schools participating in the HBSC study. Our final dataset comprises of 5,567 students within 64 schools.

5.3.2 Measures

5.3.2.1 Individual level characteristics

Delinquent behaviour of adolescents has been measured using the Youth Self Report (YSR). The YSR is a questionnaire designed to be completed by adolescents, ages 11 - 18 years, and contains 101 problem items. These items are scored as follows: 0 = not present, 1 = somewhat or sometimes true, 2 = very true or often true on the basis of the preceding six months. The YSR can be scored on a total problem score, but also on eight syndrome scales, of which delinquent behaviour is one. The YSR delinquency subscale contains eleven items assessing behaviour

including not feeling guilty, having 'bad' friends, lying, hanging around with older peers, running away from home, setting fires, stealing from parents, stealing outside home, swearing, being truant and using alcohol or drugs. Each item is scored on a three-point scale (0 = not true, 1 = somewhat true, 2 = often true). The reliability and validity of the YSR are documented by Achenbach (1991) and translated and validated in Dutch by Verhulst, Van der Ende and Koot (1997). To minimize non-response, regression imputation was used for calculating scores on the syndromes of the YSR (see Vollebergh et al., 2006). Full scores were computed for 85.5 % of the respondents who had less than eight missing items on all 101 items of the YSR, as this is considered a maximum number of missing items for computation of a total problem score (Verhulst et al., 1997). Vollebergh et al. (2006) conducted bivariate and multivariate regression analyses of demographic factors on YSR non-response to determine whether the non-response resulted in a selective response group. Only gender associated significantly with non-response, indicating that boys are more likely to have missing scores than girls.

Three indicators of the bond to parents are used in this study: *attachment to parents*, *parental knowledge*, and *parental support*. *Attachment to parents* has been measured by asking adolescents to mark how happy they feel at home. Response categories ranged from 0 to 10, a higher score represents higher attachment to parents. *Parental knowledge* is constructed by using items asking how much parents know about the respondent's behaviour. These items were posed for mothers and fathers separately. Each question has three answer categories: they know a lot, little, or nothing. When a respondent lives with only one parent, the final scale has been constructed using the items relating to that particular parent only. The higher the score, the more adolescents say their parents know about their behaviour. To measure *parental support* we used items asking respondents how easy it is for them to talk to their mother and father (two separate items) about matters they worry about. Respondents could choose between four responses, namely: very easy, easy, hard, or very hard. Again, when a respondent lives with only one parent, the final scale has been constructed using the item relating to that particular parent only. The higher the score, the more adolescents receive support of their parents.

Regarding the bond of adolescents with school, we used three measures: *school satisfaction*, *school performance*, and the *relationship with classmates*. *School satisfaction* has been measured by the question: how do you like school at the moment? Answer categories for this question are: I like it a lot, I like it a bit, I don't like it, I don't like it at all. A higher score means more school satisfaction. For *school performance* we used an item indicating perceived school performance. Adolescents were asked how their teacher evaluates their school performance in comparison with their classmates. This item contains four possible responses: very good, good, average, less than

average. A higher score indicates better perceived school performance. The final measure of the bond to school is the *relationship with classmates*. This scale is based upon three items, classmates enjoy being together, classmates are friendly, and classmates respect me, with five answer categories: totally agree, agree, not agree/not disagree, disagree, totally disagree. The final scale is constructed by the mean of the three items. A higher score represents a better relationship with classmates.

With regard to peer characteristics we distinguish two measures: *peer association* and *peer support*. *Peer association* represents the amount of time adolescents spend with their friends. This measure is based upon two items: how often are you together with friends 1) after school, and 2) in the evening? (measured as the number of days). A higher score indicates more peer association. As we hypothesize that the more adolescents associate with their friends, unstructured and unsupervised, we would like to know at which places adolescents meet their peers. However, we do not have information about the place where adolescents meet their friends. Hence, our measure of peer association is not an ideal representation of unstructured peer socialization as proposed by Osgood et al. (1994). *Peer support* has been measured by asking respondents how easy it is for them to talk about things they worry about with their best friend, male friends, and female friends. The final scale has been constructed by the mean of these items. The higher the score, the more support adolescents receive of their friends.

The demographic variables we control for in this chapter are: *age*, *gender*, *ethnicity*, *education*, and *home situation*. *Age* has been measured in years, and varies from 12 to 17 year. For each adolescent we subtracted 12 years of his/her age. Hence, the final measure of *age* varies from 0 (12 years old) to 5 (17 years old). With regard to gender, girls were coded a 1, and boys 0. *Ethnicity* is represented by six categories, that is Dutch, Surinamese, Antillean, Turkish, Moroccan, mixed and others. This measure is based upon the country in which the adolescent's parents are born. When both parents are born in the same country, the adolescent is placed in that particular category. The category mixed contains those adolescents of whom one parent is born in the Netherlands, and the other abroad. Adolescents are placed in the category others, when their parents are born in different countries, none being the Netherlands, or in the same country, but other than the above categories. The variable measuring *education* represents the level of education the adolescent attends at the time of the interview. Categories of educational level are: lower vocational training, lower general education, intermediate general education and pre-university education. By *home situation* we take into account with whom the adolescent lives at home. Categories are: with both parents, only with one parent, with one parent and new partner of the

parent and other home situation. When adolescents do not live with both parents, we do not know what the reason is why the parents do not live together anymore.

5.3.2.2 School level characteristics

We distinguish two types of school contextual characteristics: structural school characteristics, and school bonding factors. With regard to the structural school characteristics, we constructed five measures: *school size*, *teacher-student ratio*, *work experience*, *age staff*, and *ethnic composition*. *School size* is represented by the number of students. In the analysis the log score of this measure is used. *Teacher-student ratio* is measured by the number of students per fulltime working member of the school staff. *Work experience* is represented by the percentage of the staff who works at the particular school less than one year. *Age staff* is represented by the mean age of the staff of the school. The percentage of students of cultural minority origin at school measures *ethnic composition*.

The two school bonding factors we distinguish in this study are *school climate* and *school achievement*. *School climate* has been measured by aggregating the mean of two individual level measures of the bond to school, namely school satisfaction and the relationship with classmates, to the school level. To measure *school achievement* two indicators are used: the percentage of students passing their final exams and the mean grade of the central exam. The mean of the standardized scores of the two above indicators representing school achievement are used as the final scale of *school achievement*.

Table 5.1: Descriptive characteristics of delinquent behaviour and the social bond and school level characteristics

	N	Minimum	Maximum	Mean	Std. dev.	Alpha
Delinquent behaviour	4625	0.00	21.00	3.86	2.99	
Attachment to parents	5474	0.00	10.00	8.70	1.55	
Parental knowledge	5512	1.00	3.00	2.58	0.39	0.85
Parental support	5493	1.00	4.00	3.16	0.68	
School satisfaction	5453	1.00	4.00	3.08	0.84	
School performance	5416	1.00	4.00	2.56	0.71	
Relationship with classmates	5458	1.00	5.00	3.88	0.72	0.74
Peer association	5387	0.00	6.00	2.48	1.63	0.65
Peer support	5402	1.00	4.00	3.08	0.66	0.83
School size	64	153.00	2871.00	899.73	499.81	
Teacher-student ratio	64	4.51	17.28	13.69	2.35	
Teacher experience	64	4.10	22.20	10.99	3.92	
Age staff	64	41.10	48.90	45.39	1.51	
Ethnic composition	64	0.00	76.30	10.76	16.50	
School atmosphere	64	3.51	4.36	3.83	0.17	
School success	64	-3.43	1.65	0.00	0.85	

5.3.3 Analysis

Individuals are nested within schools in the dataset used for this research. In general, it is assumed that individuals within the same context resemble each other more than individuals from different contexts. Using multilevel analysis accounts for this dependence of individuals in the same contexts (Snijders and Bosker, 1999). In the analysis, all independent variables, except the categorical variables, are centered around the mean. In order to answer our research questions and test our hypotheses, we estimated different models for delinquent behaviour. All models improved significantly in relation to previous models, as can be seen in Table 5.2.

Table 5.2: Model of fit measures and variance in youth delinquency at individual and school level

Model	Deviance	Δ Deviance	Df	P-value	Individual variance	School variance
0 Single level null model	23241.8	-	-	-	8.91	-
1 Two level random intercept model	23206.3	35.5	1	< 0.01	8.74	0.18
2 + demographic characteristics	21958.6	1247.7	15	< 0.01	7.99	0.05
3 + family, school and peer characteristics	19344.6	2614.0	8	< 0.01	6.03	0.02
4 + school context characteristics	18797.9	546.7	2	< 0.01	6.06	0.01
5 + random slopes	18750.2	47.7	5	< 0.01	5.89	0.02
6 + cross-level interactions	18747.2	3.0	1	0.08	5.90	0.02

The first models we estimated were set to determine whether schools differed in the extent of delinquent behaviour among adolescents. In Model 0, only individuals were allowed to differ. In Model 1 also variance at the school level was allowed, to test whether significant differences in youth delinquency exist between schools. In Model 2, we added the demographic characteristics to the analysis. The characteristics representing the bond to parents, school and peers were added in Model 3. In Model 4, we added those school level characteristics which showed to have a significant effect on delinquent behaviour, eliminating those characteristics which do not have a significant, separate effect on youth delinquency. For estimating Model 5, we tested whether the effects of the characteristics regarding the bond to parents, school and peers on adolescent delinquency differed between schools. Results showed that the effect of attachment to parents and of parental knowledge differed between schools. Hence, in Model 5, we allowed the effect of these two characteristics on youth delinquency to differ between schools. In order to estimate our last model, we expanded Model 5 with the interactions between the school level characteristics, and attachment to parents and parental knowledge separately. In the eventual model, Model 6, only the cross level interaction effects were included which showed to be

significant. Characteristics of the different models are shown in Table 5.2. The interesting results presented in this table are discussed in the next section.

5.4 Results

From Table 5.2, it can be read that by expanding Model 0 with variance at the school level, the deviance was significantly reduced, meaning an improvement of the model, thus suggesting that differences in delinquent behaviour exist between schools. Furthermore, we learn from Model 1 that approximately 2 % ($\rho = 0.18 / (8.74 + 0.18) = 0.02$) of the total variance can be attributed to the school level. Hence, most of the variance in delinquent behaviour is due to differences between individuals. Only a small amount can be attributed to the school level. Even more interesting is that by adding the demographic characteristics to the analysis (Model 2) most of the variance at the school level is explained (school variance decreases from 0.18 to 0.05). This result implies that a large part of the differences in delinquent behaviour between schools is due to differences in schools' composition, meaning that schools which show a higher extent of delinquent behaviour are attended by more pupils with characteristics that induce the likelihood of committing delinquent acts.

In Model 3, the characteristics measured at the individual level, i.e. the bond to parents, school, and peers, were included in the analysis. This step further improved the fit of the model, and explained the school variance even further. The variance at the individual level is explained for a reasonable part by including the family, school and peer characteristics: it decreases from 7.99 to 6.03. The different steps of adding the school level characteristics to the model (Model 4, 5 and 6) all lead to a significant improvement of the fit of the estimated model. Therefore, we can conclude that school context does matter with regard to the explanation of youth delinquency, although its influence is rather small. More specifically, we found both evidence of direct effects of the school context, and of the conditional effect of the school context on the relationship between social bond characteristics and youth delinquency. In the next section the results are discussed with regard to the posed hypotheses in the previous sections.

5.4.1 Main effects

To answer our research questions, we look into the results of Model 4 and 6. These results are shown in Table 5.3. With regard to the bond to parents, the results support our hypotheses. We expected that adolescents more strongly attached to their parents, whose parents know more about their behaviour, and who get more support from their parents, actually show less

delinquent behaviour. Of the characteristics representing the bond to school, only the relationship with classmates did not affect delinquency significantly. This is not in line with our hypothesis, as we expected to find a negative effect of this variable. The effect of peer association is as we proposed: the more adolescents spend time with their friends, the more delinquent behaviour they show. Peer support showed a positive effect on adolescent delinquency, meaning that the easier adolescents can talk to their peers, the more delinquent behaviour they show. This is opposite to our expectation. Perhaps adolescents more attached to their peers, are less dependent on their parents. Thus, they will act more according to the norms of their peers instead of to the norms of their parents.

Regarding demographic controls, we found that girls show as expected less delinquent behaviour than boys, and adolescents at higher levels of education show less delinquent behaviour than adolescents at lower educational levels. Of the ethnic groups, both the Turkish and the Moroccans show less delinquent behaviour than Dutch adolescents. These results seem surprising, considering recent research in the Netherlands. In this research, using official police statistics in the Netherlands, it was shown that youth from a Turkish and Moroccan background were more likely to become registered as a crime suspect than Dutch adolescents, even after controlling for relevant background characteristics, like for example age, gender and school dropout (Blom et al., 2005). An explanation for the difference between self-report measures of youth delinquency and official police statistics for youth with a Turkish or Moroccan background, might be that Turkish and Moroccan adolescents are more reluctant to admit delinquent activities than Dutch youth (Junger, 1989; Junger and Haen Marshall, 1997). However, this means that we have to be careful with statements about different ethnic groups.

Testing the main effects of the school level characteristics, we first examined the effect of the different school level indicators by adding them separately to Model 3. Only two indicators showed to have a significant effect on youth delinquency: school size and the teacher-student ratio. Adding these characteristics simultaneously to Model 3, only a significant positive effect of the teacher-student ratio on delinquent behaviour of adolescents was found. This positive effect indicates that the higher the number of students per staff member at school, the more adolescents show delinquent behaviour. This is in line with our expectation that at schools where controlling students' behaviour is more difficult, delinquent behaviour will be more prevalent. Probably, at schools with higher teacher-student ratio, staff is less effective in controlling pupils' behaviour, and thus in preventing adolescents from committing delinquent acts. School size did not show to have a significant effect on youth delinquency anymore, when added simultaneously with teacher-student ratio to the analysis.

Table 5.3: Multilevel regression analysis; dependent variable is delinquent behaviour ($n_{\text{school}} = 64$; $n_{\text{individual}} = 4,050$)

	Model 4	Model 6
<i>Fixed effects</i>		
Intercept	4.15**	4.17**
Attachment to parents	-0.27**	-0.27**
Parental knowledge	-1.59**	-1.62**
Parental support	-0.13†	-0.12†
School satisfaction	-0.40**	-0.39**
School performance	-0.34**	-0.33**
Relation classmates	-0.08	-0.09
Peer association	0.47**	0.46**
Peer support	0.24**	0.25**
<i>Demographic characteristics</i>		
Age	0.04	0.02
Age squared	0.02	0.03
Gender (0=male)	-0.37**	-0.38**
Ethnicity (ref. Dutch)		
Turkish	-0.88**	-0.78**
Moroccan	-0.73**	-0.78**
Surinamese	-0.24	-0.24
Antillean	0.58	0.56
Mixed	0.11	0.08
Other	-0.18	-0.14
Educational level (ref. lower vocational training)		
Lower general education	-0.05	-0.07
Intermediate general education	-0.12	-0.11
Pre-university education	-0.27*	-0.25*
Home situation (ref. both parents)		
One parent	0.06	0.05
One parent + new partner	0.22	0.22
Other home situation	0.61†	0.61†
<i>School context characteristics</i>		
School size (log)	0.06	0.02
Teacher-student ratio	0.04*	0.04†
<i>Random effects</i>		
Attachment to parents		0.03*
Parental knowledge		0.77**
<i>Cross-level interaction</i>		
Parental knowledge * teacher-student ratio		-0.11†

†p < .10; *p < .05; **p < .01

5.4.2 Conditional effects

The second aim of this chapter is to explore to what extent school level characteristics condition the impact of the bond to parents, school and peers on delinquent behaviour. We proposed that the effects of characteristics that decrease the likelihood of delinquency are stronger at advantaged schools, and that the influence of crime enhancing characteristics is stronger at disadvantaged schools. For testing these propositions, we first tested whether the effects of the characteristics regarding the bond to parents, school, and peers on adolescent delinquency differed between schools. From the results reported in Table 5.2 we know that the effects of attachment to parents and of parental knowledge differed in strength between schools. Then the

question is at which schools do these characteristics, i.e. attachment to parents and parental knowledge, have a stronger effect, and at which schools are the effects of these characteristics less pronounced? To answer this question, interaction effects between, on the one hand, attachment to parents and parental knowledge, and, on the other hand, the school level characteristics were included in the model. We first tested each interaction effect between attachment to parents and parental knowledge, and the school level characteristics separately by adding them to Model 5. Only the interaction effect between parental knowledge and teacher-student ratio turned out to be significant. Only this effect was included in Model 6.

The results of Model 6 indicate that the negative effect of parental knowledge on youth delinquency is stronger at schools with a higher teacher-student ratio. At schools where control over students is more difficult, because of a lack of staff in relation to students, the knowledge of parents about their children's behaviour is more important in refraining these children from delinquent behaviour. This effect is contrary to our expectations that the effect of the bond to parents, school and peers to decrease adolescent delinquent behaviour will be more effective at advantaged schools than at disadvantaged schools.

5.5 Conclusion and discussion

In criminological research, only little attention has been paid to the influence of the school context on delinquent behaviour of adolescents. In this study we tried to fill this lacuna by examining which school level characteristics affect youth delinquency, above and beyond the influence of the bond of adolescents to parents, school and peers. Furthermore, we wanted to know to what extent school level characteristics condition the impact of the bond to parents, school and peers on adolescent delinquent behaviour.

Our first important finding is that differences in youth delinquency between schools are for a large part due to differences in school composition. Controlling for demographic characteristics of adolescents (like age, gender, ethnicity and educational level), explained most of the differences between schools regarding youth delinquency. Hence, schools which show a higher level of youth delinquency are attended by adolescents who are more likely to commit delinquent acts. However, not all variance in youth delinquency at the school level could be explained by composition effects.

We did find some evidence that school level characteristics affected youth delinquency regardless of individual characteristics, like the bond to parents, school and peers, and demographic characteristics. We proposed that both structural school characteristics and school

bonding factors would affect youth delinquency. With regard to structural school characteristics, we proposed that schools that experience greater difficulties controlling and regulating its students behaviour, will have a higher likelihood of adolescent delinquent behaviour. Regarding school bonding factors, we proposed that as, at the school level, students bonding to school increases, the level of youth delinquency will be lower. In this contribution we only found evidence for the first proposition regarding structural school characteristics. More specifically, our results indicated that only the teacher-student ratio affected delinquent behaviour of adolescents. The more students per staff member at school, the more likely adolescents were to show delinquent behaviour. The teacher-student ratio was added to this research as an alternative explanation for the influence of school size on youth delinquency, a relationship which was found in previous research (Gottfredson et al., 2005; Payne et al., 2003). Testing the effects of school size and teacher-student ratio simultaneously, showed that only teacher-student ratio affected youth delinquency significantly.

Our results suggest that the teacher-student ratio is a more specific indicator of the way schools influence their students delinquent behaviour than school size. Mostly, the assumption that larger schools have more problems in controlling and regulating the behaviour of its students than smaller schools, because at larger schools students are more anonymous, and thus are less likely to be addressed to their behaviour. The results in this dissertation, however, suggest that a lack of control is more problematic at schools characterized by low numbers of staff members per student. Lack of control at these schools seems thus to exist, because the staff at these schools are with less persons to control the behaviour of all students. It thus seems that at schools, which have less opportunities to control their students' behaviour, students receive less supervision on their behaviour, and thus are more likely to show negative behaviour, like delinquency. Future research studying school as context in the explanation of delinquent behaviour of adolescents, should focus on characteristics that relate to opportunities to control the behaviour of students.

With regard to our second aim, to explore whether school level characteristics condition the relationship of the bond to parents, school and peers with youth delinquency, we found only little evidence for such conditioning effects. First, we found that the effect of attachment to parents and parental knowledge differed between schools. Secondly, our results showed that only one interaction effect reached significance. It appeared that the negative effect of parental knowledge on youth delinquency was stronger for adolescents attending schools with a higher teacher-student ratio than for adolescents at schools with lower teacher-student ratio. This

finding is in contrast with our expectation that the effects of the bond to parents would be stronger in advantaged than in disadvantaged schools.

An explanation why parental knowledge has a stronger effect on youth delinquency at schools with a higher teacher-student ratio than at schools with a lower teacher-student ratio, might be that parents try to indirectly control their children's behaviour, when control at school is insufficient. If parents know that at school control and oversight on their children is lacking, they might keep a closer eye on their children by keeping informed about their behaviour when the children are not at home. In this way, parents might compensate for the lack of control at the school-level.

Following the research of Osgood et al. (1996), we proposed that adolescents who socialize more with their friends in unstructured and unsupervised situations, are more likely to commit delinquent acts. However, we had only available information about how often adolescents spent time with their peers. We did not have information about places where they meet their friends. Thus, our measurement of peer association did not represent the theoretical concept of unstructured socializing fully. Despite this disadvantage, we did find clear evidence that the more time adolescents spend with their peers, the more delinquent behaviour they show. Future research must point out what happens with this relationship when it is also possible to account for the places where adolescents meet their friends. By having information of adolescents about both the time they spent with friends, and the places where they meet their friends, Osgood et al.'s proposition about unstructured socializing can be more accurately tested.

Regarding the bond to peers, we also proposed that the better adolescents could talk to their friends, the less delinquent behaviour they would show. Our results, however, showed this relationship to be positive, a result which also have been found in other research (e.g. Buysse, 1997). Apparently adolescents for whom it is easier to talk to their friends show more delinquent behaviour. On the other hand, adolescents for whom it is easier to talk to their parents, show less delinquent behaviour. These results indicate that support received from parents reduces the likelihood of committing delinquent behaviour for adolescents, whereas support received from friends induces such behaviour. Perhaps, adolescents with a better relationship with their parents will get more support of them, and will thus be more likely to act in a way approved by their parents. Whereas adolescents who do not have a good relationship with their parents, will probably turn to their friends for support. Among these friends delinquent behaviour could be less disapproved than by parents, and thus these adolescents will be more likely to show delinquent behaviour.

What do these results mean for the propositions we made in this dissertation? We proposed that individual characteristics refraining adolescents from delinquent behaviour would be stronger at advantaged schools than at disadvantaged schools. With regard to individual characteristics enhancing delinquent behaviour, we expected these characteristics to have a stronger effect at disadvantaged schools than at advantaged schools. However, our results do not support this line of reasoning. The only significant interaction effect was contrary to our expectations: the negative effect of the knowledge of parents of their children's behaviour was stronger at disadvantaged schools than at advantaged schools. Therefore, on the basis of this study we have not found clear evidence for these propositions. Our results, however, do indicate that school context matters directly with regard to influencing adolescent's behaviour. We found support for the claim that adolescents at schools, at which it is more difficult to control and regulate students' behaviour, show a higher extent of youth delinquency, aside from their bond to parents, school and peers. Furthermore, our results support the idea that school context conditions the effect of the bond to parents, school and peers on youth delinquency. However, to be able to pronounce more valid propositions about this conditioning effect, more research is needed. Improvements can be made in the way school level characteristics are measured. In this study, we only had secondary data available. In future research more direct measures are needed which more closely represent the way schools control the behaviour of their students.

Chapter 6

Conclusion and discussion

The main aim of this dissertation was to examine the influence of different social-ecological contexts on youth delinquency in the Netherlands. In the previous chapters an introduction to this research problem was given. In four empirical chapters we tested different elements of the way in which different social-ecological contexts affect delinquent behaviour of adolescents. In this final chapter, first, we will summarise the scientific relevance of this research (section 6.1). Second, we will highlight the main findings related to the direct and conditional influence that different social-ecological contexts exert on youth delinquency (section 6.2 and 6.3). Third, scientific progress made by the results of this dissertation will be discussed, and new research questions are raised (section 6.4). Lastly, societal relevance and policy recommendations of these research findings will be discussed (section 6.5).

6.1 Introduction: recapitulation of research questions

The way and the extent to which social-ecological contexts affect delinquent behaviour of adolescents, above and beyond individual characteristics, has received limited attention in the Netherlands, which is surprising considering the priority of this subject in Dutch policies. Most research studying youth delinquency has focused on explanations related to characteristics of individuals, parents, or peers derived from classic criminological theories, like social control theory (Hirschi, 1969) and differential association theory (Sutherland, 1947). Social-ecological theory, however, proposes that the relation between risk factors and behavioural outcomes depends on the context in which those risks are experienced (Bronfenbrenner, 1986). In this dissertation we have examined the influence of different social-ecological contexts on youth delinquency in the Netherlands. The focus was not only on the possible direct influence that social-ecological contexts can exert on delinquent behaviour of adolescents, but also on the possible conditioning effects that social-ecological contexts can have on the relation between the closeness to parents and peers, and youth delinquency.

The intention of this dissertation was thus to learn how social-ecological contexts can add to the explanation of youth delinquency. This field of study has received little attention in (Dutch) criminological research, but is of great interest for three reasons. First, propositions can be derived from classic criminological theories about the way in which social-ecological contexts can add to the explanation of youth delinquency. Second, previous research has shown that

social-ecological contexts do play a role in understanding youth delinquency. Third, the (neglected) availability of contextual data makes it possible to simultaneously test the influence of different social-ecological contexts and individual characteristics, such as the relationship with parents and peers, on youth delinquency. The central research questions of this dissertation were:

- 1) To what extent and in which way do social-ecological contexts affect youth delinquency in the Netherlands, above and beyond individual characteristics, such as the relationship with parents and peers?
- 2) To what extent and in which way do social-ecological contexts condition the relationship between individual characteristics, such as the bond between adolescents and their parents and peers, and youth delinquency in the Netherlands?

6.2 Empirical findings: the direct influence of social-ecological contexts

6.2.1 City

By describing theories and previous research on city differences in crime rates in chapter 2, we have shown that there are ample theoretical reasons to consider the city as an influential context in the study of differences in delinquency between adolescents. Two main theoretical approaches of these studies are social stratification and social control (Ousey, 2000). The social stratification perspective implies that crime relates to economic conditions: communities with high crime rates tend to be low in economic status (Agnew, 1999). The main perspectives within this approach are the absolute deprivation model and the relative deprivation model. According to the absolute deprivation model, crime is more likely to prevail in cities with low income levels (Ousey, 2000). Thus, absolute deprivation theory assumes implicitly that in cities with low income levels crime is less readily rejected as a means of satisfying one's needs. The relative deprivation model focuses on the effect of income inequality on city crime rates instead of the effect of absolute levels of poverty. The rationale behind this approach is that income inequality undermines the social integration of communities by widening the gaps between different (income) groups, which can generate strain or frustration, which in turn increases crime (Agnew, 1999).

The other main theoretical approach is the social control perspective that has been derived from social disorganisation theory developed by Shaw and McKay ([1942]1969). They found neighbourhood characteristics and delinquency to be related. Neighbourhoods characterized by high residential mobility, by ethnic heterogeneity, and by a low economic status were found to have high levels of delinquency. Shaw and McKay explained this finding by

proposing that neighbourhoods with these characteristics are characterized by community disruption, which implies a low degree of social cohesion, that can be identified by low social control and weak social networks. Originally, social disorganisation theory has been developed to explain differences in crime rates between neighbourhoods. Propositions derived from social disorganisation theory have also been used to explain differences in crime rates between cities (Miethe et al., 1991).

Using data from 11 cities in the Netherlands, we performed multilevel analyses in chapter 2 to test whether variance in youth delinquency exists at city level, above and beyond variance in youth delinquency at neighbourhood and individual level. The results showed considerable variance at the city level. To ascertain that these differences were not due to differences in the composition of the adolescent population, we controlled in the analyses for composition effects. Controlling for these composition effects, however, did not change the observed variance at the city level. In chapter 2, we have also found that differences in youth delinquency between cities could not be explained by different modes of data collection, as was expected on the basis of previous research (Naplava and Oberwittler, 2002), showing that home questionnaires could induce an under representation of delinquent behaviour.

These results suggested that cities are more important contexts for the explanation of youth delinquency than neighbourhoods, at least in the Netherlands. The results indicated that neighbourhoods differ only marginally in the extent of youth delinquency. Results in chapter 2 further indicated that by ignoring the city level, variance at neighbourhood level could be overestimated, which is an interesting finding as we consider research using data from different neighbourhoods across different municipalities, focussing on the effect of neighbourhood characteristics and neglecting higher-level determinants, like the studies of Sampson and Groves (1989) and Wittebrood (2000). Sampson and Groves found that in more ethnically heterogeneous neighbourhoods higher rates of violent offending. Wittebrood found that structural neighbourhood characteristics (i.e. low economic status, high ethnic heterogeneity and high residential mobility) affect violent victimization. In previous research studying city differences in crime rates, the same phenomena, constructed at the city level, have been used to explain city differences in crime rates. Empirical evidence has shown that these characteristics explain city differences in crime rates (Blau and Blau, 1982; Logan and Messner, 1987; Land et al., 1990; Miethe et al., 1991). This raises the question whether the results of Sampson and Groves and of Wittebrood on the explanatory power of neighbourhood characteristics would still hold when the city level (or municipality level) is included as a unit of analysis. Including this higher level makes it possible to simultaneously test the influence of different determinants derived from social

disorganization theory, located at the city level as well as at the neighbourhood level, to disentangle whether these determinants at city level and at neighbourhood level have separate effects on youth delinquency, above and beyond individual level effects.

In chapter 3, we used social disorganisation theory to explain differences in youth delinquency between cities and neighbourhoods. In this section, the results regarding the influence at city level are described. In the next section, we will describe the direct influence of social disorganisation theory at neighbourhood level.

From social disorganisation theory hypotheses it was derived that adolescents show more delinquent behaviour in cities characterised by low economic status, high ethnic heterogeneity and high levels of family disruption. These phenomena are reported as the most strong and stable determinants of crime at city and neighbourhood level (Pratt, 2001). In this dissertation we simultaneously tested the relationships of these indicators measured at city and neighbourhood level and youth delinquency. In this way, it was possible to demonstrate whether city characteristics affect individual levels of youth delinquency, above and beyond neighbourhood characteristics, controlling for individual level characteristics.

Using data from different cities in the Netherlands, we have found that only the percentage one-parent families living in the city significantly affected delinquency of adolescents. In contrast to findings in the United States (e.g., Balkwell, 1990; Miethe et al., 1991), we have found no support for the effect of socio-economic status and ethnic heterogeneity on delinquent behaviour of adolescents. In conclusion, results in chapter 2 and 3 have shown that city level is an important social-ecological context in the explanation of youth delinquency. At city level, we found that the proportion of one-parent families was the most important determinant of youth delinquency. In section 6.4 the scientific implications of this finding will be discussed.

6.2.2 Neighbourhood

Besides explaining differences in youth delinquency between cities in chapter 3, we also tested the influence of neighbourhood characteristics. Based on social disorganisation theory, the same propositions have been derived at city and neighbourhood level. Hypotheses tested in this chapter read that in neighbourhoods characterised by low economic status, high ethnic heterogeneity and high levels of family disruption, adolescents show more delinquent behaviour. The results, first, indicated that neighbourhoods differ only marginally in the extent of youth delinquency. With regard to the way in which neighbourhood characteristics affect youth delinquency, our results were the same as the ones on the city level: it was found that contextual disadvantage affected youth delinquency. Adolescents living in neighbourhoods characterized by

higher levels of contextual disadvantage (i.e. low economic status, ethnic heterogeneous and high level of family disruption), showed higher levels of delinquent behaviour, regardless of their individual situation. Detailed analyses showed that from the indicators used to construct contextual disadvantage, again, only the percentage one-parent families living in the neighbourhood significantly affected delinquent behaviour of adolescents. Other neighbourhood characteristics, like low socio-economic status and ethnic heterogeneity, appeared to be non-significant. Hence, in this dissertation we found that the percentage one-parent families was the decisive determinant of youth delinquency, both at city and neighbourhood level.

In chapter 4, we focused on the direct and conditional influence that neighbourhood characteristics can exert on youth delinquency. We have limited our attention to only one city (i.e. Nijmegen), because comparable individual level data for testing the conditional effects of neighbourhood characteristics were not available for all 11 cities subject in chapter 3. The results regarding the conditional effects are summarised and discussed in section 6.3.1.

From social disorganisation theory, the proposition has been derived and tested that adolescents in disadvantaged neighbourhoods are more likely to commit delinquent acts than adolescents in advantaged neighbourhoods, controlling for relevant social control and peer characteristics. Following previous findings on social disorganization theory at neighbourhood level (e.g., Peeples and Loeber, 1994; Beyers et al., 2001), neighbourhoods are considered to be disadvantaged when characterized by high level of ethnic minorities, low socio-economic status, high residential mobility and high level of one-parent families. In comparison with analyses in chapter 3, residential mobility has been added to the analyses in chapter 4, due to the fact that information about this characteristics was only available at neighbourhood level.

Using data of 12 to 17 year old adolescents, derived from the Nijmegen Youth Monitor 1999, an interesting finding, in line with the findings in chapter 3, was that neighbourhoods did not differ in the extent of youth delinquency. That is, individuals within the same neighbourhood did not resemble each other more than individuals living in different neighbourhoods. For the Dutch situation this is not so surprising considering the research of Rovers (1997) and Schneiders et al. (2003), who also found only small differences between neighbourhoods. In Germany, Oberwittler (2004) also found only small differences between neighbourhoods. In comparison with American research our results are more surprising, because in the U.S. neighbourhoods seem to differ more. It might be the case that in the Netherlands, and maybe also in other European countries, neighbourhoods differ less than in the U.S. regarding youth delinquency.

Analyses in chapter 4 showed that neighbourhood characteristics did not have a significant, direct relationship with youth delinquency. These findings contradict with the findings

in chapter 3 that showed that percentage one-parent families in the neighbourhood affected delinquent behaviour of adolescents. An explanation for these different results might be that in chapter 4 also characteristics representing the bond between adolescents and their parents and peers are included in the analyses. It might be that these characteristics mediate the relationship between family disruption and youth delinquency, even more because family disruption at individual level also did not affect youth delinquency directly, when the bond between adolescents and their parents and peers are included in the analyses. Thus, the explanation could be that family disruption affects the relationship with parents and peers, which in turn can affect delinquent behaviour.

6.2.3 School

We have tested the direct influence of school-level characteristics on youth delinquency in chapter 5. Hypotheses have been derived from social disorganization theory (Shaw and McKay, [1949]1969) relating school level characteristics to delinquent behaviour of adolescents. We applied these hypotheses to school contexts, and tested the effects of structural school characteristics and school bonding factors on adolescent delinquency.

With regard to structural school characteristics, the hypotheses tested in chapter 5 with regard to structural school characteristics read that larger school size, higher teacher-student ratio, lower teacher experience, lower average age of staff and a higher proportion of ethnic minorities at school, increase the extent of delinquent behaviour of adolescents. The proposed mechanism behind these hypotheses is that schools characterised by these structural characteristics experience greater difficulties controlling and regulating their students behaviour, and therefore adolescents attending such schools will show a higher likelihood of delinquent behaviour.

School bonding factors are related to Hirschi's social control theory (Payne et al., 2003). We consider school bonding to be an indicator of school climate (Welsh et al., 1999). Higher levels of school bonding indicate a better school climate. In this dissertation we used two indicators of school bonding; that is, school climate and school achievement. We proposed that at schools with better school climate, that is where in general the level of school attachment is higher, all students are more strongly withheld from delinquent behaviour than at schools where the climate is worse, regardless of their individual level of school attachment. With regard to school achievement, we have proposed that adolescents at schools which perform better and schools with higher success rates show less delinquent behaviour than adolescents at schools which perform less, regardless of their individual school performance.

The first important finding in chapter 5 is that differences in youth delinquency between schools are for a large part due to differences in school composition. Demographic characteristics of adolescents (like age, gender, ethnicity and educational level) explained most of the differences between schools regarding youth delinquency. Hence, differences between schools in the extent of youth delinquency are for a large part explained by differences in school composition, that is differences in the characteristics of students. Composition effects could not, however, explain all variance in youth delinquency at the school level.

Moreover, we have found evidence that school level characteristics affected youth delinquency regardless of individual characteristics, like the bond between adolescents and their parents and peers, school and demographic characteristics. The results in chapter 5 supported our proposition regarding structural school characteristics. More specifically, we have found that the teacher-student ratio affected delinquent behaviour of adolescents. The more students per staff member at school, the more likely adolescents were to show delinquent behaviour. The teacher-student ratio has been added to this research as an alternative explanation for the influence of school size on youth delinquency, a relationship that was found in previous research (Gottfredson et al., 2005; Payne et al., 2003). By testing the effects of school size and teacher-student ratio simultaneously, we have shown that only teacher-student ratio affected youth delinquency significantly. This finding thus indicates that teacher-student ratio is a more powerful determinant than school size concerning the way in which schools can control their students' behaviour. Apparently, less staff members on the total number of students make it more problematic to control and supervise students' behaviour.

6.3 Empirical findings: social-ecological contexts as moderators

6.3.1 Neighbourhood

Testing whether social control characteristics, like the bond between adolescents and their parents, and peer characteristics, such as association with deviant peers, have differential effects in different neighbourhoods, is what we have done in chapter 4. This has provided rather new insights. It has been proposed that the deterrent effects of social control characteristics on youth delinquency are less effective in disadvantaged neighbourhoods than in advantaged neighbourhoods. Furthermore, we proposed that the effects of characteristics enhancing youth delinquency are stronger in disadvantaged neighbourhoods than in advantaged neighbourhoods. These expectations are based on the assumption that negative stimuli are more prevalent in disadvantaged neighbourhoods, which will reduce the effectiveness of control over adolescents'

delinquent behaviour in disadvantaged neighbourhoods more than in advantaged neighbourhoods. The same rationale can be applied to the influence of peer characteristics on youth delinquency. In disadvantaged neighbourhoods, delinquent behaviour is less disapproved than in advantaged neighbourhoods, which lowers the threshold to show such behaviour.

The analyses in chapter 4, first, showed that in advantaged neighbourhoods, youngsters who have a good relationship with their parents are refrained from youth delinquency, which does not hold for similar youngsters in disadvantaged neighbourhoods. These findings are consistent with Beyers et al. (2001), and Knoester and Haynie (2005) who found that positive family relationships are less effective in disadvantaged neighbourhoods than in advantaged neighbourhoods. Second, we have found that youngsters in advantaged neighbourhoods who perform better at school are quite likely to refrain from delinquency which, however, does not hold for similar youngsters in disadvantaged neighbourhoods. This finding is consistent with Hoffmann's results (2002) that showed that the attenuating impact of school involvement on youth delinquency is stronger in advantaged neighbourhoods than in disadvantaged neighbourhoods. Third, we have found that disapproval of deviant behaviour withheld adolescents in disadvantaged neighbourhoods more strongly from delinquent behaviour than adolescents in advantaged neighbourhoods. Considering these differential effects, we can conclude that the neighbourhood conditions the effects of social control characteristics on youth delinquency. In advantaged neighbourhoods social 'agents', like family and school, have a stronger influence in refraining adolescents from delinquent behaviour than in disadvantaged neighbourhoods. In disadvantaged neighbourhoods, disapproval of delinquent acts is more important in refraining adolescents from committing delinquent acts than in advantaged neighbourhoods.

A small remark has to be made on the interpretation of the differential effects. With regard to the conditioning effect of neighbourhood characteristics, not all effects were found in the general population, but in the analysis of two groups of extreme neighbourhoods, that is the most advantaged neighbourhoods and the most disadvantaged neighbourhoods. This could imply that the findings are specific only for these extreme categories. On the other hand, however, data were used from a rather prosperous city in the Netherlands with relatively small differences between neighbourhoods in the extent of poverty. Perhaps the findings will be more pronounced using neighbourhoods in other cities, or in other countries with more variance on poverty levels. Maybe in such situations, differential effects of social control characteristics on youth delinquency in different neighbourhoods will be even more prevalent.

6.3.2 School

In chapter 5, we tested the conditional effect of school context on the relationship between family, school and peers and youth delinquency, in addition to the direct influence school context can exert on delinquent behaviour of adolescents. The propositions central in this chapter read that the effect of the relationship with parents, school and peers to decrease adolescent delinquent behaviour will be more effective at advantaged schools than at disadvantaged schools. Furthermore, we formulated the expectation that characteristics positively affecting delinquent behaviour have a stronger effect on delinquent behaviour of adolescents in disadvantaged schools than in advantaged schools. These propositions had never been tested in previous research.

In chapter 5, we found little evidence that school level characteristics condition the relationship of the bond between adolescents and their parents, school and peers with youth delinquency. First, we found that the effect of attachment to parents and parental knowledge differed between schools. Secondly, our results showed that only one interaction effect between school level characteristics and attachment to parents and parental knowledge reached significance. It appeared that the negative effect of parental knowledge on youth delinquency was stronger for adolescents attending schools with a higher teacher-student ratio than for adolescents at schools with lower teacher-student ratio. This finding is in contrast with the expectation that the effects of the bond between adolescents and their parents would be stronger at advantaged schools than at disadvantaged schools.

An explanation as to why parental knowledge has a stronger effect on youth delinquency at schools with a higher teacher-student ratio than at schools with a lower teacher-student ratio, might be that parents try to control their children's behaviour, when they consider control at school to be insufficient. If parents know that at school control and oversight on their children is lacking, they might keep a closer eye on their children by keeping informed about their behaviour when the children are not at home. In this way parents might compensate for the lack of control at the school level.

6.4 Scientific progress and raising new questions

In this dissertation we have shown that cities and schools are important social-ecological contexts in the explanation of youth delinquency. Both social-ecological contexts showed to have a direct influence on delinquent behaviour. Our results further indicated that neighbourhoods as social-ecological contexts were less important. We have found differential effects of social control

characteristics in different neighbourhoods. Schools also conditioned the relationship of individual characteristics with youth delinquency. In this section, we will evaluate the implications of these results for social disorganisation theory, and the study of the influence of social-ecological contexts on youth delinquency.

Results in this dissertation showed that the more one-parent families live in cities or neighbourhoods, the more adolescents in these cities or neighbourhoods commit delinquent acts. Furthermore, we have found that family disruption at individual level affects youth delinquency. These results indicate not only that adolescents living with one parent show more delinquent behaviour than adolescents living with both parents, but also that adolescents living in areas where relatively a lot of one-parent families reside, show more delinquent behaviour than adolescents living in areas in which less one-parent families live, independently of their situation at home.

At school level it has been found that the higher the student-teacher ratio is at school, i.e. the number of students per teacher, the more adolescents show delinquent behaviour. The explanation of these findings is that social-ecological contexts, in which less supervision on adolescent's behaviour is prevalent, are less capable to control and affect behaviour of adolescents. Adolescents whose behaviour is controlled and supervised, and who are made accountable for it when causing annoyance, will probably learn better what is common, norm-guided behaviour in the community. By receiving and developing such 'social-ecological capital', adolescents internalise norms and values in such a way that they will adjust their behaviour to society's norms. These arguments are in line with assumptions derived from social disorganisation theory, as well as with previous research testing these assumptions. Main argument of social disorganisation theory is that the less social control is generated by community members, the higher crime rates will be. Previous research has shown that characteristics of social disorganisation, such as high levels of socio-economic disadvantage, ethnic heterogeneity and high levels of family disruption, hinder the ability of its community members to conduct informal control (Sampson and Groves, 1989; Sampson et al., 1997; Cantillon et al., 2003). As these conditions induce a lack of local guardians, they are accompanied by higher crime rates (Van Wilsem, 2003). Thus, the results in this dissertation seem to support these aspects of social disorganisation theory.

Osgood et al. (1996) have applied routine activities theory to individual deviant behaviour. These authors have proposed that hanging around with peers in the absence of social control, that is in the absence of authority figures, increases the likelihood of deviant behaviour. They call this phenomenon unstructured peer socialising. According to these researchers,

situations conducive to deviance are mostly prevalent during leisure activities away from authority figures. One of the underlying assumptions they use to develop their theory, is that situations are more conducive to deviance if no authority figure is present (Osgood et al., 1996: 640). Results in this dissertation seem to support this assumption. Osgood and Anderson (2004) found that even contextual levels of unstructured socialising affected delinquent behaviour of adolescents. Their argument for testing the contextual effect of unstructured socialising was that in contexts with higher level of unstructured socialising, adolescents are more likely to find co-offenders. The same could be valid for the findings in this dissertation. At the contextual level, we found that adolescents show more delinquent behaviour in contexts in which supervision by adults is lacking. A reasonable assumption would be that few authority figures are present in such contexts. In this way this dissertation also seems to support the routine activities perspective.

With regard to the influence of the neighbourhood level on youth delinquency, we have found only marginal differences between neighbourhoods, which is in line with findings in different West-European countries (for Germany, see Oberwittler, 2004; for Belgium, see Pauwels, 2007; for the Netherlands, see Rovers, 1997; Schneiders et al., 2003). These results are, however, in contrast with findings from the United States, where researchers have found clear differences in youth delinquency between neighbourhoods. Apparently, neighbourhoods play a more important role in shaping the behaviour of adolescents in the United States than in Europe. An explanation could be that boundaries between neighbourhoods in West-European countries are less clear. Adolescents spend their time not only in the neighbourhood they live in, but also in neighbourhoods nearby, which is a plausible explanation considering the situation in the Netherlands, where adolescents often attend primary and secondary school outside the neighbourhood they live in.

An alternative explanation why we did not find differences in youth delinquency between neighbourhoods, could be the way we defined neighbourhoods. Neighbourhoods in this dissertation were identified by postal code. Postal code, however, is an administrative definition of neighbourhood. Defining neighbourhoods by postal codes might not represent the community level, as important context influencing people's lives. We expected that such living areas help socialising adolescents residing in these areas. Neighbourhood as community living areas might consist of various postal codes. It is possible that a more encompassing definition of neighbourhood results in stronger neighbourhood effects.

Previous studies on youth delinquency have shown only little interest in the influence of school context, which is remarkable, considering research of Oberwittler (2004) and Pauwels (2007), who both found that schools are more important social-ecological contexts with regard to

delinquent behaviour of adolescents than neighbourhoods. Results in this dissertation seem to support this finding. We have found that schools actually did differ in youth delinquency (chapter 5), whereas marginal differences have been found between neighbourhoods (chapter 3 and 4). An interesting research plan would thus be to collect and use data that make it possible to simultaneously test the influence of cities, neighbourhoods and schools on youth delinquency. Collecting such data further opens the possibility to test how robust the findings in this dissertation are with regard to the influence of city contexts. The approach in this dissertation, using city level characteristics to explain individual differences in youth delinquency, is unique in current criminological research. To our knowledge, no other studies have yet tested the influence of city context on individual levels of delinquency. By using more elaborated data, which make it possible to simultaneously test the influence of different social-ecological contexts, an attempt should be made to replicate or refute our research findings. Collecting data among cities, neighbourhoods and schools can make clear whether differences between cities and schools still exist when different social-ecological contexts are included, controlling for individual and demographic characteristics.

Next to the direct influence that social-ecological contexts exert on youth delinquency, we have tested the conditional effects of neighbourhood characteristics and school characteristics on the relationship between the bond between adolescents and their parents and peers, and youth delinquency. We based our hypotheses on social-ecological theory, which stresses that the relation between risk factors and behavioural outcomes depends on the social contexts in which those risks are experienced (Bronfenbrenner, 1986). We expected that characteristics refraining adolescents from delinquent behaviour are more effective in advantaged contexts than in disadvantaged contexts. Characteristics positively affecting delinquent behaviour were expected to have a stronger effect on delinquent behaviour of adolescents in disadvantaged contexts than in advantaged contexts.

Our results showed mixed support for the conditional effects of social-ecological contexts. Results in chapter 4 have shown that a better relationship with parents, and better school performance withhold adolescent from delinquent behaviour only in advantaged neighbourhoods, not in disadvantaged neighbourhoods. This finding supports our hypotheses. Disapproval of delinquent acts had a stronger, negative effect in disadvantaged neighbourhoods than in advantaged neighbourhoods. The more parents know about their children's behaviour, withheld adolescents more strongly in schools with few staff members on the total of students than at schools at which more staff members per student are available. These last two conditional effects indicate that characteristics withholding adolescents from committing delinquent acts are

stronger in disadvantaged contexts than in advantaged contexts, which contradicts with our hypotheses. These mixed findings make it hard to draw firm conclusions with regard to the conditional effects of social-ecological contexts.

We do think, however, that our propositions related to the conditional effects of social-ecological contexts are plausible. We proposed that characteristics refraining adolescents from negative behaviour, e.g. delinquent behaviour, are more effective in advantaged contexts than in disadvantaged contexts. An explanation for this proposition is that negative stimuli are more prevalent in negative, disadvantaged contexts that will reduce the effectiveness of control and/or supervision over (delinquent) behaviour of adolescents in these contexts.

A limitation of this dissertation was the use of cross-sectional data. For this reason it remains questionable whether the relations are actually ‘causal’ relationships. Liska et al. (1998), for example, found that crime rates are positively related to the ethnic composition in social-ecological contexts. They found causal effects in both directions: crime rates changed the ethnic composition of an area, and ethnic composition affected crime rates. This could imply that crime rates affect the number of one-parent families living in a city, which in turn affects crime. People living in cities with a high crime rate are more willing to move in order to ‘escape’ from the crime. People remaining in those cities will be those people who have less possibilities and means to move to another place. In this way, crime rates may affect the number of one-parent families, which may affect crime rates. To pre-empt this problem of causality, more elaborated data, such as longitudinal or panel data, are desired. As yet such data are not available in the Netherlands.

6.5 Societal relevance and policy recommendations

The results in this dissertation have shown that cities and schools are more important social-ecological contexts in the explanation of delinquent behaviour of adolescents than neighbourhoods. In Dutch policies, however, the neighbourhood still plays a major role in trying to reduce annoyance caused by adolescents. Considering the results in this dissertation, such an approach is only one part of a larger picture. In chapter 2, it has been shown that cities differ more than neighbourhoods with regard to youth delinquency. Neighbourhoods appeared to differ only marginally.

Our results, as shown in chapter 3, indicate that family disruption at city, neighbourhood and individual level affects youth delinquency. This means that adolescents living with one parent show more delinquent behaviour than adolescents living with both parents. Furthermore, these results show that adolescents living in areas where relatively a lot of one-parent families

reside, show more delinquent behaviour than adolescents living in areas in which less one-parent families live, independently of their situation at home. We expect that adolescents in these contexts lack supervision by community members, which can explain why adolescents in these areas are more likely to commit delinquent acts. For this reason, a recommendation for future policies is to account for this lack of supervision within areas where many one-parent families live. Within these areas difficulties exist regarding control over behaviour of adolescents due to a lack of availability of 'social agents' in these areas, who can supervise and correct these adolescents.

Another implication for future policies is that living with only one parent seems to be a risk factor for delinquent behaviour in adolescents. Apparently, parents who have to raise their children on their own face difficulties in supervising their children's behaviour. These difficulties even influence adolescents living in the same areas, when one-parent families are concentrated within these areas. Therefore, more attention should be paid and priority given to possible problems one-parent families face. Welfare officers, for example, can play an important role in making these parents aware of what risks their children are exposed to, when they lack supervision.

In chapter 5, we showed that schools also differed in the extent of delinquent behaviour of adolescents. These results thus support the idea that characteristics at neighbourhood level are less important in the study of youth delinquency than characteristics of cities and schools. Regarding the school level, this finding is not that remarkable considering the amount of time adolescents spend at school. During weekdays, adolescents spend most of their time at school. Therefore, it is most likely that the development of their behaviour is for an important part influenced by conditions that are part of the school context. Hence, policy implications should also involve school contexts more than neighbourhood contexts in order to prevent adolescents from committing delinquent acts.

We have shown that at schools with less staff members per student, adolescents show more delinquent behaviour than at schools where this ratio is higher. This finding thus can imply that these schools are less capable in controlling their students' behaviour. At these schools, the aim could be to improve the conditions that can help to control behaviour of adolescents better. A logical adjustment could be to appoint more support staff to control and keep an eye on students. Perhaps, adolescents will be less likely to show delinquent behaviour when they know and see that people keep an eye on them. In such situations, adolescents know that they will be addressed to when they act against general rules. Hence, physical appearance of staff members

might help to give adolescents the idea that they are under supervision, and thus the idea that they have to behave according to general rules.

A limitation of this dissertation was the fact that due to comparability problems between the data of different cities, the measurement of delinquent behaviour was restricted to only six types of behaviour. This means that the operationalisation of delinquent behaviour gave only partial coverage of this phenomenon. A more profound measurement of delinquent behaviour can be found in the research of Van der Laan and colleagues (2007). They have used a questionnaire in which adolescents were asked to indicate, in a list of 33 delinquent acts, whether or not they had ever committed any of these acts. They were also asked how many times these crimes were committed. When this list is used in youth surveys, a comparison can be made with the results of Van der Laan et al. (2007), whose research consisted of a representative sample of Dutch adolescents.

Furthermore, lack of comparability between the surveys used in the different cities made it impossible to include characteristics of the relationship with parents and peers, next to city and neighbourhood characteristics. Therefore, the question remains whether the results with regard to the influence of the city are robust, when characteristics related to the bond between adolescents and their parents and peers are included in the analyses. To answer this question properly, cities should be encouraged to collect data among adolescents that are comparable with data collected in other cities. Collecting comparable data is not only of scientific interest. The advantage for cities is that they can interpret the results found in their city with the results from other cities. In doing so, we can have a better understanding of the social situation of adolescents.

Progress should not only be made by collecting comparable data between different cities. One of the main conclusions of this dissertation is that (social-ecological) contexts affect the relationship between the bond to parents and peers, and delinquent behaviour of adolescents. In other words, the impact of risk or protective factors, and the way in which they affect youth delinquency, depend on the context in which these factors are experienced. In this dissertation we have focused on social-ecological contexts in which adolescents spend a great amount of their time. These contexts, however, are not the only important contexts which can determine the behaviour of an adolescent. It is likely that other environments in which adolescents spend their spare time, such as sports clubs or youth centres, can also affect the behaviour of adolescents. In order to examine the way in which these contexts affect adolescent's behaviour, it is important that it is possible to link information of such contexts to information of adolescent behaviour. Hence, the possibility to link characteristics of different contexts should be kept in mind in collecting data.

In conclusion, we will recapitulate the main findings and its implications of this research. We have shown that cities and schools are important social-ecological contexts in the explanation of youth delinquency. Neighbourhoods, on the other hand, appeared to be less important. These findings were remarkable considering the few studies that examine the influence of city context or school context on delinquent behaviour of adolescents. The influence of neighbourhood characteristics on youth delinquency has received much more attention in previous research. Furthermore, we have shown that the influence of individual characteristics on youth delinquency, such as the relationship with parents, differs between neighbourhoods and between schools. Our findings of the effects on city and school level, imply that future studies on the influence of social-ecological contexts on youth delinquency should integrate characteristics at city level and school level, next to individual and neighbourhood characteristics.

Summary

Introduction

Youth delinquency is one of the major social problems in the Netherlands. Not only do the media frequently report about crime committing adolescents, but also in Dutch politics youth delinquency is a major concern. This is shown by a growing number of adolescents who are questioned by the police as suspects of crime (Eggen, Van der Laan & Bogaerts, 2007).

Crime is most prevalent in urban areas. This is one of the reasons that reduction of youth delinquency is one of the central issues within Dutch urban policies. Surprisingly, the possible influence of social-ecological contexts, like cities and neighbourhoods, on youth delinquency has received little attention in the Netherlands. This is remarkable considering Bronfenbrenner's developmental ecological theory (1979), which states that the development of adolescents is influenced by the social context in which they grow up.

In this dissertation, we focus on the influence of different social-ecological contexts on delinquent behaviour of adolescents. Therefore, data have been collected among 12 to 17 years old adolescents in Dutch cities, complemented with contextual information about the cities and neighbourhoods they live in and the schools they attend. Using this information, it can be examined whether these social-ecological contexts affect youth delinquency, above and beyond the influence of family characteristics (like the bond to parents), peer characteristics (like association with deviant peers) and demographic characteristics (like age and ethnicity). To do so, we focus on social disorganization theory. The core proposition of this theory reads that the weaker social control in a social-ecological context, the higher the crime-level. Adolescents living in social-ecological contexts lacking social control, which is characterized by weak social cohesion and weak social networks, are less supervised and less often addressed to their behaviour, which raises the chance that they will commit delinquent acts. We derive hypotheses from social-disorganization theory, considering previous empirical research, to examine whether and to what extent city, neighbourhood and school level characteristics affect delinquent behaviour of adolescents, above and beyond the influence of family, peer and demographic characteristics. This is the first aim of this dissertation.

The second aim is to test the hypothesis that bonds to parents and peers have different effects on youth delinquency in different social-ecological contexts. This hypothesis has been derived from previous research on the influence of bonds to parents and peers on youth delinquency, which showed different results. The scientific puzzle is that some researchers found

that both bonds to parents and bonds to peers influence delinquent behaviour of adolescents directly. Other researchers found that the relationship between bonds to parents and youth delinquency is spurious, when bonds to peers are taken into account. The explanation that Agnew (2003) gives for these differential results, is that the influence of bonds to parents and peers differs within different social-ecological contexts, like neighbourhoods and schools. In this dissertation, this hypothesis will be tested for the Dutch situation, something which has not been done previously.

More generally, the intention with this dissertation is to get more insight in the way social-ecological contexts affect youth delinquency. Therefore, we concentrate on the following social-ecological contexts: cities, neighbourhoods and schools. We do not concentrate solely on possible direct effects of these contexts on youth delinquency, but also on possible differential effects of bonds to parents and peers on youth delinquency in different neighbourhoods and schools. The main research questions in this dissertation read:

- 1) To what extent and in which way do social-ecological contexts affect youth delinquency in the Netherlands, above and beyond the influence of individual characteristics, like bonds to parents and peers?
- 2) To what extent and in which way do social-ecological contexts condition the relationship between individual characteristics, like bonds to parents and peers, and youth delinquency in the Netherlands?

Data

For the purpose of this research we use two different datasets. The first one has been compiled by gathering and combining youth surveys from different Dutch cities. In this way, information was obtained from the following 11 cities: Almelo, Den Bosch, Heerlen, Helmond, Leeuwarden, Maastricht, Nijmegen, Rotterdam, Schiedam, Sittard-Geleen and Venlo. The different youth surveys are all based on the Dutch Standard Youth Monitor (Bijmold et al., 1998). In all cities adolescents have been asked to their relationship with parents and peers, and their (risk) behaviour (like alcohol and drug use, and delinquent behaviour).

The use of self-report data in research on youth delinquency has its advantages and disadvantages. A disadvantage is that adolescents do not always tell the truth, and thus can withhold information about their delinquent behaviour. An alternative would then be to use official crime statistics. A disadvantage of official data is that not all committed crimes are

registered. Especially, less serious crimes are less often registered, as these crimes are given less priority by the police. Considering the importance of less serious crimes for this research, the usage of self-report data corresponds better to the aims of this dissertation than the use of official crime statistics.

Not in all cities the data has been collected simultaneously. Some cities have collected the data at school, wherefore also youngsters living in nearby villages have filled in the questionnaire. In other cities, a sample has been drawn among all youth living in the city, who were then sent a questionnaire to their homes. For comparability reasons, we have selected 12 to 17 years old adolescents living in one of the 11 cities. To be able to test hypotheses at city and neighbourhood level, we have enriched these individual level data with city and neighbourhood characteristics obtained through Statistics Netherlands (C.B.S.).

A disadvantage of combining datasets derived from different cities is the comparability of relevant indicators. In all cities, adolescents are asked whether they have committed delinquent acts in the last 12 months. However, only six delinquent acts were covered in all cities, namely theft from shops, vandalism, graffiti, burglary, carrying a weapon and threatening other people for money. For this reason, youth delinquency in this research has been measured using these six delinquent acts. A main advantage of connecting datasets from different cities is that it is then possible to compare different cities.

The second dataset we use in this dissertation is derived from the Dutch part of the WHO-study *'Health Behaviour in School-Aged Children (HBSC)'*. In this study, information has been collected among adolescents at secondary school. They are, among other topics, asked to their health and risk behaviour. Delinquent behaviour has been measured using the *'Youth Self Report (YSR)'*. The YSR delinquency subscale contains 11 items assessing behaviour including not feeling guilty, having 'bad' friends, lying, hanging around with older peers, running away from home, setting fires, stealing from parents, stealing outside home, swearing, being truant and using alcohol or drugs. The individual level data from the HBSC-study has been enriched with information from Dutch schools collected through the website *'Education in Numbers' ('Onderwijs in Cijfers')*.

Chapter 2 Distinguishing the city, neighbourhood, and individual level

In chapter 2, we have examined whether there is theoretical and empirical evidence to distinguish the city level in research on youth delinquency, next to the neighbourhood and individual level. To do so, we first describe macro level theories and previous research related to city level crime

rates. Furthermore, we test whether variance in youth delinquency has to be assigned to the city level, next to variance at neighbourhood and individual level.

Previous research on differences in crime rates between cities has neglected neighbourhood and individual characteristics. Research that focuses on the influence of individual and neighbourhood characteristics neglects city characteristics. In this chapter, we take a first step to distinguish the influence of the city, neighbourhood and individual level, and to integrate these levels in research on youth delinquency.

Previous research on differences in crime rates between cities in the United States has shown that there is both theoretical and empirical evidence to examine the influence of city characteristics on delinquent behaviour of adolescents. Also, the multilevel analyses we performed show that there are ample reasons to distinguish the city level in research on youth delinquency, next to the neighbourhood and individual level. From the results, we learn that differences in youth delinquency exist between cities, as well as between neighbourhood and between individuals.

An interesting finding in chapter 2 is that in the Netherlands the city level is a more important social context in studying youth delinquency than the neighbourhood level. Even more, the results show that differences in youth delinquency between neighbourhoods are overestimated, when the city level has not been taken into account. Differences between neighbourhoods in youth delinquency seem to exist, when the city level is not controlled for. By accounting for possible differences between cities, the differences between neighbourhoods in youth delinquency blur.

The results in chapter 2 thus show that neighbourhoods within cities differ only marginally regarding self-reported delinquent behaviour of adolescents. These findings are consistent with previous research in the Netherlands (Rovers, 1997), Belgium (Pauwels, 2007), and Germany (Oberwittler, 2004), which also shows only marginal differences between neighbourhoods. However, compared to results from the United States, our results are remarkable. Studies in the United States do show clear differences between neighbourhoods considering delinquency rates. An explanation for these different results might be that socio-economic differences between neighbourhoods in the Netherlands, and perhaps also between neighbourhoods in other Western-European countries, are less extreme than in the United States.

In chapter 2, we thus illustrate that the city level can play an important role in the explanation of youth delinquency. Furthermore, we propose to integrate the city, neighbourhood and individual level both theoretically and empirically in research on youth delinquency, for example in research on the influence of poverty on delinquent behaviour. From social

stratification theory, the hypothesis can be derived that the higher the poverty level in a city or neighbourhood, the higher the crime rate. Previous research has shown that the same hypothesis also applies to the individual level: adolescents growing up in low income families show more delinquent behaviour than adolescents growing up in high income families (Farrington, 1995). To disentangle the effect of poverty on youth delinquency at the different levels, contextual and individual measures of poverty at city, neighbourhood and individual level should be simultaneously examined in a multilevel design. In this way, it can be determined to what extent characteristics at the different levels have separate and independent effects on youth delinquency.

Chapter 3 City and neighbourhood determinants of youth delinquency

The main research question in chapter 3 reads: to what extent do city and neighbourhood characteristics, derived from social disorganisation theory, affect youth delinquency, controlling for individual characteristics, like age, gender and educational level? Social disorganisation theory proposes that the weaker social control in neighbourhoods or cities, the higher the crime rates. Neighbourhoods, which suffer from weak social control, are characterized by lower socio-economic status, higher ethnic heterogeneity and higher prevalence of one-parent families.

In this chapter, we derived the same hypotheses at city and neighbourhood level from social disorganisation theory to distinguish at which level which characteristics affect youth delinquency. We concentrate on the following contextual characteristics: socio-economic status, ethnic heterogeneity and family disruption. These characteristics at city and neighbourhood level have been measured the same way. To determine at which level which characteristics affect youth delinquency, neighbourhood and city characteristics have been included in the analyses simultaneously.

The results in chapter 3 show that the more one-parent families live in cities and/or neighbourhoods, the more adolescents living in these contexts show delinquent behaviour. Also, at the individual level our results show that adolescents living with only one parent show more delinquent behaviour than adolescents living with both parents. This means that it is not only harmful to grow up with a single-parent, but also to grow up in an area characterized by a high number of one-parent families. An explanation might be that areas with a high concentration of one-parent families are less capable to supervise the behaviour of youth in these areas adequately. This explanation needs to be tested in future research.

Chapter 4 Neighbourhoods as moderators

In chapter 4, we answer the question to what extent neighbourhood characteristics condition the effect of social control characteristics and peer characteristics on youth delinquency. In other words, we examine whether the influence of social control characteristics, like bonds to parents and school, and peer characteristics, like association with deviant peers, on youth delinquency differs within different neighbourhoods.

Concerning the possible conditioning effect of neighbourhoods, we assume that negative stimuli are most prevalent in disadvantaged neighbourhoods. These negative stimuli will reduce the effectiveness of characteristics withholding adolescents from committing delinquent acts, and will strengthen the effectiveness of characteristics enhancing adolescents to commit delinquent acts. We expect social control characteristics, like bonds to family and schools, to withhold adolescents from delinquent behaviour, and thus that the effect of these characteristics are weaker in disadvantaged neighbourhoods than in advantaged neighbourhoods. Furthermore, we expect that peer characteristics, like association with deviant peers, enhance the likelihood that adolescents show delinquent behaviour, and thus that this relationship is stronger in advantaged than in disadvantaged neighbourhoods.

Using data from the Nijmegen Youth Monitor 1999, we first show that neighbourhood characteristics do not directly affect youth delinquency. Neighbourhoods do not differ at all in their levels of youth delinquency. If we take the conditional effect of the neighbourhood into account, we find the following results. A better relationship with parents and better school performance withhold adolescents from committing delinquent acts in advantaged neighbourhoods. These relationships do not apply for adolescents living in disadvantaged neighbourhoods. The effect of negative attitudes towards delinquency, i.e. the more delinquent behaviour is disapproved, on youth delinquency is stronger in advantaged than in disadvantaged neighbourhoods. These results seem to suggest that in advantaged neighbourhoods family and school are more important in withholding adolescents from committing delinquent acts, while in disadvantaged neighbourhoods it depends more on the norms of adolescents themselves whether they commit delinquent acts.

A short remark has to be made on the interpretation of the differential effects found in this chapter. Our results are not based on analyses of the complete population of neighbourhoods: only the most disadvantaged neighbourhoods and the most advantaged neighbourhoods have been compared. This could indicate that our findings are specific only for these extreme categories. On the other hand, however, we conducted our research using data

from a rather prosperous city in the Netherlands with relatively small differences between neighbourhoods in the extent of poverty. Perhaps, our findings will be more pronounced using neighbourhoods in other cities, or in other countries with more heterogeneity in poverty levels.

Chapter 5 School context and youth delinquency

In Dutch criminological research, only limited attention has been paid to the influence schools as social contexts have on delinquent behaviour of its pupils. In chapter 5, we test the influence of contextual school characteristics on youth delinquency, above and beyond the influence of bonds to parents, peers and school. Furthermore, we test to what extent the effects of bonds to parents, peers and school on youth delinquency differs between different schools.

We derive hypotheses from social disorganisation theory regarding the influence of contextual school characteristics on youth delinquency. Social disorganisation theory has been developed in research on differences in crime rates between neighbourhoods. This theory proposes that the lower social control in neighbourhoods, the higher the crime rates. We apply this proposition to school context, and propose that adolescents at schools that experience difficulties in supervising its pupils' behaviour are more likely to show delinquent behaviour. We expect that larger schools, schools with higher student-teacher ratio, schools with less experienced staff members, schools with young staff members, ethnic heterogeneous schools, schools attended by adolescents with weak bonds to school and schools that show weak school performance, experience more difficulties in supervising the behaviour of its pupils.

Considering the conditioning influence of school context on the relationship between bonds to parents and peers, and youth delinquency, we expect that characteristics that withhold adolescents from committing delinquent acts are more effective at advantaged schools than at disadvantaged schools. The rationale for this hypothesis is that in disadvantaged contexts, more negative stimuli are present that stimulate adolescents to delinquent behaviour. Therefore, we expect characteristics withholding adolescents from delinquent behaviour to be less effective in these areas.

The results in chapter 5 first show that differences between schools in delinquent behaviour are for a large part due to differences in school population. By controlling for demographic characteristics (like age, gender, ethnicity, and educational level) most, but not all, of the differences between schools in youth delinquency are explained.

We tested the influence of different contextual school characteristics on youth delinquency. Only the student-teacher ratio, i.e. the number of students per staff member,

showed to affect delinquent behaviour of adolescents. Adolescents attending schools characterized by higher student-teacher ratio show more delinquent behaviour than adolescents attending schools characterized by lower teacher-student ratio. We hypothesize that schools characterized by higher student-teacher ratio are less capable to adequately supervise the behaviour of its pupils. In future research, this hypothesis needs to be tested.

Concerning the conditioning influence of school characteristics on the relationship between bonds to parents and peers, and youth delinquency, the results in chapter 5 show that the influence of parental knowledge on youth delinquency is stronger at schools with higher student-teacher ratio than at schools with lower student-teacher ratio. This means that at schools that face greater difficulties in supervising the behaviour of its pupils, parental knowledge about their children's behaviour withhold adolescents stronger from committing delinquent acts than at schools at which supervision is less problematic. This might be a compensation effect: parents compensate the lack of supervision at school by intensifying the knowledge they have and get on their children's behaviour.

General conclusion and discussion

The results in this dissertation show that cities and schools are important social contexts in theoretical driven, empirical research on youth delinquency. Neighbourhoods play only a marginal role in this research. We expect that cities and schools, which are less capable of supervising adolescents' behaviour, have more difficulties in controlling this behaviour, and thus that adolescents growing up in these contexts show higher delinquency rates.

Adolescents whose behaviour is supervised in social-ecological contexts, and who are held responsible for their behaviour, will behave socially acceptable, and will therefore be less likely to show delinquent behaviour. By receiving and developing such 'social-ecological capital' adolescents learn to behave according to society's norms and values. This line of reasoning stems from propositions derived from social disorganisation theory. This theory proposes that the weaker social control in an area, the higher the crime rate. Explaining mechanism behind this proposition is that lack of social control stands for a lack of *local guardians* (Van Wilsem, 2003).

An alternative explanation of the results of this dissertation can be found in the *routine activities* approach as proposed by Osgood et al. (1996). One of the central propositions of this approach is that situations conducive for crime are characterized by absence of adult supervision. This proposition can also be applied to the results in this dissertation. Situations characterized by lack of supervision by adults will be more prevalent in cities and neighbourhoods, in which

relatively many one-parent families live. Also, schools with higher student-teacher ratio will be likely to face situations lacking adult supervision.

With regard to the hypotheses derived from social disorganisation theory at city and neighbourhood level, our results have shown that only family disruption affects youth delinquency. The hypotheses regarding the effect of socio-economic status and ethnic heterogeneity on youth delinquency have to be rejected in this dissertation. In future research, it should be studied what the explaining mechanisms are of the finding that adolescents living in cities and neighbourhoods with high numbers of one-parent families show more delinquent behaviour than adolescents living in cities and neighbourhoods populated by less of these families. By deriving explaining mechanisms from different macro-level theories, it can be examined which theories are more fruitful in explaining the influence of social-ecological contexts on youth delinquency.

Our conclusion that neighbourhoods differ only marginally in their levels of youth delinquency, agrees with the results from previous research on the influence of neighbourhood characteristics on youth delinquency in the Netherlands (Rovers, 1997), in Belgium (Pauwels, 2007), and in Germany (Oberwittler, 2004). In the United States, however, differences between neighbourhoods in their levels of youth delinquency do exist. An explanation for these different results between European countries and the United States might be that adolescents in Europe spend their (spare) time not only in the neighbourhood they live in, but also in surrounding neighbourhoods. One of the reasons for this is that adolescents often attend schools in nearby neighbourhoods. An alternative explanation might be found in the definition of neighbourhoods. In this dissertation, we define neighbourhoods by postal code. This is an administrative definition. Defining neighbourhoods this way does not always agree with the way people define the neighbourhood they live in. Using information about how people define their neighbourhood, a better construct of the neighbourhood might be obtained. Then, differences in youth delinquency between neighbourhoods might be more pronounced.

An important recommendation for policy makers is that adolescents growing up with a single parent, and living in an area with many one-parent families need some extra attention. Parents who have to raise their children by their own, have difficulties in supervising their children's behaviour. The same mechanism applies to cities and neighbourhoods in which relatively many one-parent families live. Therefore, there should be extra attention and support for the problems single parents face in supervising children's behaviour.

Furthermore, we recommend to give schools as social contexts a more significant place in urban policies. Up until now, an important role is assigned to the influence of neighbourhoods in

preventing adolescents from delinquent behaviour. Our results show, however, that school context plays a more important role in preventing adolescents from delinquent behaviour than neighbourhood context. This is not that remarkable considering the amount of time adolescents spend at school. It is quite understandable that schools play an important role in the development of behaviour of adolescents.

A decision that can be made based on our results is to give schools the opportunity to increase their staff size. Our results show that the less staff is present at school related to the number of students, the more pupils at these schools commit delinquent acts. By appointing more staff members, schools are better capable of supervising the behaviour of its pupils. Then, they will be better capable of addressing pupils to their behaviour. Furthermore, increasing staff size might also have a preventive impact. Adolescents notice that they are being supervised, and therefore they will be less inclined to commit delinquent acts.

Samenvatting (Summary in Dutch)

Inleiding

Jeugddelinquentie is een sociaal probleem dat volop in de aandacht staat in Nederland. Niet alleen wordt er in de media vaak geschreven en gesproken over delicten plegende jongeren, ook binnen het overheidsbeleid staat jeugddelinquentie hoog op de agenda. Dit uit zich onder andere in stijgende aantallen jongeren die ondervraagd worden door de politie als verdachte van een misdaad (Eggen, Van der Laan & Bogaerts, 2007).

Uit onderzoek blijkt dat criminaliteit onder jongeren het meest voorkomt in steden. Dit is een van de redenen dat het terugdringen van jeugddelinquentie een van de belangrijkste thema's is binnen het Nederlandse GroteStedenBeleid. Opmerkelijk is het dan om te constateren dat de mogelijke invloed van sociaal-ecologische contexten, zoals de stad en de buurt, op delinquent gedrag van jongeren nog weinig aandacht heeft gehad in Nederlands onderzoek. Opmerkelijk gezien de ontwikkelingsecologische theorie van Bronfenbrenner (1979) waarin wordt verondersteld dat de ontwikkeling van jongeren beïnvloed wordt door de sociale context waarin zij opgroeien.

In deze dissertatie gaan we in op de invloed van verschillende sociaal-ecologische contexten op delinquent gedrag van adolescenten. Hiervoor zijn gegevens verzameld onder 12 tot 17-jarige jongeren uit Nederlandse steden, aangevuld met contextuele kenmerken van steden, buurten en scholen waarin die jongeren wonen of op school zitten. Met dergelijke gegevens kan de invloed onderzocht worden die sociaal-ecologische contexten uitoefenen op delinquent gedrag van adolescenten, naast de invloed van gezinskenmerken (zoals de band met ouders), vriendengroepkenmerken (zoals de omgang met deviante vrienden) en demografische kenmerken, (zoals leeftijd en etniciteit). Daartoe inventariseren we eerst theoretische inzichten die hieromtrent naar voren zijn gebracht. We richten ons daarbij met name op de sociale desorganisatietheorie. In deze theorie wordt verondersteld dat het criminaliteitsniveau in een sociaal-ecologische context hoger is, naarmate de mate van sociale controle lager ligt. Door een gebrek aan sociale controle in een dergelijke omgeving, wat gekenmerkt wordt door zwakke sociale cohesie en zwakke sociale netwerken, worden jongeren in deze omgeving minder in de gaten gehouden en minder aangesproken op hun gedrag, waardoor zij eerder delicten zullen plegen. Op basis van de sociale desorganisatietheorie en eerder empirisch onderzoek, leiden we hypothesen af teneinde te toetsen of en in hoeverre er invloed is van stads-, buurt- en

schoolkenmerken op het delinquent gedrag van adolescenten, bovenop of naast de invloed van gezins-, vriendengroep- en demografische kenmerken. Dat is het eerste doel van deze dissertatie.

Het tweede doel van deze dissertatie is om de hypothese te toetsen dat de band van jongeren met hun ouders en hun vrienden een verschillende invloed heeft op jeugddelinquentie binnen uiteenlopende sociaal-ecologische contexten. We sluiten met deze hypothese aan bij eerder onderzoek naar de invloed van familie en vrienden op delinquent gedrag van adolescenten waaruit verschillende bevindingen naar voren kwamen. De wetenschappelijke puzzel is namelijk dat sommige onderzoekers hebben gevonden dat zowel kenmerken van het gezin als kenmerken van de vriendengroep een directe invloed uitoefenen op delinquent gedrag van adolescenten, terwijl in ander onderzoek juist wordt gevonden dat de invloed van het gezin op delinquent gedrag slechts 'schijn' is wanneer ook rekening wordt gehouden met de invloed van de vriendengroep. De verklaring die Agnew (2003) voor deze verschillende resultaten geeft, is dat de invloed van familie en van vrienden op delinquent gedrag verschilt binnen verschillende sociaal-ecologische contexten, zoals de buurt en school. In dit proefschrift zal deze hypothese getoetst worden voor de Nederlandse situatie, iets dat nog niet eerder gedaan is.

De intentie van dit proefschrift is, meer in het algemeen, om meer inzicht te verkrijgen in de wijze waarop sociaal-ecologische contexten een rol spelen in de verklaring van jeugddelinquentie. Hierbij concentreren we ons op de volgende drie sociaal-ecologische contexten: stad, buurt en school. We richten ons niet alleen op mogelijke directe effecten van deze contexten op jeugddelinquentie, maar ook op de mogelijke verschillende invloed die de band met ouders en vrienden uitoefenen op delinquent gedrag van adolescenten in buurten en scholen die zeer sterk uiteenlopende kenmerken vertonen. De centrale vraagstellingen in dit proefschrift luiden:

- 1) In hoeverre en op welke wijze beïnvloeden sociaal-ecologische contexten jeugddelinquentie in Nederland, bovenop de invloed van individuele kenmerken, zoals de band met ouders en vrienden?
- 2) In hoeverre en op welke wijze conditioneren sociaal-ecologische contexten de relatie tussen individuele kenmerken, zoals de band met ouders en vrienden, en jeugddelinquentie in Nederland?

Data

Voor dit onderzoek worden twee databestanden gebruikt. Het eerste bestand is samengesteld door jeugdonderzoeken uit verschillende Nederlandse steden te verzamelen en samen te voegen. Het gaat hierbij om informatie uit 11 steden, te weten Almelo, Den Bosch, Heerlen, Helmond, Leeuwarden, Maastricht, Nijmegen, Rotterdam, Schiedam, Sittard-Geleen en Venlo. De verzamelde jeugdonderzoeken zijn allen gebaseerd op de Nederlandse Standaard Jeugdmonitor (Bijmold et al., 1998). In alle steden is aan jongeren gevraagd naar hun relatie met ouders en vrienden en naar hun (risico-) gedrag (zoals alcohol-, en drugsgebruik en delinquent gedrag).

Het gebruik van zelfrapportage in onderzoek naar jeugddelinquentie kent zijn voor- en nadelen. Nadeel is dat jongeren niet altijd de waarheid hoeven te vertellen en dus informatie over gepleegde delicten achter kunnen houden. Een alternatief zou dan zijn om officiële registratiecijfers te gebruiken. Nadeel daar weer van is dat niet alle gepleegde delicten geregistreerd worden. Met name minder ernstige delicten worden minder geregistreerd, aangezien aan deze delicten minder prioriteit wordt gegeven door de politie. Gezien het belang van ook de minder ernstige delicten voor dit onderzoek past het gebruik van zelfrapportage beter bij het doel van dit onderzoek dan het gebruik van officiële registratiecijfers.

Niet in alle steden is de data op dezelfde wijze verzameld. In sommige steden zijn data verzameld op school in de klas, waardoor ook jongeren woonachtig in omliggende gemeenten ondervraagd zijn. In andere steden is een steekproef genomen van jongeren woonachtig in de stad, die dan schriftelijk ondervraagd worden. Voor de vergelijkbaarheid van dit onderzoek hebben we 12 tot 17-jarige jongeren geselecteerd woonachtig in een van de betreffende steden. Om hypothesen op stads- en buurtniveau te kunnen toetsen, zijn deze gegevens verrijkt met stads- en buurtgegevens verkregen via het Centraal Bureau voor de Statistiek (C.B.S.).

Een nadeel van het samenvoegen van verschillende datasets uit verschillende steden is de vergelijkbaarheid van relevante indicatoren. In alle steden is voor een aantal delicten gevraagd of de jongere dit delict in de afgelopen twaalf maanden gepleegd heeft. Echter, er zijn ‘slechts’ zes delicten waarnaar in alle steden gevraagd wordt. Het gaat hierbij om diefstal uit winkels, vandalisme, graffiti, inbraak, wapenbezit en bedreiging van andere mensen om geld. Om deze reden kan jeugddelinquentie slechts gemeten worden aan de hand van deze delicten. Het voordeel van het samenvoegen van datasets uit verschillende steden is dat het mogelijk wordt om steden te vergelijken.

Het tweede databestand dat gebruikt wordt in deze dissertatie is de in 2001 in Nederland afgenomen WHO-studie ‘*Health Behavior in School-Aged Children (HBSC)*’. In deze studie is

informatie verzameld onder adolescenten op de middelbare school. Hen is onder andere gevraagd naar hun gezondheid en naar risicogedrag. Delinquent gedrag binnen deze studie wordt gemeten aan de hand van de ‘*Youth Self Report (YSR)*’. De delinquentieschaal uit de YSR is samengesteld uit 11 items met betrekking tot: zich schuldig voelen, omgaan met jongens/meisjes in moeilijkheden, liegen, liever omgaan met oudere jongens/meisjes, weglopen van huis, brandstichting, stelen van huis, stelen buitenshuis, vloeken, spijbelen en alcohol- of drugsgebruik. De individuele kenmerken afkomstig van de HBSC-studie zijn aangevuld met informatie van Nederlandse scholen afkomstig van de website ‘*Onderwijs in Cijfers*’.

Hoofdstuk 2 Het onderscheid tussen het stads-, buurt- en individueel niveau

In hoofdstuk 2 is onderzocht of er theoretische en empirische redenen zijn om het stadsniveau te onderscheiden in onderzoek naar jeugddelinquentie, naast het buurtniveau en het individuele niveau. Hiervoor beschrijven we eerst theorieën en eerder onderzoek met betrekking tot criminaliteit op stadsniveau. Daarnaast toetsen we of een deel van de variantie in jeugddelinquentie is toe te wijzen aan (kenmerken van) de stad, naast (kenmerken van) de buurt en individuele kenmerken.

In eerder onderzoek naar verschillen in criminaliteit tussen steden worden buurtkenmerken en individuele kenmerken vaak buiten beschouwing gelaten. In onderzoek dat zich concentreert op de invloed van individuele kenmerken en buurtkenmerken op jeugddelinquentie worden stadskenmerken juist buiten beschouwing gelaten. In dit hoofdstuk wordt een aanzet gegeven om de invloed die van deze drie niveaus uitgaat uiteen te leggen en vervolgens te integreren in onderzoek naar jeugddelinquentie.

Uit eerder onderzoek naar verschillen in criminaliteit tussen steden uit met name de Verenigde Staten blijkt dat er theoretische en empirische redenen zijn om de invloed van stadskenmerken te toetsen op delinquent gedrag van adolescenten. Ook uit de multilevel analyses die we uitvoerden blijkt dat er redenen zijn om het stadsniveau te onderscheiden in onderzoek naar jeugddelinquentie naast het buurtniveau en het individuele niveau. Uit de resultaten blijkt namelijk dat er verschillen tussen steden bestaan in jeugddelinquentie, naast verschillen tussen buurten en verschillen tussen individuen.

Interessant is verder de bevinding dat in Nederland het stadsniveau belangrijker is voor het verklaren van jeugddelinquentie dan het buurtniveau. Het is zelfs zo dat verschillen tussen buurten worden overschat, wanneer er niet wordt gecontroleerd voor verschillen tussen steden. Wordt er geen rekening gehouden met het stadsniveau dan lijkt het alsof er (grote) verschillen in

jeugddelinquentie bestaan tussen buurten. Echter, door rekening te houden met het stadsniveau blijken deze verschillen tussen buurten te verdwijnen. Dit betekent dat buurten binnen steden weinig verschillen in de mate van jeugddelinquentie.

De resultaten in hoofdstuk 2 tonen dus aan dat buurten slechts marginaal verschillen wat betreft zelf-gerapporteerde jeugddelinquentie. Deze bevinding is op zich niet verwonderlijk, gezien eerder onderzoek in Nederland van Rovers (1997), in België van Pauwels (2007) en in Duitsland van Oberwittler (2004), waarin ook slechts marginale verschillen werden gevonden tussen buurten. Echter, in vergelijking met resultaten uit de V.S. zijn onze resultaten wel opmerkelijk te noemen. In de V.S. worden namelijk wel duidelijke verschillen tussen buurten gevonden. Een mogelijke verklaring hiervoor is dat sociaal-economische verschillen tussen buurten in Nederland, en wellicht ook tussen buurten in andere West-Europese landen, minder extreem zijn dan in de V.S.

In dit hoofdstuk wordt geïllustreerd dat het stadsniveau een belangrijke rol kan spelen in de verklaring van jeugddelinquentie. Verder stellen we op basis van de resultaten voor om het stadsniveau, het buurtniveau en het individuele niveau zowel theoretisch, als empirisch te integreren in onderzoek naar jeugddelinquentie. Als voorbeeld kan onderzoek naar de invloed van armoede op criminaliteit gegeven worden. Op basis van de sociale stratificatietheorie kan de hypothese afgeleid worden dat naarmate de armoede in een stad of in een buurt hoger is, het criminaliteitsniveau hoger ligt, ook onder jeugdigen. Uit eerder onderzoek blijkt deze relatie ook op individueel niveau te bestaan: jongeren uit armere gezinnen plegen meer delicten dan jongeren uit rijkere gezinnen (Farrington, 1995). Om het effect van armoede dan op te splitsen naar de verschillende niveaus (stad, buurt en individu), zouden contextuele en individuele metingen van armoede op stads-, buurt- en individueel niveau simultaan getoetst moeten worden. Met behulp van multilevel analyses kan dan getoetst worden in hoeverre kenmerken van armoede gemeten op verschillende niveaus onafhankelijke effecten uitoefenen op jeugddelinquentie.

Hoofdstuk 3 Stads- en buurtdeterminanten van jeugddelinquentie

In hoofdstuk 3 staat de vraag centraal of en in hoeverre jeugddelinquentie wordt beïnvloed door stads- en buurtkenmerken, afgeleid van de sociale desorganisatietheorie, onder controle van individuele kenmerken, zoals leeftijd, geslacht en opleiding. In de sociale desorganisatietheorie wordt verondersteld dat het criminaliteitsniveau in een buurt of stad hoger is, naarmate de mate van sociale controle lager ligt. Buurten waarin de sociale controle lager ligt, worden onder andere

gekenmerkt door een lagere sociaal-economische status, sterkere etnische heterogeniteit en grotere aanwezigheid van gebroken gezinnen.

In dit hoofdstuk hebben we dezelfde hypothesen afgeleid van de sociale desorganisatietheorie op stads- en buurniveau om het onderscheid te kunnen maken naar het niveau waarop deze kenmerken een rol spelen in de verklaring van delinquent gedrag onder adolescenten. We hebben ons geconcentreerd op de volgende contextuele kenmerken, afgeleid uit eerder onderzoek naar de sociale desorganisatietheorie: economische status, etnische heterogeniteit en gebroken gezinnen. Deze kenmerken zijn op dezelfde manier gemeten op stads- en buurniveau. Daarna zijn ze tegelijkertijd getoetst om te bepalen op welk niveau (stad of buurt) welk kenmerk een effect uitoefent op jeugddelinquentie.

Uit de resultaten blijkt dat naarmate er meer een-ouder gezinnen woonachtig zijn in steden en/of buurten, adolescenten in deze steden en buurten meer delinquent gedrag vertonen. Ook op het individuele niveau blijkt dat jongeren uit een een-ouder gezin meer delinquent gedrag vertonen. Dit betekent dat het niet alleen nadelig is voor adolescenten om in een een-ouder gezin op te groeien, maar dat het bovendien ook nadelig is om in een omgeving te wonen waarin meer een-ouder gezinnen wonen. Een mogelijke verklaring hiervoor is dat sociaal-ecologische contexten gekenmerkt door een hoge concentratie van een-ouder gezinnen minder goed in staat zijn en minder mogelijkheden hebben om adequaat toezicht te houden op het gedrag van de jongeren in deze contexten, een veronderstelling die evenwel in vervolgonderzoek getoetst moet worden.

Hoofdstuk 4 De buurt als moderator

In hoofdstuk 4 staat de vraag centraal in hoeverre buurtkenmerken het effect van sociale controle kenmerken en vriendengroepkenmerken op delinquent gedrag conditioneren. Dat wil zeggen, er wordt onderzocht of de invloed van sociale controle kenmerken, zoals de band met ouders en de band met school, en vriendengroepkenmerken, zoals de omgang met deviante vrienden, op delinquent gedrag verschillend is in verschillende buurten.

Wat betreft de conditionerende invloed van de buurt nemen we aan dat negatieve stimuli meer aanwezig zijn in achterstandswijken. Deze negatieve stimuli zorgen ervoor dat kenmerken die adolescenten weerhouden van het plegen van delicten minder effectief zijn in achterstandswijken en dat kenmerken die adolescenten aanzetten tot het plegen van delicten juist effectiever zijn in achterstandswijken. We veronderstellen dat sociale controle kenmerken, zoals de band met ouders en de band met school, jongeren weerhouden van het plegen van delicten en

dus dat dit effect minder sterk is in ‘zwakkere’ buurten dan in ‘betere’ buurten. Verder verwachten we dat vriendengroepkenmerken adolescenten aanzetten tot het plegen van delicten en dat deze relatie sterker is in ‘zwakkere’ wijken dan in ‘betere’ buurten.

Gebruik makend van data afkomstig uit de Nijmeegse Jeugdmonitor uit 1999, blijkt uit de resultaten dat buurtkenmerken geen directe invloed uitoefenen op delinquent gedrag van adolescenten. Buurten blijken zelfs in zijn geheel niet te verschillen in delinquent gedrag. Kijken we evenwel naar het conditionele effect van de buurt, dan blijkt het volgende. In ‘betere’ buurten blijkt een goede relatie met ouders en betere schoolprestaties jongeren van delinquent gedrag te weerhouden. Deze verbanden worden echter niet gevonden voor jongeren in ‘zwakkere’ wijken. Het effect van negatieve attitudes ten opzichte van deviant gedrag, i.e. hoe meer men deviant gedrag afkeurt, op delinquent gedrag blijkt juist sterker te zijn in ‘zwakkere’ wijken dan in ‘betere’ wijken. Op basis van deze verschillende bevindingen in verschillende buurten lijkt het zo te zijn dat in ‘betere’ wijken familie en school belangrijk zijn in het weerhouden van adolescenten van deviant gedrag, terwijl het in ‘zwakkere’ buurten voornamelijk van de jongere zelf afhangt in hoeverre hij/zij zich weerhoudt van het plegen van delicten.

Overigens moet bij bovenstaande bevindingen wel een voorbehoud gemaakt worden. Deze bevindingen zijn niet gebaseerd op analyses van de gehele populatie: de buurten gekenmerkt door de minste achterstand (de ‘betere’ buurten) zijn vergeleken met de buurten gekenmerkt door de meeste achterstand (de ‘zwakkere’ buurten). Het zou dus zo kunnen zijn dat de gevonden resultaten specifiek gelden voor deze twee extremen. Echter, gezien het feit dat data zijn gebruikt uit een redelijk welvarende stad in Nederland met weinig grote verschillen in achterstand tussen buurten, zou het ook kunnen zijn dat onze bevindingen sterker naar voren komen in steden waarin grote verschillen bestaan in achterstandsniveau tussen buurten.

Hoofdstuk 5 School context en jeugddelinquentie

In Nederlands criminologisch onderzoek is nog relatief weinig aandacht besteed aan de invloed die de school als sociale context uitoefent op het delinquent gedrag van haar leerlingen. In hoofdstuk 5 gaan we daarom in op het effect van contextuele schoolkenmerken op delinquent gedrag van adolescenten, naast de invloed van de band met ouders, vrienden en school. Daarnaast stellen we ons de vraag in hoeverre het effect van de band met ouders, vrienden en school op delinquent gedrag verschilt tussen uiteenlopende scholen.

Hypotheses met betrekking tot de invloed van contextuele schoolkenmerken op delinquent gedrag van adolescenten leiden we af van de sociale desorganisatietheorie. Deze

theorie is ontwikkeld op basis van onderzoek naar verschillen in criminaliteitsniveau tussen buurten. Kort gezegd stelt deze theorie dat het criminaliteitsniveau in een buurt hoger ligt, naarmate de mate van sociale controle lager is. Wij passen deze stelling toe op schoolniveau en verwachten dat op scholen die meer moeite hebben met het uitoefenen van sociale controle op het gedrag van haar leerlingen, adolescenten meer delinquent gedrag zullen vertonen. We verwachten dat scholen met de volgende kenmerken meer moeite hebben met het uitoefenen van sociale controle: grotere scholen, scholen met meer leerlingen ten opzichte van de personeelsgrootte, scholen waar de leerkrachten minder ervaring hebben, scholen met jonger personeel, sterk etnisch heterogene scholen, scholen waar de band met school van de leerlingen zwakker is en scholen die zwakker presteren.

Wat betreft de conditionerende invloed van school op de relatie tussen de band met ouders, school en vrienden en jeugd delinquentie, verwachten we dat kenmerken die jongeren weerhouden van delinquent gedrag effectiever zijn op 'betere' scholen dan op 'zwakkere' scholen. Van kenmerken die jongeren aanzetten tot het plegen van delicten verwachten we dat deze minder effectief zijn op 'betere' scholen dan op 'zwakkere' scholen. Het idee hierachter is dat binnen contexten gekenmerkt door sociale achterstand meer negatieve stimuli aanwezig zijn die jongeren aanzetten tot het plegen van delicten, waardoor de invloed van kenmerken die jongeren weerhouden van dergelijk gedrag minder effectief zullen zijn.

Een eerste belangrijke bevinding is dat verschillen tussen scholen in de mate van delinquent gedrag van haar leerlingen voor een belangrijk deel zijn toe te schrijven aan verschillen in schoolpopulatie. Door te controleren voor een aantal demografische kenmerken (zoals geslacht, leeftijd, etniciteit en schooltype) worden de grootste verschillen tussen scholen in delinquent gedrag verklaard, maar nog niet alle verschillen.

Van de contextuele schoolkenmerken die we hebben verdisconteerd in dit onderzoek, blijkt de student-staf ratio, i.c. het aantal leerlingen ten opzichte van het aantal leraren en andere medewerkers op school, ook bij te dragen aan de verklaring van delinquent gedrag. Leerlingen op scholen waar de student-staf ratio hoger ligt, waar dus verhoudingsgewijs minder sociale controle plaats vindt, vertonen meer delinquent gedrag dan leerlingen op scholen waar dit ratio lager ligt. Wij veronderstellen dat scholen die gekenmerkt worden door een hogere student-staf ratio, minder goed in staat zijn om toe te zien op het gedrag van hun leerlingen en daardoor ook minder goed in staat zijn om leerlingen aan te spreken op hun gedrag. Vervolgonderzoek zal duidelijk moeten maken of deze verklaring het achterliggende mechanisme is wat deze relatie kan verklaren.

Wat betreft de conditionerende invloed van schoolkenmerken op de relatie tussen de band met ouders, vrienden en school en jeugddelinquentie is slechts één effect gevonden. De invloed van wat ouders weten van het gedrag van hun kinderen op delinquent gedrag is sterker op scholen met een hogere student-staf ratio dan op scholen met een lagere student-staf ratio. Dit betekent dat op scholen waar het lastiger is om toe te zien op het gedrag van leerlingen, ouderlijke kennis over het gedrag van hun kinderen, diezelfde adolescenten sterker weerhoudt van het plegen van delicten dan op scholen waar toezicht eenvoudiger is. Wellicht hebben we hier te maken met een compensatie effect: ouders compenseren het gebrek aan toezicht op school door sterker toe te zien en op de hoogte te blijven van het gedrag van hun kinderen.

Algemene conclusie en discussie

Met de resultaten in dit proefschrift wordt aangetoond dat steden en scholen als sociaal-ecologische context een belangrijke rol spelen in theoretisch gestuurd empirisch onderzoek naar de verklaring van jeugddelinquentie. De buurt, daarentegen, speelt slechts een marginale rol. Wij veronderstellen dat steden en scholen waar minder supervisie mogelijk is op het gedrag van adolescenten, minder goed in staat zijn om controle uit te oefenen op het gedrag van jongeren, waardoor deze jongeren eerder delinquent gedrag zullen vertonen. Adolescenten op wier gedrag wordt toegezien binnen sociaal-ecologische contexten en waarin ze verantwoordelijk worden gehouden voor hun gedrag, zullen beter leren wat sociaal aangepast gedrag is en zullen diensgevolge minder delinquent gedrag vertonen. Door het ontvangen en ontwikkelen van dergelijk ‘sociaal-ecologisch kapitaal’, leren adolescenten de in de maatschappij geldende waarden en normen, waaraan ze zich door hun gedrag conformeren. Deze redenering komt overeen met assumpties afgeleid uit de sociale desorganisatietheorie. In deze theorie wordt verondersteld dat het criminaliteitsniveau in een context hoger is, naarmate de mate van sociale controle lager ligt. Het verklarende mechanisme van deze relatie is dat een gebrek aan sociale controle betekent dat er een gebrek is aan *local guardians* (Van Wilsem, 2003).

Een alternatieve verklaring voor de gevonden resultaten binnen dit onderzoek is te vinden bij de *routine activities* benadering zoals gesteld door Osgood et al. (1996). Eén van de centrale stellingen van deze benadering is namelijk dat situaties waarin de mogelijkheden voor het plegen van delicten groter zijn, gekenmerkt worden door de afwezigheid van toezicht door volwassenen. Deze stelling kan ook toegepast worden op de eerder gevonden resultaten. Steden en buurten waar relatief veel een-ouder gezinnen wonen, kennen waarschijnlijk ook meer situaties waarin er een gebrek is aan toezicht door volwassenen. Ook op scholen waar de leerling-staf ratio

hoger ligt, is de kans groot dat dergelijke situaties zich vaker voor zullen doen dan op scholen waar deze verhouding lager ligt.

Met betrekking tot de van de sociale desorganisatietheorie afgeleide hypothesen op stads- en buurtniveau, bleek alleen het percentage een-ouder gezinnen in de stad of in de buurt een significant effect uit te oefenen op jeugddelinquentie. Voor het veronderstelde effect van sociaal-economische status en van etnische heterogeniteit op jeugddelinquentie hebben we geen bewijs gevonden. In vervolgonderzoek zal gekeken moeten worden wat het achterliggende mechanisme is met betrekking tot de bevinding dat naarmate er meer een-ouder gezinnen in een buurt of stad wonen, adolescenten binnen deze buurten of steden meer delinquent gedrag vertonen. Door mechanismen uit verschillende theoretische benaderingen af te leiden kan onderzocht worden welke theorieën vruchtbaarder zijn in onderzoek naar de invloed van sociaal-ecologische contexten op jeugddelinquentie.

De bevinding dat buurten slechts marginaal verschillen in de mate van jeugddelinquentie komt overeen met resultaten uit eerder onderzoek in Nederland (Rovers, 1997), België (Pauwels, 2007) en Duitsland (Oberwittler, 2004). In de V.S. worden daarentegen wel duidelijke verschillen gevonden tussen buurten, wat betreft de mate van jeugddelinquentie. Een mogelijke verklaring voor deze verschillen is dat het leven van adolescenten in Europese landen zich niet alleen afspeelt in de eigen buurt, maar ook in omliggende buurten. Dit komt voor een belangrijk deel doordat de school die zij bezoeken vaak niet in de eigen woonbuurt ligt. Een andere verklaring voor de afwezigheid van sterke buurtverschillen kan liggen in de gebruikte definitie voor de buurt. In dit proefschrift worden buurten namelijk gedefinieerd door de postcode. Dit is een administratieve definitie. Een dergelijke indeling van buurten komt niet per se overeen met de indeling van een buurt zoals inwoners die ervaren. Door buurten in te delen op basis van de indeling die buurtbewoners ervaren kan wellicht een beter passende benadering van de buurt als leefomgeving verkregen worden, waardoor verschillen tussen buurten in jeugddelinquentie sterker naar voren komen.

Een belangrijke beleidsaanbeveling die voortvloeit uit de resultaten van dit onderzoek, is dat jongeren binnen eenoudergezinnen en woonachtig in een omgeving waar veel eenoudergezinnen wonen extra aandacht behoeven. Ouders die alleen hun kind moeten opvoeden hebben het moeilijk om adequaat toezicht te kunnen houden op het gedrag van hun kinderen. Dit mechanisme treedt ook op in steden en buurten waarin relatief veel een-ouder gezinnen wonen. Om deze redenen zou er extra aandacht en hulp moeten zijn voor de problemen die een-ouder gezinnen ervaren in het toezicht houden op het gedrag van hun kinderen.

Verder bevelen we aan om de school als sociale context een belangrijkere rol te laten spelen in het beleid. Tot op heden wordt er een belangrijke rol toegedicht aan de rol van de buurt in het voorkomen van overlast veroorzaakt door jongeren. Uit onze resultaten blijkt echter dat de school als context een belangrijkere rol speelt dan de buurt voor wat betreft jeugddelinquentie. Dat is ook niet zo opmerkelijk gezien de tijd die jongeren doordeweeks doorbrengen op school. Het is daarom ook logisch dat de school een belangrijke rol speelt in de ontwikkeling van het gedrag van adolescenten.

Een maatregel die op schoolniveau reeds getroffen zou kunnen worden, is om scholen mogelijkheden te bieden om hun staf uit te breiden. Uit onze resultaten blijkt namelijk dat naarmate er minder staf rondloopt op school ten opzichte van het aantal leerlingen, jongeren op deze scholen meer delinquent gedrag vertonen. Door het aanstellen van meer stafleden worden deze scholen in staat gesteld om beter toe te zien op het gedrag van hun leerlingen. Daardoor zullen ze ook beter in staat zijn om leerlingen ook daadwerkelijk aan te spreken op hun gedrag. Verder zou er ook een preventieve werking uit kunnen gaan van een grotere staf. Leerlingen zien dan namelijk dat ze in de gaten worden gehouden, waardoor ze wellicht minder snel geneigd zijn om zich te misdragen.

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Appendix A

Did you commit one of the following acts in the last 12 months?

	No	Yes
Run away from home, and stayed away one or more nights	-0-	-1-
Dodged fare on a bus	-0-	-1-
Stolen something from a store valued less than 10 guilders (+/- 5 Euro)	-0-	-1-
Stolen something from a store valued more than 10 guilders (+/- 5 Euro)	-0-	-1-
Smashed up a lamp-post on purpose	-0-	-1-
Smashed up or damaged a car on purpose	-0-	-1-
Smashed windows on purpose	-0-	-1-
Smashed up a bicycle on purpose	-0-	-1-
Smashed up things in a bus or train on purpose	-0-	-1-
Smashed up or damaged a bus stop on purpose	-0-	-1-
Smashed up or damaged trees, bushes, or flowers in a park on purpose	-0-	-1-
Blackened objects, like a wall, bus stop or the interior of a bus	-0-	-1-
Took a bicycle of someone else, without returning it	-0-	-1-
Troubled someone or threatened someone to beat him up out on the streets, at school, in the disco, or in a bar	-0-	-1-
Beat someone up or hit someone in a way (s)he had to be treated by a doctor out on the streets, at school, in the disco, or in a bar	-0-	-1-
Set fire, for example in a cellar, a bicycle shed, a wooden shed, or somewhere else	-0-	-1-
Entered a school or house without permission with the intention to steal something	-0-	-1-
Bought or sold something of which you knew that it had been stolen	-0-	-1-
Grabbed money from a call box or vending machine	-0-	-1-
Pinched something at school from a fellow student, or from school	-0-	-1-
Been involved in a fight at a public area (like for example a soccer stadium, at a music festival, or on the streets)	-0-	-1-
Wounded somebody with a knife or other weapon	-0-	-1-
Carried a weapon with you (like for example a stiletto, knuckle-duster)	-0-	-1-
Threatened somebody with a weapon or threatened to beat him/her up for money or other valuable stuff	-0-	-1-

Curriculum Vitae

Gijs Weijters was born on September 8, 1978 in Breda, the Netherlands. He grew up in Terheijden, and graduated in 1996 from the Stedelijk Gymnasium Breda. He obtained his Master's degree in Sociology at the Radboud Universiteit Nijmegen in 2002. In the same year, he started as a PhD student at the Department of Social Science Research Methods at the Radboud University Nijmegen. In 2003, he joined the Interuniversity Center for Social Science Theory and Methodology (ICS). He is currently working as a researcher at the Research and Documentation Center (WODC), Ministry of Justice, the Netherlands.

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