

CAROLINE MELLGREN

WHAT'S NEIGHBOURHOOD GOT TO DO WITH IT?

The influence of neighbourhood context on crime and reactions to crime



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“The most pervasive fallacy of philosophic thinking goes back to neglect of context” (John Dewey, 1931).

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ABSTRACT

The overarching aim of this thesis is to contribute to an increased understanding of how the neighbourhood context acts to influence individual reactions to crime. The general framework is that the social and physical make-up of residential neighbourhoods influences individuals, over and above individual background characteristics. Disorder is an important neighbourhood-level factor and its presence is more or less pronounced in different neighbourhoods. It acts as a sign of a general urban unease and has potential negative consequences for the individual as well as for the community at large. Four studies have been conducted each with its own specific objective.

The first study reviews the Swedish crime survey literature in order to assess the national evidence for neighbourhood effects, paying special attention to methodological issues. Overall, the current literature provides mixed evidence for neighbourhood effects. Methodological issues were identified as obstacles to drawing general conclusions and specific areas that need improvement were identified.

The second study examines the origins of disorder at the neighbourhood level and the relationship between disorder and crime. Two theory-driven models of the relationship between population density, disorder, and crime are tested alongside an examination of whether these models are equally applicable to data collected in two cities, Antwerp in Belgium and Malmö in Sweden. The results found some support for direct effects of disorder on crime in both settings, independent of structural variables. Some differenc-

es between the two settings were observed suggesting that the disorder-crime link may vary by setting.

To further examine the influence of neighbourhood context, the role played by neighbourhood level disorder in relation to worry about criminal victimization has been tested in a multilevel model in the third study. Overall the hypotheses of the influence of both neighbourhood level and individually perceived disorder, in shaping individual worry were supported. Individual background explains most of the variance but neighbourhood context has independent effects on worry. Individual level perceived disorder mediated the effect of neighbourhood disorder on worry suggesting that the effect of context is indirect through its effect on individual perception.

The fourth study investigates whether it is possible to identify any unique neighbourhood effects on the extent to which residents apply crime preventive strategies. Initially some of the total variance in the dependent variables was found to be situated between neighbourhoods. This indicates that the neighbourhood context may influence individuals' willingness to take crime preventive action. As expected, individual characteristics explained a majority of this between-neighbourhood variance. An important finding is that the contextual variables appear to have different effects on different activities, highlighting the need to study different actions separately.

LIST OF PUBLICATIONS

The thesis consists of a summary and four studies. These are referred to by Roman numerals below:

I Mellgren, C (2011). Neighbourhood Influences on Fear of Crime and Victimization in Sweden – A Review of the Crime Survey Literature. *Internet Journal of Criminology*. ISSN 2045-6743 (Online).

II Mellgren, C., Pauwels, L., and Torstensson Levander, M. (2010). Population Density, Disadvantage, Disorder and Crime. Testing Competing Neighbourhood Level Theories in Two Urban Settings. In: Cools, M., De Ruyver, B., Easton, M. et al.. (eds). *Safety, Societal Problems and Citizens' Perceptions. New Empirical Data, Theories and Analyses*. Governance of Security Research Paper Series (GofS), Vol 3. 183-200. Antwerp, Maklu.

III Mellgren, C., Pauwels, L., and Torstensson Levander, M. (2011). Neighbourhood Disorder and Worry About Criminal Victimization in the Neighbourhood. *International Review of Victimology*. Vol 17, 3: 291-310.

IV Mellgren, C., Torstensson Levander, M., and Pauwels, L. *Residents' involvement in crime preventive actions: what is the role of neighbourhood context?* (Submitted manuscript).

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Mellgren has designed the studies, performed the statistical analyses, analysed the results and written the manuscripts. All authors have contributed with valuable comments on the content. All authors have read and approved the final manuscripts. The Malmö data for studies II, III and IV were provided by Torstensson Levander and the Antwerp data used in study II were provided by Pauwels.

INTRODUCTION AND OVERVIEW

Most people would agree that our surroundings have some influence on our everyday life experiences. Differences between residential neighbourhoods manifest themselves in e.g. housing type and the general state of the buildings and surroundings, the clustering of population groups, and the supply of public and private services. It would be surprising if these differences did not give rise to varying experiences of everyday life. The question however is whether neighbourhoods *per se* have independent effects on people regardless of who these people are.

There is a strong belief based on American studies that neighbourhoods in their own right have negative consequences for individuals, so called neighbourhood effects. This belief, coupled with the policy implications of this line of thinking¹ (Brännström, 2006), and the fact that neighbourhood influences have only been studied empirically to a limited extent in Swedish contexts, spurred my interest in neighbourhood effects on individual outcomes.

The overarching aim of this thesis is to contribute to an increased understanding of how the neighbourhood context, with a special focus on disorder, acts to influence individual reactions to crime. Four studies, each

¹ Since 1998 the Swedish government has had an explicit policy with the goal of alleviating the consequences of segregation in metropolitan areas and of working towards a target of health equality within the population (Finansdepartementet, 1998; Prop 1997/98:165; SOU 1998:25).

with its own specific objective, have been conducted, with the ultimate goal being to contribute to well informed preventive efforts that will promote an environment of urban equality, where neighbourhoods are both perceived as being safe and provide good living environments for children and adults.

The first study reviews the Swedish crime survey literature in order to assess the national evidence for neighbourhood effects, paying special attention to methodological issues. The review contributes to the literature by considering the strengths and limitations of existing research and gives specific recommendations for the direction of future research.

The second study examines the origins of disorder at the neighbourhood level and the relationship between disorder and crime. Two theory-driven models of the relationship between population density, disorder, and crime are tested alongside an examination of whether these models are equally applicable to data collected in two cities, Antwerp in Belgium and Malmö in Sweden. Most studies are performed in a single setting and this study therefore provides valuable insight into the comparability of theoretical models across settings.

Study three and four develop and test multilevel models to assess the influence of neighbourhood context on reactions to crime. Multilevel models deal with many of the problems associated with studying the effects of a higher level, i.e. the neighbourhood, on individual outcomes. Two types of reactions to crime are investigated: worry about criminal victimization and citizens crime preventive strategies. To further examine the influence of neighbourhood context, the role played by neighbourhood-level disorder in relation to worry about criminal victimization is tested in a multilevel model in the third study. The fourth study investigates whether there are neighbourhood effects on the extent to which residents apply crime preventive strategies.

Reactions to crime have been established as important factors that help shape communities and disorder is a powerful force of social differentiation with consequences for individuals and for society. Therefore the present thesis also attempts to contribute to the development of strategies to

prevent neighbourhood effects. Research on neighbourhood effects has the potential to inform policy makers about whether it is more effective to target individuals or areas, or both. Thus, this thesis contributes to the criminological literature and to practice by applying a multilevel framework and focusing on how neighbourhoods act to influence individuals. Only few studies have examined the role played by neighbourhood context in relation to individual reactions to crime in Swedish settings. Addressing neighbourhood effects on individual outcomes can provide important insights on the possible effects of living in neighbourhoods with certain characteristics and may enhance interventions.

Studies II, III and IV utilize data from the Malmö Fear of Crime Survey conducted in 1998, and thus the empirical context of this thesis is a Swedish metropolitan area in the 1990s.

BACKGROUND

“Neither criminal behavior nor society’s reaction to it occurs in a social vacuum – for this reason, criminology, as a discipline, is inherently a multilevel enterprise” (Johnson, 2010: 615).

What is a neighbourhood?

One concept that was central to the Chicago ecologists and that remains central to urban analysts today is the “natural area”. In 1926, Zorbaugh described the natural area as *“a geographical area characterized both by a physical individuality and by the cultural characteristics of the people who live in it”* and as *“...the unplanned, natural products of the city’s growth”* (Zorbaugh, 1926, cited in Timms, 1971: 6). Inhabitants were described to *“...give to the area its peculiar character”* (ibid.). Robert Park later introduced the concept “neighbourhood” and defined the natural area as an ecological collective and the neighbourhood as a society (Timms, 1971).

Neighbourhoods vary by population composition and they change over time, just as the composition of families or company staff changes. A neighbourhood can be defined in relation to its composition, e.g. in the form of ethnic groups residing in the area, the socio-economic status of residents, their age and their family type. The selection of individuals to different neighbourhoods within a city typically reflects the economic situation of individuals, housing policy, access to public transport and the distribution of public goods such as schooling. These structural conditions, together with the demographic composition of the residents, contribute to the varying capacity of neighbourhoods to “function cohesively” (Earls and Carlson, 2001). In a neighbourhood where people often move in and

out, for example, durable social relations between neighbours are more difficult to maintain than is the case on a street with a low population turnover. In turn, socially cohesive neighbourhoods characterised by stable relations provide a more favourable climate for collective action in support of the neighbourhood. This function of the neighbourhood has been found to be important for individual development and for attitudes and behaviour (Sampson et al., 1997: 1999).

The question “what is a neighbourhood?” is an important methodological question for anyone concerned with neighbourhood influences. Ultimately, however, it is a theoretical question (Sirotnik, 1980), and one that requires careful consideration. What is considered to make up a neighbourhood may vary depending on who perceives it and what the defining perspective is. The neighbourhood is a smaller residential area embedded in a hierarchy of larger units such as cities, municipalities and nations (Suttles, 1972; Sampson, Morenoff and Gannon-Rowley, 2002). Building on Suttles’s (1972) definition, Kearns and Parkinson (2001) described the neighbourhood as existing on three levels. At the first level we find the smallest home area, which is important for socializing and forming norms. The home area is situated within a locality which consists of the local housing market, local shops and activities. This level is likely to correspond to the administrative definition of neighbourhoods, which is often also used to define the units of analysis in empirical research. At the highest level of the hierarchy we find the wider region, city or municipality.

Some have argued that the neighbourhood has lost its significance completely in a globalized world characterised by a significantly increased activity area (Fisher, 1982) and that the residential neighbourhood has a limited influence on social interaction (Timms, 1971; Castells, 1989). This proposed loss of significance may be due to: increased mobility within the city as a result of improvements to public transport; the free choice of schools for children; adolescent leisure activities; work; increased travel around the globe; and the internet-related communications revolution, with social networks today existing in many locations outside the neighbourhood (Baybeck and Huckfeldt 2002). By contrast, Kawachi and Berkman (2000) have argued that as segregation continues to increase, the

neighbourhood remains as relevant an arena for study as it ever was when it comes to addressing disparities in health and health-related problems.

It has been argued that the significance of the neighbourhood varies across different stages of the life-course (Lupton, 2003). It may have lost its significance as the main source of social norms for teenagers who spend more time in school and in leisure time activities elsewhere than they do in the neighbourhood itself (McCulloch and Joshi, 2000), but it may be more important for the parents of small children who spend their time playing in the neighbourhood (Atkinson and Kintrea, 2000), for older people who are largely confined to their immediate surroundings as a result of physical constraints, or for unemployed residents in disadvantaged areas (Forrest and Kearns, 2001).

Neighbourhood effects

Neighbourhood influences constitute a significant element in ecological models that view people's surroundings as an important factor in relation to human development. A central assumption of these models is that people develop within a context and that this context cannot be ignored when studying human behaviour and attitudes (Bronfenbrenner, 1994; Brooks-Gunn et al., 1993).

Questions on the distribution of crime and crime-related problems across neighbourhoods have been central to criminology ever since Henry Mayhew's discovery, in the 1850s, that criminal offenders were unequally distributed in England and Wales, and Charles Booth's subsequent mapping of crime in London. The place where you live, the residential neighbourhood, has been found to influence a range of social phenomena including crime, worry about crime, health-related problems such as myocardial infarct and mental health, and also citizenship, confidence in the police, property protection, and general well-being.

A neighbourhood effect can be defined as an effect of the local neighbourhood context on individual-level behavioural or attitudinal outcomes that exists independently of the compositional make-up of the neighbourhood. The key idea that drives research into neighbourhood effects on crime and crime-related problems is that *“social and organizational characteristics of*

neighborhoods explain variations in crime rates that are not solely attributable to the aggregated demographic characteristics of individuals” (Sampson et al., 1997: 918).

The current interest in neighbourhood effects has multiple origins. Criminological inquiry was for a long time dominated by a micro-level perspective and a search for causes in individual characteristics, or the contemporary so called risk-factor approach (Farrington and Loeber, 1999). The conventional focus on individual causes of crime was challenged, however, in the 1930s by Shaw and McKay’s study of social disorganization and Merton’s study of anomie (Pratt and Cullen, 2005). These theories pointed towards macro-level processes as important predictors of crime, and they centred on places rather than people. The study of the neighbourhood as a geographical area characterised by collective social properties and physical characteristics that might affect the individuals inhabiting the area thus has a long history in urban sociology and criminology. Scholars such as Robert Park, Ernest Burgess, Henry Shaw, Clifford McKay and others from the so-called Chicago school laid the foundations for contemporary ecological research. When studying juvenile court delinquents in twenty American cities, Shaw and McKay (1942; 2006) found that rather than being evenly distributed across the city, delinquents were concentrated to areas of the city characterized by high population turnover, low socio-economic status and ethnic heterogeneity. Juvenile delinquency was also found to be correlated with the distribution of adult crime, tuberculosis and mental disorders. Since these factors were so highly correlated, they were viewed as being part of the same problem and as having a common underlying cause. This cause was probably to be found in the collective dynamics of the neighbourhood, as produced by certain structural conditions, and was not solely due to the individuals residing in the areas. These findings thus encouraged a shift of focus from individual characteristics towards causes found in the community, a view which remains highly relevant to the contemporary research agenda on neighbourhood effects. Social disorganization theory hypothesized that structural conditions, e.g. residential mobility, ethnic heterogeneity and socioeconomic status, create the conditions in which community members exercise social control. In socially disorganized neighbourhoods, residents are unable to exert social control and regulate

people's behaviour in public spaces, which allows crime and disorder to penetrate the neighbourhood.

Shaw and McKay also found that, even when the composition of the neighbourhood changed, disadvantage continued to affect crime rates, which suggests that crime is influenced by factors other than a neighbourhood's demographic composition (Browning, 2002).

With the recognition of the neighbourhood as an important factor in relation to crime causation, the idea that prevention should be area-based was also born. *"If juvenile delinquency is essentially a manifestation of neighbourhood disorganization, then evidently only a program of neighborhood organization can cope with and control it. The juvenile court, the probation officer, the parole officer, and the boys' club can be no substitute for a group of leading citizens of a neighborhood who take the responsibility of a program for delinquency treatment and prevention"* (Burgess, 1942 (2006): Introduction). Shaw and McKay writes that *"...[D]elinquency is a product chiefly of community forces and must be dealt with, therefore, as a community problem..."* (Shaw and McKay, 1942 (2006): 442).

A group of macro-level theories were later developed and further spurred the interest in macro-level dynamics. In particular, these included routine activity theory (Cohen and Felson, 1979), Blau's (1972) and Blau and Blau's (1982) work on inequality, and later refinements of social disorganization theory by Sampson and Groves (1989), for example. These theories not only provided later scholars with the opportunity to understand crime and crime-related problems from a macro-level perspective but also provided the methodological basis needed to perform such studies.

The study of geographical areas can be divided into two traditions, which use the neighbourhood in different ways. In the first, the community study, which often takes the form of a case study, it is the neighbourhood itself that is of interest, and in most cases researchers working in this tradition focus on disadvantaged neighbourhoods one at a time (see for example Forrest and Kearns, 1999 or Kallstenius and Sonmark, 2010, for a study focusing on schools and segregation in Sweden). In the other research tradition, the neighbourhood unit is not of primary interest per se, and the

focus is rather directed at the characteristics of the people who reside in these units and at how the collective exerts influence on the individual (Robinson, 1950). In this tradition, the study objects include a number of neighbourhoods, both disadvantaged and prosperous, and the researcher is interested in identifying so-called “neighbourhood effects”. Community studies are for the most part of a qualitative character whereas the latter tradition is dominated by quantitative approaches similar to those employed in the studies included in this thesis.

Largely inspired by William Julius Wilson’s seminal work “The Truly Disadvantaged” (1987), recent decades have witnessed a renewed, growing academic as well as political interest in the ways in which individual behaviour, attitudes, and life-chances are affected by characteristics of the residential neighbourhood, independently of the effects of individual characteristics. This trend can be seen in the U.S, in Sweden, and in Western Europe in general (van Gent et al., 2009). The renewed interest in the impact of neighbourhood characteristics has resulted in a significant amount of research focused on a wide range of outcomes. Results have generally found significant but small unique neighbourhood effects. Swedish research in this tradition has been limited, although the number of peer-reviewed works published in the first decade of the 21st century suggests that the field has a promising future. The most substantial benefits from criminological studies of this kind are probably related to the ambition to determine which types of crime prevention policy are most likely to succeed: area-based interventions, interventions that target individuals, or a combination of the two (McCulloch and Joshi, 2000; McCulloch, 2001; Buck, 2001).

Context and composition

Differences in peoples experiences of everyday life between neighbourhoods may arise because certain population groups, such as those more inclined to feel fear of crime (e.g. the elderly, women, and individuals with lower socio-economic status), are concentrated to certain areas as a result of selection processes. This is labelled a composition effect. According to a compositional explanation, these individuals would feel equally afraid wherever they lived, and the neighbourhood context per se would have little effect on this. Obvious examples of composition effects include the dis-

tribution of patients to different specialist clinics, or of children and adolescents of different ages to primary school, secondary school and college. By contrast, a contextual effect arises when people with the same characteristics experience different levels of fear of crime depending on the characteristics of the areas in which they live and not depending on who they are (Curtis and Jones, 1998).

Multilevel analysis

One of the first reviews of research on neighbourhood effects was ultimately pessimistic regarding this type of research (Mayer and Jencks, 1989). One of the main problems identified by the assessment was that studies generally failed to measure the intervening mechanisms that exist between structure and individual outcomes. A second problem was that the authors found no good estimates of how much the individual outcomes, e.g. worry about crime or general well-being, varied between neighbourhoods.

This latter problem was partly resolved through the development of new software, and this further increased the level of research interest in neighbourhood effects. Multilevel analysis, also referred to as hierarchical modelling, contextual effects models, mixed effect analysis, and random effects analysis (Twisk, 2006), provides both a framework and a statistical tool for analysing the relationship between the individual and the setting. It takes into account the dependency of observations that arises from objects belonging to the same group. Multilevel analysis was originally developed for the purposes of educational research, as a means of modelling differences in the performance of pupils depending on the teacher or the school environment (e.g. Goldstein, 1987).

There are a number of theoretical reasons for employing multilevel models. Everything and everyone is surrounded by context. At home, the context is the family. Other contexts include the workplace, day-care, the school, and the residential neighbourhood together with its social and physical make-up. We are also embedded in a cultural and political context that affects the socio-economic structures of the society in which we live. If we fail to include context, we risk falling foul of a number of fallacies, of which the most widely acknowledged are the “ecological fallacy” (Robinson, 1950) and the “atomistic fallacy” (Hox, 2002). Simply put, we

risk falling into the ecological fallacy if we make inferences about individual relationships on the basis of aggregate data from a higher level (e.g. the neighbourhood). Robinson illustrated this situation by comparing the results from a correlation between foreign birth and literacy at the individual level and at the aggregate level. The differences were significant. The aggregate level analysis showed a clear connection between the number of foreign born in a state and literacy but at the individual level the opposite relationship was found, i.e. foreign born were on average less literate (Robinson, 1950; see Grotenhuis et al., 2011 for a re-examination of Robinson's study with slightly corrected results).

Applied to a classic example, Durkheim's ([1897] 1993) analysis of suicide showed that countries with a high proportion of Protestants had higher suicide rates. This does not necessarily mean that Protestants are more likely to commit suicide by comparison with Catholics. Nor does it mean that we cannot use individual-level data to measure collective properties. Instead it stresses the need for analyses to be performed at the appropriate levels: "fallacies are a problem of *inference*, not of *measurement*" (Luke, 2004: 6).

We instead risk falling into the atomistic fallacy if we assume that observations about relationships found at the individual level also hold for groups.

Theoretical framework

One important fact is that social and structural characteristics, including, but not limited to, socio-economic status, residential stability, and immigrant composition vary systematically across communities. The role of disadvantage has been emphasised particularly strongly in both classical and contemporary versions of social disorganization theory. Crime-related problems such as people's reactions to crime have consistently been found to coincide with problems related to public health and often to cluster together with more structural dimensions of disadvantage, such as concentrations of poverty. It has been argued that urbanization results in economic, ethnic, social and demographic segregation and in disadvantage and that disadvantage in turn causes increases in crime and disorder.

From a theoretical point of view, the aforementioned social disorganization theory has developed into a “systemic” theory, stressing the importance of studying the work of social mechanisms, e.g. dimensions of social cohesion and trust, rather than the structural determinants of neighbourhood crime. Systemic theory has its roots in the ideas of early scholars such as Robert Park on the importance of community stability for community life. According to Park (1929), *“It is probably the breaking down of local attachments and the weakening of the restraints and inhibitions of the primary group, under the influence of the urban environment, which are largely responsible for the increase of vice and crime in great cities”* (Park, 1929, [1921]: 312). Basically, stable neighbourhoods would produce the initial structural conditions necessary for the development of local social ties, which would in turn foster informal control. This perspective has been theoretically revived in sociology through the work of Kasarda and Janovitz (1974) and Granovetter (1973), and in criminology through the work of scholars such as Byrne and Sampson (1986) and Bursik and Gasmick (1993), with the organization of local communities continuing to be a core factor in theories following in this tradition. Bursik and Gasmick (ibid.) introduced to the field of criminology the idea that weak neighbourhood ties are important inhibiting forces in relation to the neighbourhood distribution of crime. From an empirical point of view, contemporary variants of the social disorganization perspective have been successfully employed in the explanation of delinquency rates (Ouimet, 2000), crime occurrence rates, victimization rates (Smith and Jarjoura, 1988) and neighbourhood levels of fear of crime² (Taylor and Covington, 1993).

The main focus of this thesis is on how the neighbourhood context influences individual reactions to crime. More specifically worry about criminal victimization and residents’ crime preventive strategies are examined. Two theoretical models originating from social disorganization theory have at-

² The main problem with so-called “fear of crime research” is that the term fear of crime covers a wide range of concepts (see e.g. Vanderbeem, 2006 for a discussion of the different subconcepts of fear of crime). These include risk, worry, anxiety, safety and insecurity (Litzén, 2006; Torstensson Levander, 2007). Williams et al. (2000) suggest that fear of crime should be replaced with the term worry about crime. The questions in both the Malmö Fear of Crime Survey and the Swedish Crime Survey (SCS) employ the term “worry” and not “fear”. Since the term used in this thesis is worry about criminal victimization (except in study I) this introductory chapter will mainly employ the term “worry”.

tracted a particularly significant amount of academic interest, and direct a particular focus at the role of the neighbourhood context for reactions to crime, namely Broken windows theory and collective efficacy theory. Both models posit the importance of neighbourhood disorder as a key concept.

Neighbourhood disorder

Findings from the U.S. National Crime Victimization Survey, first launched in 1972, showed that a significantly larger proportion of the population reported worry about crime than had actually been exposed to crime (Cook and Skogan, 1984). Subsequent research has also commonly found, for example, that women and the elderly report the highest levels of worry about crime but that they are victimized the least. At the same time, men report the lowest levels of worry about crime and report being victimized the most (for a review, see Hale, 1996). This discrepancy has led researchers to look to explanations other than victimization in order to explain worry about crime. In the mid 1970s, for example, Wilson (1975) proposed that visual signs of disorder were the key mechanism influencing individual worry about crime, while Garofalo and Laub (1978) proposed that the worry reported in surveys comprised more than simply worry about crime and instead represented more of a general sense of concern, or “urban unease”.

Disorder has been referred to by many names in the literature, including but not limited to incivilities, environmental cues and signs of danger and decay. Skogan (1990: 21) defined disorder as “*direct, behavioral evidence of disorganization*”. These visual signs were later termed social and physical incivilities by Lewis and Maxfield (1980). The terms social incivilities/social disorder refer to behaviours such as loitering and public drinking, whereas the terms physical incivilities/physical disorder refer to visible signs in the surroundings, such as graffiti, litter in the streets and broken windows. Empirically, disorder has been measured in an array of ways with varying indicators: as a combined scale of social and physical disorder or with social and physical disorder as different measures. It is not easy to make a clear distinction between social and physical disorder and they seem to represent one underlying concept (Ross and Mirowsky, 1999; Steenbeek, 2011). As an example, graffiti is a type of physical disorder but at the same time it signals the presence of the people who created it, a type

of social disorder (see Ross and Mirowsky, 1999: Appendix 1, for an overview of operationalisations of disorder in empirical studies).

The initial focus of early ideas was directed at the role of disorder in shaping worry about crime viewed primarily as an affective reaction to crime (see Ferraro, 1995 for a discussion of the different dimensions of worry) but disorder has also been used to explain risk perception, i.e. the cognitive dimension of worry about crime (e.g. Ferraro, 1995; Robinson et al., 2003). Further, the focus was, to begin with, not explicitly directed at the community context but rather at the psychological processes triggered by perceptions of disorder (Taylor, 1999).

The move of theories of disorder away from a focus on psychological processes towards an ecological model was initiated by Hunter in *“Symbols of Incivility: Social Disorder and Fear of Crime in Urban Neighborhoods”* a few years after he had first proposed that mechanisms other than crime helped shape individuals fear. In an attempt to answer the question *“what are people afraid of?”*, Hunter (1978: 2) argued that people’s worry about crime was influenced not only by variations in personality, but also by situational factors, i.e. social order and incivilities. In summary, his main argument was that both incivilities and crime constituted manifestations of social order and that incivilities influenced people’s worry about crime more than actual crime.

The great “breakthrough” for disorder came with Wilson and Kelling’s (1982) extensively cited article in *Atlantic Monthly*, *“Broken Windows”*. As a result of the publication of this article, the disorder model or “broken windows theory” came to have a huge impact on policy, and order-maintenance policing was launched in the U.S. Broken windows theory argues that there is a causal relationship between disorder and crime; thus the concept of order-maintenance policing builds on the idea that reducing disorder will reduce crime. The empirical support for order-maintenance policing in its current form is contested, however, and remains the subject of much debate (see Gau and Pratt, 2008 for a discussion of this empirical support). Skogan (1986; 1990) subsequently renamed the model “disorder and decline”. Skogan situated the mechanisms at the neighbourhood level and emphasized the longitudinal perspective. He argued that disorder de-

stabilized neighbourhoods and started a spiral of decline. In Skogan's model changes in individual behaviour was the outcome and the key mechanism linking disorder to decline was a weakening of informal social control in the neighbourhood.

Interpreting disorder

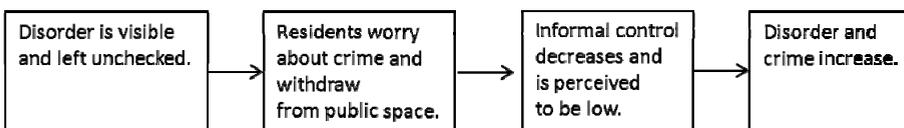
Disorder, irrespective of whether it takes the form of social or physical disorder, has been proposed as acting through visible signs of crime and as suggesting that nobody in the area cares. This in turn heightens the perceived risk of becoming a victim and generates avoidance behaviour and emotional anxiety. Furthermore, the presence of disorder in neighbourhoods signals not only the potential for crime to occur but also that neighbourhoods are deteriorating and are caught up in a negative spiral of urban decay. People living in neighbourhoods with a high level of perceived disorder report more worry and lower levels of integration and of participation in formal organisations (Ross and Jang, 2000).

The broken windows model thus involves a cognitive process whereby the causal chain of the model is triggered when residents interpret disorder, e.g. in the form of litter on the street, graffiti, or rowdy youths, as a sign of weakened social control and of the fact that nobody in the neighbourhood cares. These signs of disorder cause worry and withdrawal from public space, decreasing the number of "eyes on the street" (Jacobs, 1961) and allowing crime to penetrate the community. The "signal-function" of disorder is of particular interest for explaining reactions to crime. The signal that is produced by seeing crime or disorder comprises an expression, some form of content and an effect (Innes, 2005). The expression consists in the visual signs of disorder or the criminal event that is perceived by the onlooker. The resulting risk perception, that may be focused on one's own safety, one's property, or on friends and loved ones (compare the concept "altruistic fear" – see for example Litzén, 2006), constitutes the signal's content. The final component is the effect of the perceived signal. This effect may be emotional (e.g. anxiety, fear, a change in how the person feels), cognitive (e.g. increased risk, a change in how the person thinks and how often he/she worries about criminal victimization) or behavioural (e.g. withdrawal from public space or increased protection, a change in how the person behaves). If any of these conditions is missing, e.g. if the

event does not result in a change of how the person feels, thinks or behaves the signal (e.g. disorder) is not a signal.

Disorder works as a cue from the perspective of two different actors: the ordinary resident and the offender. From the “victim’s” perspective, the link between disorder and crime is indirect, and functions through its effect on worry about crime, which in turn leads to withdrawal from public space “creating the conditions in which crime can flourish” (Bratton and Kelling, 2006:2). From the perspective of the offender, the effect is assumed to be more direct, since disorder signals that no one in the neighbourhood cares and that there is little cost associated with committing a crime (Wilson and Kelling, 1982). Figure 1 summarizes the theoretical model.

Figure 1. Theoretical model of The Broken Windows model.



Source: adapted from Hinkle, 2009: 12

Collective efficacy

Building on the systemic model developed by Kazarda and Janowitz (1974), Sampson and Groves (1989) combined census data with data from the British Crime Survey to investigate the effects of socioeconomic status, residential mobility, ethnic heterogeneity, family disruption and urbanization on community organization. They also examined the question of how community organization (in the form of local friendship networks, unsupervised teenage peer groups, and low organizational participation) mediates the effect of structural conditions on crime and delinquency (for an illustration of the theoretical model, see Figure 2, Sampson and Groves, 1989: 783). Results supported the hypothesized pathways, with disorganized communities showing higher levels of crime. The findings also showed that the effects of structural characteristics on crime were to a large extent mediated by community organization. This study, which has become a

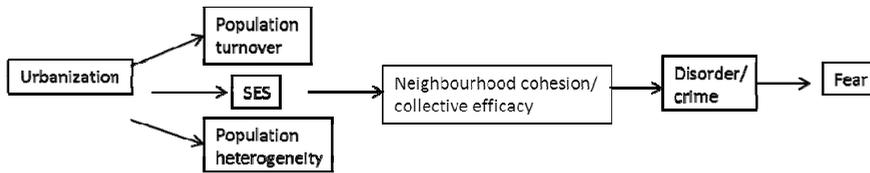
classic that is often cited in the field of criminology, also re-established the importance of social disorganization theory, which in the mid 1980s had been labelled “little more than an interesting footnote in the history of community-related research” (Bursik 1986:36).

Building on this test of social disorganization theory, and looking to develop it further as a refinement of social capital theory (Coleman, 1988), Sampson and colleagues then introduced the theory of collective efficacy (Sampson, et al., 1997; 1999). The concept of collective efficacy is based on shared norms and values within the community (Sampson, et al., 1997; Sampson, 2002), and is conceptually quite similar to Thrasher’s (1929) view of community organization, as outlined in his study of Chicago youth gangs. According to collective efficacy theory, all residents share the common goal of living in a safe neighbourhood that is free from crime and disorder. The best chance of achieving this goal lies in the neighbourhood’s ability to self-regulate and is thus dependent on how successful the community is in maintaining order in public places so that crime is not allowed to penetrate the area.

One particular merit of contemporary collective efficacy theory lies in the way in which it defines the mechanisms of informal control that lead to low neighbourhood crime rates. Collective efficacy is defined as social trust and cohesion among neighbours, combined with their willingness to intervene on behalf of the common good to reduce crime and produce order in the community (Sampson, et al., 1997). The existence of social trust constitutes an essential condition for the fostering of informal social control in neighbourhoods, and thus also for the willingness to intervene for the common good. “[I]t is the linkage of mutual trust and the willingness to intervene for the common good that defines the neighborhood context of collective efficacy” (Sampson et al., 1997: 919). Neighbourhood watch, for example, is based on the idea that neighbours will act collectively against crime and disorder, mainly through surveillance of the neighbourhood and by looking out for one another’s property (Bennett, 1990; Yarwood and Edwards, 1995).

Figure 2 below outlines the theoretical underpinnings of collective efficacy theory.

Figure 2. Theoretical model of Collective Efficacy theory.



Source: adapted from Markowitz et al. (2001).

Concluding remarks

The broken windows model and collective efficacy theory are often viewed as competing theories, mainly because of their differing views on the crime-disorder link. But, “...collective efficacy, as a very important ecological concept, is not totally new to the broken windows theory. In fact, as the bottom line of informal social control, it is implicitly part of the explanatory mechanisms in the theory.” (Xu et al., 2005: 156). The Broken Windows model states that unattended to disorder leads to worry which may cause people to withdraw from public space. This makes people less likely to intervene, thus causing a reduction in social control or in fact in collective efficacy (Hinkle, 2009). However, few studies have been able to properly evaluate the theories by including the temporal sequencing and all relevant variables. Hinkle (2009) provides one of the few attempts to evaluate all of the proposed causal relationships in the broken windows model. With this being a difficult task he concludes that only with large, longitudinal datasets including both objective and perceptual measures of crime and disorder “...can we ever have a full understanding of the validity of the broken windows thesis, or satisfactorily resolve the debate over broken windows and collective efficacy” (Hinkle, 2009: 124). Even though the two models disagree in some respects, disorder remains an influential aspect of neighbourhood context in both theories.

Regardless of position in the crime and disorder debate, for anyone who is interested in neighbourhood effects on reactions to crime, it is both compelling and necessary to understand the concept of disorder in particular (Wilson and Kelling, 1982; Sampson, 1997; Wikström, 2009; Hardyns,

2010). This is true for a number of reasons. First, disorder is a powerful force of social differentiation. Visible signs of social and physical disorder have consequences not only for the individual, but for communities and for society at large. Although most empirical evidence of consequences for individuals relates to worry, people living in disorderly neighbourhoods, as opposed to those living in orderly neighbourhoods are more often afraid of walking alone at night in their own neighbourhood, mistrust other people to a higher degree, and feel powerless (Ross, 2011). Reactions to crime have been established as important factors that help shape communities. As a consequence of worry people may for example withdraw from public space and avoid performing certain activities (Ross, 1993; Pain, 2000). As such, disorder may increase isolation and restrain people's activity space (Ross and Mirowsky, 2009).

At the community level, isolated people does not form social ties with neighbours and less eyes on the streets lead to weakened social control and low collective efficacy (Ross and Mirowsky, 1999). Other consequences include falling house prices (Skogan, 1990; Taylor, 1995; Sampson and Raudenbush, 1999), which causes people with financial resources to move out of the area, leading to concentrations of disadvantage. Further, the presence or absence of disorder further contributes to an area's reputation as being "good" or "bad". This reputation affects investors, the infrastructure of the area, out-migration, and the self-esteem and morale of the area's residents (Macintyre et al., 2002; Sampson and Raudenbush, 1999; Ross, 2000; Perkins and Taylor 1996). The development of a "bad" reputation may also lead to a decrease in neighbourhood satisfaction (Robinson et al., 2003). The presence of disorder also has implications for society at large, and may lead to lower confidence not only in the police's ability to maintain order but also to a questioning of the state as a whole (Hunter, 1978).

The purpose of this introductory section has been to provide a frame of reference for research on neighbourhood effects in general and to outline the neighbourhood context of reactions to crime. In the theoretical framework, neighbourhood disorder is viewed as an important part of individuals' surroundings that can be interpreted as risky and hazardous. This may ultimately lead to increased worry and may affect the likelihood of resi-

dents taking crime preventive actions. The structural antecedents of disorder have also been discussed.

It is important to further our understanding of how disorder in particular works to influence people, since it has the potential to produce severe consequences for both the individual and the wider community. Against the theoretical backdrop of broken windows theory and collective efficacy theory, the thesis therefore presents four separate studies which together examine the role played by neighbourhood context in relation to crime at the neighbourhood level, and in relation to reactions to crime at the individual level.

AIMS

The general aim of this thesis has been to add to the existing literature on neighbourhood effects and, more specifically, to extend the knowledge on neighbourhood effects on crime and reactions to crime in Sweden. The individual aims of the four studies were:

To review and summarize the results from Swedish research on the influence of neighbourhood context on fear of crime and victimization (study I).

To examine the relationship between population density and crime, and the role played by disorder in the context of this relationship, in two Western European settings (Malmö in Sweden, Antwerp in Belgium) (study II).

To investigate whether perceived neighbourhood disorder has independent effects on individual worry about victimization (study III).

To investigate how neighbourhood structural disadvantage, an indicator of collective efficacy, and disorder affect the likelihood of residents taking crime preventive action (study IV).

METHOD

A fundamental, yet often downplayed, question in all social science is that of causation (Wikström, 2008). The literature distinguishes between two basic empirical research designs: longitudinal and cross-sectional. Although there are several advantages with a longitudinal study design that monitors individuals and neighbourhoods over time, most studies are cross-sectional. A cross-sectional survey, such as the one employed in this thesis, provides a snap-shot of the population at a single point in time. The composition of neighbourhoods and the characteristics of individuals change over time and even though surveys often ask respondents to report previous experiences retrospectively, the data are not collected prospectively and cross-sectional surveys may therefore not represent the situation correctly. As such, causal interpretations should be made with caution. However, given a sound theoretical basis, previous research results and knowledge about the variables employed, the temporal order can, at least partially, be established using cross-sectional data. With this limitation in mind, this section first introduces the Malmö Fear of Crime Survey, together with the sample characteristics and the neighbourhood units employed. The analytical strategy will then be described, together with a number of central methodological considerations.

Main source of data: The Malmö Fear of Crime Survey

During the 1990s several local victimization surveys were launched in multiple counties and cities across Sweden (e.g. Wikström, 1991; Wikström, Torstensson and Dolmén 1997a; 1997b; 1997c; Torstensson, Wikström and Olander, 1998; Torstensson 1999; Torstensson and Olander, 1999; Torstensson and Persson 2000). These surveys made it possible to inte-

grate analytical levels (i.e. individual and neighbourhoods or schools) by combining survey data on individuals with demographic and socio-economic data on geographical areas. The main focus of the surveys was directed at the relationship between disorder, social control, victimization and worry about crime in urban and rural areas. The national Swedish Crime Survey (SCS) builds to some extent on the survey questionnaire designed for these local surveys. The local surveys that were introduced in the mid-1990s are no longer conducted however. As a consequence, there is today no single survey in Sweden that covers crime, worry about crime, victimization, area characteristics and social relations in a way that would allow for the reliable measurement of the collective attributes of residents.

The data for the three empirical studies were drawn from the 1998 Malmö Fear of Crime Survey, a cross-sectional study conducted in the police district of Malmö, which comprises the two municipalities of Malmö and Burlöv (Torstensson, 1999). For the current study, only respondents living in Malmö were selected, comprising a total of 4,911 individuals (response rate = 71.6%). The respondents are distributed across 110 geographical neighbourhoods, further discussed below.

The final sample is comprised of 55.7 percent women and 44.3 percent men³. A total of 59.5 percent of the respondents were married or cohabiting with a partner and 28.4 percent had at least one parent with a foreign background. 26.5 percent of the sample lived in single-family dwellings and 55.1 percent had lived in the same neighbourhood for five years or longer. Respondents ranged in age from 16 to 85 years with an average age of 47.5 years.

The survey was launched in the same year as the Swedish government launched its so-called Metropolitan Policy, which was intended to stop the negative effects of segregation. Initially, 24 disadvantaged areas in Sweden characterized by ethnic heterogeneity, high unemployment and a high rate of welfare support reciprocity were targeted, four of which were located in Malmö. Two of the Metropolitan Policy's many objectives were to provide

³ In study II, *Neighbourhood Disorder and Worry About Criminal Victimization in the Neighbourhood* (Mellgren et al., 2011) the percentages for women and men in the sample have been mixed up. The percentages given here are correct.

sound and healthy living environments that would be perceived as safe and attractive by residents and to improve public health (Proposition 1997/98:165; Storstadsdelegationen, 2007). Underlying these objectives is an assumption that neighbourhoods are of significance for the individuals who live in them. The background to the policy was that structural changes in living standards and lifestyle had led to an increase in crime levels, although these crimes were not distributed evenly in geographical terms. The increase in crime had been greatest in metropolitan areas as a result of the social consequences of segregation. Reducing segregation would thus lead to a reduction in crime (Proposition 1997/98: 165). The Metropolitan Policy further proposed that a reduction in crime would lead to reduced levels of worry in the population. In addition to these explicit policy goals, we know from the research that worry is also affected by the local physical environment, and that highlighting the local perspective and engaging local residents is assumed to strengthen social ties and decrease worry (Ländin, 2004). Thus, indirectly, the Metropolitan Policy implied that disorder and a lack of collective efficacy constitute key mechanisms producing the negative effects that neighbourhoods may have on individuals.

Neighbourhood units

A fundamental question for all empirical research concerned with geographical areas is that of identifying adequate neighbourhood boundaries that fit the theoretical assumptions of the research question. There is no consensus in the criminological literature as to how a neighbourhood should be defined. Instead, the units utilized for analysis range from respondent-defined areas to administrative areas that have been pre-defined for statistical purposes (Dolmén, 2002). From a methodological perspective, the unit of analysis, or the level of aggregation at which a given phenomenon should be studied, represents a crucial question in contextual studies. The significance of a variable might change – the direction of the coefficients might even change – when different geographical units are used (Bursik et al., 1990). In analysing crime rates, Ouimet (2000) found that the census tract level was more appropriate for analysing variables representing criminal opportunity, while neighbourhoods were best suited for testing models of social disorganization.

Since readily available administrative units are often used in research as a result of data constraints, it is important to consider the underlying idea behind a given categorisation and the consequences of using it⁴. For example, using electoral wards as the unit of analysis might be considered inappropriate in relation to individual outcomes, since they constitute a political boundary (See Lupton, 2003, for a general critique of how studies have dealt with the unit of analysis problem).

In order to constitute a meaningful unit for neighbourhood analysis, Morenoff et al. (2001) have argued that three criteria need to be met: the area should be large enough to provide all of the essentials of everyday life, including services such as a grocery store. The area should be comprised of smaller, adjacent areas such as street blocks, and finally it should be homogenous, i.e. the differences within neighbourhoods should be smaller than those between neighbourhoods. Based on these three criteria, a neighbourhood can be defined as: *“...a cluster of geographically adjacent census tracts with a local character that offers economic and social services that provide for the daily needs of residents and non-residential users.”* (Pauwels 2010: 25.)

The unit of analysis employed in Studies II, III and IV in this thesis comprises the intra-city division into “city districts”, which are here referred to as neighbourhoods. The division into city districts exists in all municipalities/cities and is decided on autonomously by the municipalities on the basis of their needs. These divisions may also change over time, and new units are added as new areas are exploited. The ecological validity of the division, i.e. the degree to which the units reflect natural boundaries and resemble what residents themselves would define as their residential area (Perkins et al., 1990), is unfortunately unknown. What speaks in favour of the ecological validity of these units is that the names and borders of these city districts/neighbourhoods are used by public sector officials, in prop-

⁴ There are several regional divisions in Sweden which serve different purposes and are used by different actors. Statistics Sweden is responsible for documenting the various categorisations used to divide Sweden into different types of regions. The categorisations are either used as official units in connection with the production of national and local statistics, or they are produced for a specific purpose or as intra-municipal divisions that are regarded as important from a local point of view. In addition, there are divisions produced for agricultural statistics or regional development policies (See MIS 2005:2, Figure 8, for an overview of the regional divisions and their relations and Figure 2 for the statistical base registers and their relationships with and links to the spatial dimension)

erty ads and in the names of local football clubs and schools etc., which implies that they are well established locally in the minds of residents (although residents may not be aware of the exact boundaries). Coulton et al. (2001) compared residents' cognitive maps and administrative boundaries and found discrepancies that might bias the findings of research into neighbourhood effects. At the same time, however, it is difficult to assess the differences and similarities that may exist between residents' perceptions of the geographical limits of their residential area and administratively defined areas, since residents' perceptions are influenced by a large number of factors.

Thirty-one neighbourhoods, or 28 percent of those in the original sample, were excluded from the analysis so that only neighbourhoods with at least 20 respondents were included. The decision to exclude neighbourhoods with less than 20 respondents was based on recommendations made by previous research as to how to best guarantee ecologically reliable neighbourhood level variables. It is important to discuss this issue, however, since it has been used to motivate the exclusion of cases from the analysis and thus may influence the results. The neighbourhood level measure of disorder employed in the included studies is based on an aggregation of individual responses and an aggregated measure is more reliable the more respondents that judge the neighbourhood (Raudenbush and Sampson, 1999; Steenbeek, 2011). The same holds for the number of indicators that are used to construct an index. An index with eight indicators is more reliable than an index with four indicators.

I compared the excluded units with the included units on the key variables worry about criminal victimization and perceived neighbourhood-level disorder. The comparison showed that the two groups of excluded and included units had similar means but differed significantly in one regard. The excluded units were more often completely homogenous, i.e. more units had either 0 or 100 percent respondents that reported the highest or lowest level of worry and disorder, and had significantly higher standard deviations. This lends support to the decision to exclude units with few respondents, since a measure based on only a few "voices" can turn the unit into an extreme case. One reservation must be made, however. It is possible that individuals from particularly disadvantaged areas may be less likely to

respond to a survey such as the one used here for various reasons. The few respondents from these areas may therefore represent the “true” character of the area, but many refused to participate. Another comparison, this time based on three indicators of disadvantage (proportion receiving financial support, disposable income, unemployed), provided by statistics Sweden (SCB) showed however that the level of disadvantage was in fact slightly higher in the included areas.

Analytical strategy

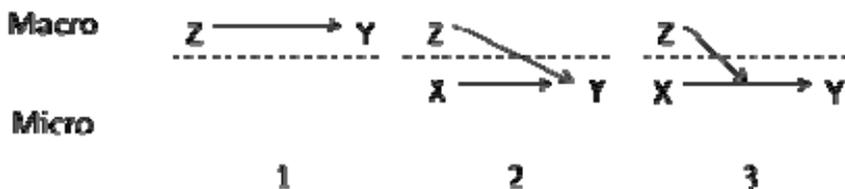
Table 1 provides an overview of the analytical strategies and data employed in the separate studies. Statistical analyses were performed using SPSS versions 18 and 19, HLM 6 and 7, and LISREL.

Table 1: Overview of analytical strategies used in studies I-IV.

Study	Design	Participants	Data	Analytical strategy
I	Literature review		14 studies	Literature search
II	Cross-sectional, aggregate level	N= 4672, 16-85 y (the Malmö data)	Questionnaire, key-informants (Antwerp), census-data, recorded crime	OLS-regression, Structural Equation Modelling (SEM)
III	Cross-sectional, multilevel	N= 4672, 16-85 y	Questionnaire	Multilevel analysis
IV	Cross-sectional, multilevel	N= 4672, 16-85 y	Questionnaire, census data	Logistic multilevel analysis

Twelve statements about the relationships between variables, at the same level (micro-micro, macro-macro) or at different levels of analysis (micro-macro, macro-micro), constitute the basis for formulating hypotheses in social science, of which four are multilevel statements (Snijders and Bosker, 2004, Tacq, as cited in Snijders and Bosker, 2004). Figure 3 illustrates the ways in which contextual effects have been studied in empirical studies included in the thesis.

Figure 3. Macro-level and multi-level statements.



Statement 1 is a classic macro-level statement where both independent and dependent variables are measured at the macro-level. This type of analysis is performed in Study II. Statement 2 is a contextual statement where the characteristics of the higher level units are assumed to influence individuals. The hypotheses in Study III were derived from this statement. Statement 3 is a contextual statement with cross-level interaction. This statement assumes that the context influences individuals differently. This statement is included to a limited extent in Study IV; however the assumption from Statement 2 dominates.

As has been illustrated above, the studies included in the thesis investigate both macro-to-macro relationships and macro-to-micro relationships. The next section discusses the statistical techniques employed.

Ecological regression analysis

In testing the two theory-driven models in Study II, a series of block-wise OLS-regressions were initially performed in order to (a) establish the strength of the relationships between population density, disadvantage, social trust and disorder and (b) to establish the nature of the relationship between population density, disadvantage, disorder and crime. These block-wise regressions allowed a first insight into the independent effects of social trust on disorder and of disorder on crime.

Next, applying a structural equation modelling approach (SEM), confirmatory path analyses were fitted to the data. Structural equation models are much like multivariate linear regression models but with one important difference. In the SEM model, the outcome variable in one model can be treated as a predictor variable in another model. This means that variables in the equation can be modelled to have reciprocal effects, in the form of either direct effects or indirect effects that are exerted via mediating variables. Structural equation modelling was used in Study II in order to assess the direct and indirect effects of population density, disadvantage, social cohesion, and crime and disorder. The core assumptions of the hypotheses tested were evaluated by modelling the relationship between disorder and crime so that both were seen as outcomes of social trust. It is possible to specify paths of indirect and direct effects in the model and to then evalu-

ate the model fit. Analysing the two theoretical models simultaneously also allows for a global evaluation of models across settings.

Structural equation modelling has been criticized for claiming to allow for causal interpretations of cross-sectional data when in fact structural equation models do not deal with the problem of causation any better than any other regression technique applied to cross-sectional data. SEMs do however allow for translating theoretical assumptions into testable hypotheses (Kline, 2005).

Multilevel analysis

Due to the inherently hierarchical structure of research on neighbourhood influences on individual outcomes, both individual-level and neighbourhood-level data are analysed. Analyses based on a combination of data from different levels cannot be modelled well in a single-level regression analysis. Multilevel analysis extends the ordinary least squares regression and takes into consideration the dependency of observations that arises from residing in the same neighbourhood, which constitutes the underlying assumption of neighbourhood effects research. By including data measured both at the individual level and at the neighbourhood level in the same model, the atomistic and individualistic fallacies described earlier can be avoided, allowing inferences to be made at the appropriate level.

In a multilevel model, the neighbourhood effect is decomposed into a compositional and a contextual effect. The steps involved in identifying unique neighbourhood effects will be described in a non-technical manner below.⁵

The first step in neighbourhood effects research is to determine whether there are any differences in the outcome of interest between individuals in different neighbourhoods, and thus if it is worth proceeding with the multilevel model (Subramanian et al., 2001; Merlo, 2011). In the terminology of multilevel analysis, this is called the empty model, a model without predictors. The size of the neighbourhood effect is expressed by the intra class

⁵ For readers interested in a more in-depth description of the multilevel model, I refer to e.g. Twisk, 2006 and Snijders and Bosker, 2004.

correlation coefficient (ICC). The ICC is the proportion of variance that is accounted for by the neighbourhood level.

If the selection of individuals to different neighbourhoods were completely random and independent of social and economic position, then the amount of variance expressed by the ICC as being located between neighbourhoods would be completely due to the neighbourhood itself (Oakes, 2004). However, people are probably not randomly assigned to geographical space but are rather constantly competing for position (Zorbaugh, 1926, cited in Timms 1971). A large ICC is nonetheless consistent with strong neighbourhood influence.

The next step is to adjust for selection bias and compositional effects by adding individual background variables such as age, gender, and indicators of socioeconomic status. The amount of variance between neighbourhoods that remains once these variables have been included in the equations is not due to composition but represents neighbourhood effects. Next, the neighbourhood-level variables that are hypothesised to deliver these effects are also introduced into the model.

Cross-level interaction

In situations where the context may impact more on some residents than on others, it is important to ask not only “are there neighbourhood effects?” but also “for whom are there neighbourhood effects?” (Forrest and Kearns, 2001). The latter question proposes an integration of the micro-level and the macro-level and is called the conditional contextual effect, or cross-level interaction (Liska et al., 1989). Examining a cross-level interaction is similar to examining a standard interaction term, in that it involves considering the coefficient of a variable that is the product of two variables. There is a difference however, since in this case one of the variables in the interaction term is measured at the micro-level and the other at the macro-level.

Cross-level interactions, although difficult to identify, may have important implications for policy, potentially indicating that a change in the environment might possibly lead to a further reduction in women’s worry, for example, but not in men’s.

Selection bias

Every study that seeks to separate the individual from the setting in order to search for independent neighbourhood effects must deal with the issue of selection bias. The possibility that a relationship between an individual and his or hers location does not represent a contextual effect but a compositional effect complicates this area of research.

If people were completely randomly assigned to different neighbourhoods this would not be a problem. Such a situation is highly unlikely to exist however, since individuals are most probably assigned to neighbourhoods both by choice and by processes of segregation (Vigdor, 2002). Selection bias concerns the difficulty of knowing whether observed differences in any outcome are actually due to neighbourhood factors or are rather a result of the self-selection of certain types of individuals to certain areas (Manski, 1993). If there is some unobserved background characteristic, for example socio-economic status, that affects individuals' choice of area and at the same time affects the individuals' level of worry, this will lead to a problem of endogeneity in the models used to study neighbourhood effects (Mello et al., 2002).

An experimental study design that randomly assigns people to neighbourhoods with different characteristics has been proposed as constituting one means of dealing with this problem. One such example is the Moving to Opportunity program (MTO). The program hands housing vouchers to people living in disadvantaged neighbourhoods to encourage them to move to better-off neighbourhoods with the goal of assessing the effect of living in a less disadvantaged area for individual life chances (see for example www.mtoresearch.org). Another proposed way of dealing with selection bias involves studying children and adolescents, who do not choose their residential location. The problem with this approach, however, is that the parents have nonetheless moved selectively to the neighbourhoods in which their children live (Vigdor, 2002).

Experimental studies are rare and the standard approach to this problem (which does not resolve it completely) is instead to control for geographical variations in composition by including control variables at the individ-

ual level, such as sex, age and theoretically relevant variables (Sampson et al., 2002). Controlling for composition at the individual level in this way does resolve some of the problems associated with selection bias. However, there is a thin line between over-controlling and under-controlling. On the one hand under-controlling, i.e. omitting important individual-level factors may result in an overestimation of neighbourhood effects, providing false support for a contextual explanation (Shadish et al., 2002). Over-controlling, on the other hand, may obscure true neighbourhood effects and provide false support for a purely compositional explanation. Thus caution is required when selecting variables at each level, as is an understanding of the problem under study and an awareness of the existence of possible bias when drawing conclusions.

Although neighbourhood effects research has evolved significantly both theoretically and methodologically over the last decade and offers a solution to many of the problems associated with ordinary least squares regression, it still suffers from “a thorny set of methodological problems” (Sampson et al., 2002: 445), some of which have been discussed here, and “the theoretical and empirical discussion of neighborhood effects is still at a rudimentary level” (Elliott et al., 1996: 389–390). Next, the results from each of the included studies in the thesis are presented.

RESULTS

The thesis consists of four studies that investigate different aspects of the neighbourhood context and how context may affect individual reactions to crime. Although the general aim is to extend the knowledge on neighbourhood effects, the studies employ different theoretical and methodological approaches. This section summarizes the main results from each of the four studies in turn.

Assessment of Swedish research

The first study, *Neighbourhood influences on fear of crime and victimization in Sweden – A review of the crime survey literature*, summarizes and reviews the results from Swedish research on the significance of neighbourhood characteristics for individual worry about crime and victimization. The strengths and limitations of these studies are discussed. Critical gaps are identified and the main problems found are similar to those emphasised by other research reviews (e.g. Pickett and Pearl, 2001; Sampson et al., 2002; Sellström and Bremberg, 2006). Heterogeneity in the methodological approaches employed, in the level of aggregation, and in the neighbourhood characteristics examined and how these have been measured are all identified as representing significant obstacles to being able to draw general conclusions about neighbourhood effects in Sweden. Studies have consistently shown aspects of fear of crime and victimization to be unequally distributed across population groups and across geographical areas. This is an important finding in its own right. However, when unique neighbourhood effects have been identified, these have generally been modest and significantly smaller than compositional effects.

All of the studies included in the review relied on administratively defined areas. None of the studies analysed the influence of the same variables at different levels of aggregation. It is probably the case that individual, contextual, political and cultural factors have different meanings depending on the level of aggregation at which they are analysed (Subramanian et al., 2003). For example, it may be appropriate to measure social cohesion at the smaller neighbourhood level but not at the regional level, since at the theoretical level, the concept refers to a social process that occurs between neighbours or people in the same neighbourhood (Sampson et al., 1997). Lindström et al. (2003) and Lindström et al. (2006) have investigated the individual's sense of security. The study from 2003 found that differences could be partly explained by social capital at the neighbourhood level. The 2006 study examined the same outcome, but this time at the municipality level (the "city districts" of larger municipalities were also included). Social capital (defined identically in both studies as the rate of electoral participation) was not found to be significantly related to individuals' sense of security at this level. Instead the variable "administrative police district" (measuring differences in strategy, management, policy and administrative routines between police districts) was found to be the best contextual predictor. This suggests that social capital is an important predictor at the neighbourhood level but not at the level of the municipality.

Social control, social integration and disorder were identified as important mechanisms linking aspects of fear of crime to geographical contexts in Sweden. When it comes to victimization outcomes, neighbourhood characteristics appear to play a more decisive role in the distribution of property crime than in that of violent victimization. Individual lifestyle indicators are more important for violent victimization, whereas the neighbourhoods' socio-demographic composition is a more significant factor in relation to property-related crimes. The choice of neighbourhood-level variables appears to be driven by questions of accessibility rather than by a consideration of the causal pathways proposed by theory.

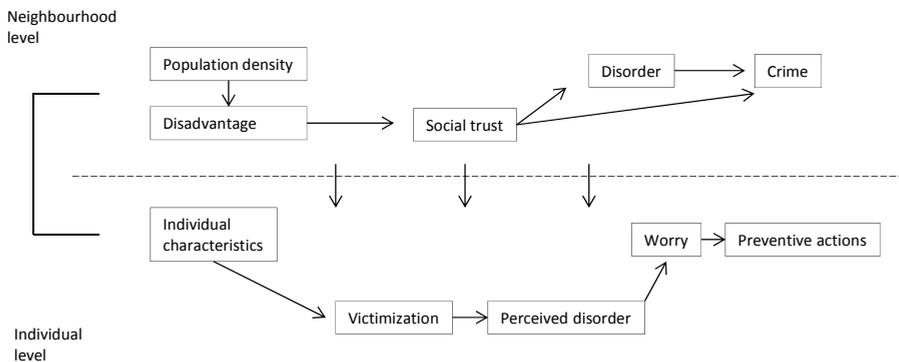
Five studies using multilevel analysis were published during the period under review. The initial variance between neighbourhoods in these studies ranged from 4.3 percent to 21.2 percent. Subsequent to considering the composition of neighbourhoods, considerably less variance remained at

the neighbourhood level and as such a majority of the variance was found to be located between individuals. Taken together, the evidence for unique neighbourhood effects once individual characteristics have been controlled for is modest, and individual characteristics appear to have the most decisive influence on individual outcomes. The review does however indicate that the neighbourhood context may have consequences for individual fear and victimization in Swedish contexts.

The role of neighbourhood context

The role of disorder has been the subject of many debates. This thesis has attended to some of these highly debated questions. The main area of interest here concerns whether disorder should be viewed as an important neighbourhood level mechanism that has consequences for the extent of residents' worry about criminal victimization and for how residents protect themselves and their property. Although conclusions should be drawn with some limitations in mind, the thesis nonetheless offers some guidance as to how we should think about the role of neighbourhood context. Figure 4 summarizes the relationships and hypotheses that have been examined.

Figure 4. Summarized model.



Crime and disorder at the neighbourhood level

The second study, *Population density, disadvantage, disorder and crime. Testing competing neighbourhood level theories in two urban settings*, examines the relationship between population density and crime, and the

role of disorder in this relationship, in two Western European settings (Malmö in Sweden, Antwerp in Belgium). These questions have been frequently considered but few have approached the issue from a comparative perspective.

It has been established by many studies that neighbourhood levels of crime tend to correlate with structural characteristics such as population density and disadvantage (poverty) at multiple levels of aggregation (e.g. Ouimet, 2000). However, scholars seem to disagree regarding the actual mechanisms at work in the relationship between population density and crime. There has also been some debate as to the independent role played by neighbourhood levels of disorder in the causation of neighbourhood levels of crime (Bursik and Grasmick, 1993; Sampson et al., 1997; Sampson and Raudenbush, 1999, Taylor, 1999, 2001; St. Jean, 2007; Yang, 2007; Hinkle, 2009).

The study examines the extent to which two theory-driven models of the relationship between population density and crime can be equally applied to data collected in two cities. The models tested were labelled the “broken windows derived model” and the “collective efficacy derived model”, with the latter having a weak and a strong version. More specifically, the study attempts to examine what happens to the relationship between population density and crime when neighbourhood disadvantage, social trust and disorder are introduced into the equations. A particular focus is directed at evaluating the strength of the relationships between population density, disadvantage, social trust, disorder and crime, and in doing so at highlighting the “comparability” of results by pointing to similarities in the findings from the two cities (see the neighbourhood-level part of the model in Figure 4 for an overview of the hypothesised relationships).

Population density was found to have a strong positive direct effect on disorder in both settings. Disadvantage had a strong positive effect on disorder in both cities, and disadvantage fully mediated the effect of population density in Malmö and slightly decreased the size of its effect in Antwerp. However, social trust had the strongest effect on disorder in both settings.

Population density was also related to crime in both Malmö and Antwerp. However, disadvantage mediated this relationship too, suggesting that disadvantage is the more important structural condition in causing crime. If crime and disorder are part of the same phenomenon, then no direct effect of disorder on crime should be present. The analysis shows that disorder had direct effects on crime, which were independent of population density and disadvantage, across both settings.

To further examine the crime-disorder link, three models were evaluated using structural equation modelling. It is important to note that a structural equation model with a good fit to the data only presents one possible interpretation of these data and does not prove one hypothesis and rule out another. If two different models are both found to fit the data well, then the findings ultimately provide little insight.

The relationship between crime and disorder was modelled with both variables viewed as outcomes of social trust, while allowing no direct effect of disorder on crime. No support was found for the collective efficacy derived model of crime and disorder, which presented a poor fit to the data. The best fitting model revealed that population density had a direct effect on disadvantage in both settings but no direct effects on either crime or disorder. After adjusting for social trust, the effect of disadvantage on disorder remained in Malmö and its effect on both crime and disorder remain in Antwerp. This suggests that social trust constitutes a key mechanism, but that it is probably not the only important variable in explaining crime and disorder at the neighbourhood level.

In summary, the results provided some support for the presence of direct effects of disorder on crime in both settings, independently of structural variables. These findings suggest that the broken-windows derived model may be more appropriate for explaining the distribution of crime in these settings. A number of differences were observed between the two settings, suggesting that the disorder-crime link may vary by setting. In line with the recommendations made by Sampson and Wikström (2008), the study concludes that more cross-national research is needed to understand the generality of the relationships between neighbourhood structure, social mechanisms and crime.

Consequences of neighbourhood context at the individual level

The review of Swedish research identified a paucity of studies that had employed a multilevel framework. It also pointed towards the significance of neighbourhood context however. A multilevel framework was utilized to investigate the neighbourhood effects hypothesis in relation to worry about criminal victimization in study III and in relation to residents' crime preventive actions in study IV. The proposed relationships are once again described in Figure 4 above.

Worry about criminal victimization

As has been noted, one of the key assumptions of broken windows theory (Wilson and Kelling, 1982) is that visible signs of disorder signal danger and decay and lead to worry and withdrawal from public space, which in turn leads to more crime. Originally the theory presented a psychological perspective but has successively moved upwards in terms of analytical level. The proposed effect of neighbourhood context on individual worry about criminal victimization is addressed from a multilevel perspective in the third study, *Neighbourhood disorder and worry about criminal victimization in the neighbourhood*. A cross-level integrated model is proposed, which links neighbourhood-level disorder and individual-level characteristics in order to explain variations in individual worry about criminal victimization. The study simultaneously examines the effect of disorder at the neighbourhood and at the individual level while controlling for victimization. Issues of selection bias are addressed by means of the control variable approach. Control variables relate to composition and are theoretically derived from the vulnerability perspective on worry about crime (e.g. Ferraro and LaGrange, 1987).

Multilevel analysis was performed in order to separate the individual effects from the contextual effect. Initially, a small amount (6 %) of the variation was found to be located between neighbourhoods. A tentative conclusion drawn on the basis of this initial model is that there exists what might be termed "a geography of worry" to some extent, although the observed variation might be due to the composition of the population, with more people with a predisposition to worry residing in certain places, and fewer in others. However, the effect size was only marginally reduced

when controls were introduced for neighbourhood composition, and unique neighbourhood effects appear to remain.

Neighbourhood disorder, in line with the proposed cross-level model, was found to have an independent effect on worry about criminal victimization. The model also proposed that if an individual had prior experiences of victimization, then this would mediate the relationship between neighbourhood disorder and worry. This proposition was only marginally supported, but prior victimization was found to have a direct effect on worry.

The model further suggested that perceived disorder at the individual level, which is conceptually distinct from the average level of neighbourhood disorder, would alter the relationship between neighbourhood disorder and worry. The analysis found support for this proposition. Perceived disorder further reduced the effect of prior victimization on worry. This indicates that the relation between victimization and worry is spurious and that those who have been previously victimized perceive higher levels of disorder, which in turn causes worry.

Overall, the hypotheses of the influence of both neighbourhood-level and individually perceived disorder in shaping individual worry were supported. Individual background explains most of the variance, but neighbourhood context does have an independent effect on worry. Individual-level perceived disorder mediated the effect of neighbourhood disorder on worry, suggesting that the effect of context is indirect, via its effect on individual perceptions. This was expected. An additional model that specified perceived disorder as the dependent variable confirmed direct effects of neighbourhood disorder on individually perceived disorder. Thus worry is influenced both by the context itself and by the way in which the individuals perceive this context, suggesting that both levels should be considered when seeking to reduce worry.

Unfortunately, we have not been able to assess the long-term effects of neighbourhood context. Rather the models tested are static, i.e. they estimate the direct effects of neighbourhood context in its current state and they do not consider the dynamics of change within neighbourhoods. Re-

search indicates that there is a temporal component to worry, and the question has been raised as to whether people who experience long-term worry develop a “resilience” towards worry by taking measures to deal with it (Gray et al., 2011). Cross-sectional data are poor for the purposes of addressing questions of causality and behavioural change over time, and they are incapable of disentangling the varying significance of context at different points in the life-course. A more nuanced understanding of the influence of context on worry would require the use of repeat measurements.

Residents’ crime preventive actions

The fourth study, *Residents’ involvement in crime preventive actions: what is the role of neighbourhood context?* shifts the focus towards different actions applied by residents to protect themselves and their property. The overall aim of the study was to investigate how neighbourhood structural disadvantage, expectations of residents’ willingness to intervene, and disorder affect the likelihood of residents taking crime preventive action. At the individual level, the influence of prior victimization and worry about criminal victimization were considered. Building on an integrated collective efficacy/disorder framework, the independent effects of neighbourhood context were investigated in relation to four types of resident preventive actions. These were: participation in organized activities, the use of burglar alarms, the use of security locks, and informal surveillance.

A series of multilevel analyses were performed in order to test to what extent the neighbourhood context might explain differences in the probability of residents taking crime preventive actions, over and above the effect of individual characteristics. Initially, in the empty models, between 5.3 and 19.5 percent of the total variance in the dependent variables was found to be situated between neighbourhoods. As expected, individual characteristics explained a majority of this between-neighbourhood variance. One important finding was that the contextual variables appeared to have different effects in relation to different activities, highlighting the need to study different actions separately.

The likelihood of participating in organized activities in order to protect the neighbourhood was found to be influenced by the level of disorder.

Visible signs of disorder appear to activate the will to act as guardians with regard to either one's own property or the neighbourhood. Informal surveillance, i.e. asking your neighbours to keep an eye on your house while you are away, is more likely to occur in stable, homogenous neighbourhoods where the expectation that neighbours will act to regulate the neighbourhood is high, and where levels of disorder and disadvantage are lower. However, individual characteristics were found to explain most of the initial between-neighbourhood variance.

Neighbourhood disadvantage was found to impede individuals' decisions to install security locks, but neighbourhood context had no independent effect on the likelihood of having burglar alarms installed, and the differences between neighbourhoods were explained by individual characteristics that may be assumed to be related to individual socio-economic status. One possible explanation for this is that taking action to protect property is more likely where there is more of value to protect. However, victims of burglary have been found to be more concerned by the psychological consequences resulting from the invasion of privacy than by the financial losses involved (Simmons and Dodd, 2003). In addition, poor areas are more likely to become hotspots for burglary (Bellair, 2000) and disadvantage decreases levels of informal control, which may in turn be assumed to produce a higher crime rate. Thus the consequences are the same regardless of the value of the property involved but population groups protect themselves unequally, which may have consequences for the neighbourhood in the longer run.

The level of individual resources appears to constitute a general influence across different crime preventive actions. Indications were found suggesting that individual financial resources interact with the neighbourhood's financial resources to create a situation where those who need protection the least are those who protect themselves the most and that this is further amplified as the level of disadvantage decreases. This study indicates that future research should seek to unpack the ways in which the neighbourhood context interacts with individual behaviour more carefully. Considering the consequences of allowing crime to penetrate an area, such research may prove valuable for efforts focused on reducing the level and consequences of segregation.

CONCLUSION AND DISCUSSION

A majority of research within this particular area of interest has been carried out in U.S. or British settings. Thus, the cross-cultural applicability of the key concepts discussed here, as well as the empirical state of the field at the national level, has remained somewhat unclear. There is also an underlying assumption in Swedish policy efforts that the social and physical characteristics of neighbourhoods matter in relation to individual outcomes.

With the overall aim of adding to the existing literature on neighbourhood effects, and more specifically of extending the knowledge on neighbourhood effects on crime and reactions to crime in Sweden, the thesis presents a number of tentative conclusions. The existing literature on neighbourhood effects in Swedish settings does not in its current state offer a sound basis for policy makers to make well-informed policy decisions. However, despite the scarcity of multilevel studies in Swedish settings (although these are on the increase), research has established the existence of an unequal distribution of crime-related problems across geographical areas, pointing towards neighbourhood effects. Specific issues relating to methodology and conceptual clarity need to be addressed in order for the research field to further improve our knowledge and understanding of the role of the neighbourhood context.

Many of the conclusions resonate with previous research in this field. Most of the variance in both worry about crime and crime preventive actions was found to be dependent on individual characteristics, supporting

a compositional explanation. In other words, who we are matters more than where we are.

Difficulties in generalising results, and by implication in adopting interventions based on international results and evaluations, further highlight the importance of local investigations of local problems. One relevant hypothesis is that neighbourhood effects on reactions to crime are dependent on broader structural conditions in the societies in which area differences are studied. There are differences between western European countries and the U.S. which make it difficult to compare empirical findings. The most obvious difference is found in the area of political economy, with western European countries having a much more comprehensive social security system than that of the U.S. (Musterd, 2005). This might explain why some area effects are less pronounced in countries such as Sweden, where social class differences and segregation are less evident by comparison with the U.S. (Sampson and Wikström, 2008) and where the general standard of living is high. This suggests that the neighbourhood context may play a comparatively less significant role in explaining differences in individual reactions to crime in Sweden, and this finding is worth studying on its own.

Segregation is on the increase in Sweden however (Kölegård et al. 2007; Socialstyrelsen, 2010), and neighbourhoods are becoming more homogenous (Nordström Skans and Åslund, 2009). This constitutes a strong argument for further research into the influence of neighbourhood context. Differences between different segments of the population in terms of their rate of victimization have increased (Nilsson and Estrada, 2003; 2006). At the same time, the poorest segments of the population have experienced a decrease in income, while the richest segment has experienced an increase, leading to higher levels of relative deprivation. In addition, more than one-fifth of the population with a foreign background live in areas where less than 70 percent of the residents are Swedish, and ethnic and economic segregation go hand in hand (Socialstyrelsen, 2010). If levels of segregation continue to increase in Sweden and similar countries, we can also expect an increase in the differences between population groups and neighbour-

hoods in terms of worry about crime and how people protect themselves, creating a situation of distributive injustice.

Distributive justice refers to a situation where, for example, crime drops equally for all population groups and neighbourhoods and that disparities between groups and neighbourhoods decrease. Distributive injustice instead refers to a situation where disparities between groups increase or where only some groups and neighbourhoods benefit from a drop in crime (Tilley et al., 2011). The same is true in relation to other, related outcomes, such as differences in worry about crime and the capacity to protect oneself and one's property.

The neighbourhood context has been called “the ultimate exogenous variable” (Ross, 1993: 171), which sets the stage for individual perceptions, attitudes and behaviours. Disorder is more frequently experienced as a problem in disadvantaged areas characterised by low levels of social trust. High levels of neighbourhood disorder may set in motion a process of urban decay in which disorder triggers worry about crime. This may in turn affect the neighbourhood's ability to exercise collective social control. At the same time, people living in disadvantaged neighbourhoods may be less inclined to take private measures against crime. Regardless of whether a compositional or contextual explanation of differences between neighbourhoods is correct, the fact remains that there are differences.

Ethical considerations

“We need to think through what our models, our theories and our methods will do to people and to society” (Shapland, 2000:3).

All research involving human subjects must be examined by a local ethics review board, but since neighbourhood effects research seldom involves direct contact with “human subjects” and since the research is most often quantitative, the ethical issues involved are somewhat unclear and may therefore have been more or less neglected. Nor are there any ethical guidelines regarding information on neighbourhoods, either in the Social Research Associations (SRA) ethical code or in the ethical code of the British Society of Criminology. Widely discussed traditional ethical issues in-

clude the invasion of privacy, the storing of records and interviews, ensuring confidentiality (Wolfgang, 1981), and above all else the protection of human subjects, which includes the question of informed consent (Larkins, 1995).

The issue of informed consent is included in all codes of ethics in the social and medical sciences, and is intended to ensure that the respondents involved in a study understand the purpose of the research and participate voluntarily. In neighbourhood effects research, individual data is often collected by means of a survey conducted among a sample of the general population with the purpose of studying the collective social properties of neighbourhoods. I see two problems in particular that are worth considering. First, the individual respondent consents to participate in the study by completing a form and sending it back to the research team. What about the rest of the population to whom we generalize our findings? To take one example, the city of Malmö had approximately 250,000 inhabitants in 1998, and the survey employed in Studies II, III and IV includes a sample of approximately 4,000 inhabitants, which amounts to 1.6 percent of the population. By completing the questionnaire, these 4,000 individuals consented to participate in the study on criminal victimization and reactions to crime. If the survey is then used to study neighbourhood effects and presents information that might risk labelling neighbourhoods with certain characteristics as dangerous places, what then is my responsibility towards the 98.4 percent who were not given the opportunity to consent to their neighbourhood collective properties being studied? It would of course be impossible to gain consent from a total population, nor do I think it is necessary, and attempting to do so would in fact do more harm than good, since it would prevent research, *but* the [potential] consequences must be considered.

Second, when identifying problematic neighbourhoods and the characteristics that may have negative consequences for the individuals residing in these areas, there is a possibility that this will produce a stigmatizing effect. Negative rumours may lead to out-migration, increasing levels of segregation and they also have the potential to lead to active discrimination against some neighbourhoods, e.g. by shop owners who judge the risk of operating in these neighbourhoods as too high. Neither those who consent

to participate in the survey, nor those who do not participate are informed about this potential consequence of a community survey.

On the one hand, identifying troublesome neighbourhoods may lead to stigmatization and negative rumours. On the other hand, research can assist policy makers in identifying why some neighbourhoods are potentially harmful to the residents. Knowledge-based interventions have the potential to re-shape neighbourhoods and to lead to a re-evaluation of neighbourhoods, which in the longer term may produce a safer and healthier population living on equal terms with regard to their residential environments. The issues involved should however be considered.

FUTURE DIRECTIONS

This thesis has contributed to the existing literature on neighbourhood effects by investigating how the neighbourhood context helps shape individual attitudes and behaviours, with a focus on Sweden. As was noted towards the beginning of this introductory chapter, researchers have argued that neighbourhood studies are an enterprise worth pursuing and that they represent an essential future direction for research on individual health and health-related problems. However, any effort to separate individuals from their settings is deemed likely to run into problems since individuals are always embedded in a context and interact with their surroundings in multiple ways. Some of these problems have been identified and discussed. For policy makers, pursuing this line of thinking requires an extended base of empirical knowledge. This section therefore begins by discussing suggested directions for future research, and it concludes with a number of explicit recommendations to policy makers.

Dynamics of change

In the same way as criminology is a multilevel enterprise, it is also a longitudinal enterprise. Further research should treat neighbourhoods as dynamic units and pay particular attention to the ways in which neighbourhoods develop. Worry about crime may take time to develop (Gray et al., 2011) and result in the individual taking action further ahead. A multilevel longitudinal study design that continuously monitors both neighbourhood context and individual behaviour and attitudes in context could shed light on the simultaneous development of disorder, neighbourhood collective efficacy, worry, and crime preventive action. Such a design could also improve our knowledge of whether there are specific events in the life course

of both individuals (e.g. employment, change of marital status, moving to a different neighbourhood) and neighbourhoods (economic recession, crime drops/increases, disadvantage, and political climate) that tend to trigger changes.

A study that follows the same individuals over time could tell us more about neighbourhood effects. Static models only tell us that some people are more worried in some neighbourhoods than in others. If moving to a neighbourhood with less disorder, crime and disadvantage were to make the individual less fearful and less worried, then we would have more convincing evidence of neighbourhood effects. Cross-sectional studies could however be improved by including a measure of how long individuals have lived in the neighbourhood (Mayer and Jencks, 1989). Study III included length of residence as a control variable, but how long a person had lived in the neighbourhood and been exposed to the environment had no significant effect on worry.

Identify whom to target

Another area that should receive additional interest is the possibility that neighbourhoods influence some people more than others. Oberwittler (2004), for example, found strong neighbourhood effects of disadvantage on offending only for those respondents who actually lived in an area and had many friends in the area. Smith and Torstensson (2001) found that women were more ecologically vulnerable than men, i.e. that the neighbourhood context was more important in explaining worry about crime among women than among men. In a study of neighbourhoods, walking outdoors (active living) and worry about crime, cross-level interactions were identified showing that women were more fearful than men in neighbourhoods with low levels of violence. Further, collective efficacy has been found to increase worry among black respondents but not among nonblack respondents (Roman and Chalfin, 2008). One way in which research can assist policy makers is by attempting to identify those individuals who are most affected by neighbourhood context by seeking to identify so called cross-level interactions. As part of an area-based intervention particularly “vulnerable” groups could then be targeted.

Level of aggregation

Surprisingly little explicit reference is made in the criminological literature to the possibility that the influence of contextual mechanisms may vary between for example the neighbourhood and municipal level. Even though the level of analysis problem is mentioned almost by default in multilevel studies, few include the type of data needed for testing the significance of theoretical constructs at different levels of spatial aggregation.

From a policy perspective, this is an important question. Contextual influences should be tested for and compared between different levels of spatial aggregation so that the most relevant context can be identified. In order for something to result in preventive measures, the unit of analysis employed must be practical and suitable for policy interventions. Although neighbourhoods as defined by residents, might best reflect the area that has the largest effect on human behaviour, it might not represent the most appropriate option from a policy perspective. Testing models on different spatial scales can determine what matters most: the general surrounding environment or the area closest to home, i.e. the social context created by the people you most frequently encounter.

Data collection and measurement

To facilitate the suggested directions the standard of data collection needs to be improved. To further our understanding of the link between individuals and their environments, longitudinal studies are important. As has been argued by Sampson (2003), if studies were to be standardized and performed nation-wide, this could serve as a benchmark assessment of how neighbourhoods, cities, and municipalities are doing on certain outcomes in relation to others and also how the situation has developed over time.

This also requires adequate measures of neighbourhood context. Surveys of the population should be developed to measure collective properties of neighbourhoods more extensively. Currently four national large scale surveys are conducted in Sweden, whereof only one is primarily a victim survey in a strict sense.⁶ The Swedish crime survey (SCS) was initiated in 2006

⁶ The four surveys are: Level of Living Survey (LNU), conducted since 1968 by the Swedish Institute for Social Research (SOFI) at Stockholm University; The Swedish Institute of Public Health has conducted a national pub-

and has since been conducted annually by the National Council for Crime Prevention (Brå). National surveys are general in nature and seldom allow for more sophisticated analyses, follow ups, or for the analysis of smaller geographical units. In order to fully capitalize on surveys, and for surveys to act as crime preventive tools, they should be designed for the specific purpose in mind. The SCS primarily provides information on the population as a whole, or divided into larger regions. It has recently become possible to link the individuals in the SCS database to so called SAMS-areas (Eriksson, 2008a; b). This allows for the analysis of individual characteristics and neighbourhood factors simultaneously (multilevel analysis). Rather than continuing to use surveys primarily for descriptive purposes, research should capitalize on this newfound possibility in future research.

Alternative modes of measuring neighbourhood context, such as systematic social observation (SSO), environmental audits and the use of key informants, may offer important additional information on neighbourhood disorder and social mechanisms that are not based purely on public perceptions. To ensure the reliability of ecological constructs, the so-called “ecometric” approach should be applied (see Raudenbush and Sampson, 1999; Raudenbush, 2003, for a description of the ecometric approach). Data should further allow for the testing of variables at different levels. This could be achieved by sampling individuals on the basis of their addresses, which would allow the researcher to assign respondents to areas of different sizes. Combined with small area statistics on neighbourhood socio-economic composition, this could lead to valuable insights.

Recommendations to policy makers

Why should policy makers be interested in neighbourhood effects? There are several reasons. In 1998, the Swedish government adopted a Metropolitan Policy to counteract segregation in metropolitan areas, with one of the targets being safety and security in the neighbourhood. Area-based policies are founded on the idea that neighbourhoods have unique influences on people’s lives and that targeting areas will make life better for a

lic health survey called ‘Health on equal terms’ annually since 2004. A total of 120,000 people ranging from 16 to 84 years of age are interviewed; the survey of living conditions (ULF), has been conducted once a year by Statistics Sweden since 1975 and includes questions on crime and security; the Swedish Crime Survey (SCS) was initiated in 2006 and has since been conducted annually by the National Council for Crime Prevention (Brå).

group of people. By definition this presumes that such effects exist and that we are able to identify and isolate them.

What guidance does this thesis offer regarding the direction of policies towards areas or individuals? Few studies have investigated neighbourhood effects on reactions to crime in Swedish settings, and this thesis has noted difficulties in identifying neighbourhood effects. When found, effects are generally modest and compositional effects dominate. If assumptions of neighbourhood effects are to continue to serve as a basis for metropolitan policy programs, a more thorough assessment of neighbourhood effects should be undertaken and high quality neighbourhood effects research should be promoted.

However, it has been argued that regardless of whether or not we are able to identify unique neighbourhood effects, area-based programs should be preferred (Lupton, 2003). Interventions should target areas to make them better and more equal, regardless of their independent effects. This motivates the interest of policy makers from an egalitarian perspective. To take one example, even though women may not worry more in disorderly neighbourhoods, all neighbourhoods should be free from disorder in the same way as public services should be evenly distributed for reasons of equality (Buck, 2001).

Lupton (2003) argues that knowledge about neighbourhood effects should be specific, and that studies should investigate the mechanisms responsible for these effects. In this way, results would contribute to the design and implementation of interventions by allowing for the targeting of specific groups and factors. As such, neighbourhood effects research has the potential to assist policy makers by identifying unique neighbourhood effects, by identifying the mechanisms that deliver these effects so that interventions can be tailor-made, and by identifying neighbourhoods and population groups that are in particular need of interventions. The basic premise for any intervention is knowledge about the specific character and extent of the problem at hand.

Overall, the results in this thesis end on a positive note in relation to neighbourhood effects in Sweden: they are small. In a comparison with the

U.S., where neighbourhood effects appear to be larger, this is probably due to the qualitative and quantitative differences in social problems and segregation found in Sweden as compared to those of the U.S. Given the fact that segregation continues to increase in Sweden, however, perhaps the most important question for policy makers is that of how these modest neighbourhood effects can be sustained at their low levels and kept from increasing.⁷

I suggest the following recommendations to policy makers. First, longitudinal monitoring of neighbourhood problem levels. If segregation increases, area effects may be increasing in parallel. In addition, the neighbourhood is an important arena for the socialisation of children and adolescents and is an important factor influencing juvenile delinquency (Kearns and Parkinson, 2001; Sampson, et al., 2002). Thus, monitoring the neighbourhood context has the potential to prevent children and adolescents from becoming involved in criminal activities.

Second, the policy response must be adapted to the specific mechanisms through which the neighbourhood influences individual outcomes, as well as the strength of these effects. Interventions need to be tailor-made based on a well-informed local profile. This includes taking seriously the residents own definition of their neighbourhoods problems. This definition will probably include problems that lie outside the traditional focus of the police. This makes interagency collaboration an essential part of making neighbourhoods safe and orderly.

Third, if disorder is considered an important aspect of inequality, with consequences for the individual as well as the larger neighbourhood, counteracting neighbourhood disorder should perhaps be viewed as an important part of reducing segregation. Also, considering the effects of disorder in triggering processes of urban decay, eradicating disorder may constitute one of the most important tasks for policy makers today. This suggestion should not be misinterpreted as a plea for zero-tolerance and for being tough on crime⁸, but rather for being tough on the causes of inequalities in the extent of individual problems.

⁷ Segregation has increased since the data utilized were collected in 1998. If the study was repeated today, neighbourhood effects may have increased along with increased levels of segregation, as hypothesized.

⁸ Many criminologists would agree that get-tough policies are not always the most effective, see for example Skogan, 2008

As the title of this thesis suggests, it has been my intention to shed light on the question *what's neighbourhood got to do with it?* There is often an assumption that where you live matters, although this issue has only been studied to a fairly limited extent, at least in Sweden. This thesis has contributed to a broadening of the empirical base and it will hopefully encourage other scholars to take on the challenges proposed for further research and to make theoretical and methodological contributions to the field. In conclusion, everything exists within a context "*and the most pervasive fallacy of philosophic thinking goes back to neglect of context*" (John Dewey). Societies have different structures ethnically, socially, economically and demographically, and segregation can be more or less pronounced. This national "context" should be taken into careful consideration in policy discussions and we cannot therefore "copy and paste" international findings on neighbourhood effects but must rather develop a national knowledge base of our own.

POPULÄRVETENSKAPLIG SAMMANFATTNING

Avhandlingens titel är *”Vad har bostadsområdet för betydelse? Områdeseffekter på brott och reaktioner på brott”*.

De flesta skulle hålla med om att omgivningen påverkar vardagslivet. Skillnader mellan områden visar sig exempelvis i att olika boendeformer dominerar, generellt skick på byggnader och omgivningar, vissa befolkningsgrupper är överrepresenterade, och områden har olika tillgång till daglig service såsom matvarubutiker, bank och barnomsorg. Dessa skillnader leder antagligen till olika upplevelser av det vardagliga livet. Frågan som intresserar forskning om områdeseffekter är om områdets egenskaper i sig påverkar människor (negativt) oavsett personliga egenskaper.

En genomgång av företrädesvis amerikansk forskning visar att bostadsområden som är särskilt socio-ekonomiskt utsatta har negativa konsekvenser för de individer som bor där. Den europeiska litteraturen stöder dock inte entydigt dessa resultat. Vidare har områdeseffekter endast studerats i begränsad omfattning i Sverige. Trots detta finns ett grundantagande i mycket av segregationspolitiken att områden påverkar individer negativt oavsett personlig bakgrund. Detta sammantaget motiverade mig att studera områdeseffekter med ett särskilt fokus på Sverige.

Avhandlingens övergripande målsättning är att bidra till en utökad förståelse av hur områdesegenskaper, med ett särskilt fokus på ordningsstörningar och problemnivå, påverkar människors oro att utsättas för brott samt sannolikheten att vidta brottspreventiva åtgärder. Avhandlingen be-

står av fyra delstudier som oberoende av varandra undersöker olika aspekter av hur områdesegenskaper påverkar människor. Målet är att avhandlingen ska kunna bidra till utformandet av välinformerade insatser som verkar för hälsosamma boendemiljöer på lika villkor för barn och vuxna.

Avhandlingens huvudsakliga metodologiska ansats är så kallad flernivåanalys. Flernivåanalys är en form av regressionsanalys som tar hänsyn till att människor bor i olika områden och att de som bor i samma område antagligen är mer lika än de som bor i andra områden. I den första studien som sammanfattar tidigare genomförda svenska studier inom området identifierades ett antal, främst metodologiska, problem med befintlig forskning. Exempelvis är det få svenska studier som tillämpar flernivåanalys och för att detta ska öka bör undersökningar och datamaterial utformas så att de går att använda i sådan analys.

Förklaringar till människors oro för brott har oftast sökts i individegenskaper. Människor som är särskilt socialt, fysiskt eller ekonomiskt sårbara antas ha en högre nivå av oro för brott. I den här avhandlingen studeras istället hur individen påverkas av nivån av ordningsstörningar i bostadsområdet. Ordningsstörningar omfattar till exempel graffiti och berusade människor och genom att se dessa problemindikationer antas individen dra paralleller till allmänt förfall och brottslighet och på så sätt antas oron för brott öka. Resultaten från delstudie tre visar att människor har olika nivå av oro beroende på var de bor och att detta inte enbart beror på att människor med olika sårbarhet samlas i vissa områden. Avhandlingen tittrade även på hur området påverkar sannolikheten att individer vidtar brottspreventiva åtgärder såsom att installera inbrottslarm eller att be grannen att se efter bostaden i delstudie fyra. Även här finns skillnader mellan områden. Till största del kan dessa skillnader dock tillskrivas individens personliga egenskaper och i mindre utsträckning områdets egenskaper.

Eftersom ordningsstörningar är i särskilt fokus i den här avhandlingen studerades även sambandet mellan befolkningstäthet, brott och ordningsstörningar på områdesnivå i den andra delstudien. Sambandet är etablerat inom kriminologisk forskning men det finns dock viss oenighet kring vilka faktorer som bidrar till sambandet. I den andra delstudien undersöktes

förklaringar till varför ordningsstörningar är olika närvarande i olika områden. Resultaten jämfördes mellan två europeiska städer (Malmö och Antwerpen). Områden med större socio-ekonomisk utsatthet har högre problemlivå. Resultaten fann även indikationer på att ordningsstörningar kan leda till högre brottslighet i området.

Avhandlingen visar sammantaget att var du bor och hur bostadsområdet ser ut spelar roll för människors oro för brott samt för hur man väljer att skydda sig mot brott. De största skillnaderna beror dock mest på *vem du är* och inte *var du är*. Resultaten bör ses som en utgångspunkt för framtida studier av områdeffekter generellt men för svenska studier i synnerhet. Mer kunskap om bostadsområdets påverkan på människan kan förhoppningsvis leda till mer likvärdiga och hälsofrämjande boendemiljöer, vilket i ett längre perspektiv har betydelse för segregationens utveckling och konsekvenser.

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ORIGINAL PAPERS I – IV

Malmö University Health and Society Doctoral Dissertations

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