# 2.2 The Social Ecology of Crime
# The Role of the Environment in Crime Causation

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## 1 Introduction

**Social ecology** (or human ecology) is, broadly speaking, 'the study of the social and behavioural outcomes of the interaction between man and his environment'. It implies that individuals are different and that environments are different and that specific interactions between the two will produce particular social and behavioural outcomes[1]. One such outcome is acts of crime. The **social ecology of crime** may thus be defined as 'the study of how the interaction between man and his environment causes

1 If there were no individual differences (only environmental variation) **or** no environmental variation (only individual differences) there would be no need for an ecological perspective in the study of behavioural outcomes like acts of crime; it would be sufficient to study the relationship between acts of crime and **either** individual differences **or** environmental variation. However, since individuals are different, and environments are different, and acts of crime are undertaken by individuals in an environment, there is good reasons to believe that acts of crime (like all actions) are an outcome of the interaction between individual and environment.

acts of crime' and is the study of how the individual-environment interaction produces **a particular behavioural outcome** (acts of crime).

Criminological research shows that the rate of acts of crime varies between environments (e.g., between countries, regions, communities, places) and that individuals vary in their crime involvement (e.g., by participation and frequency). Criminological study shows that the variations in crime rates between areas correlate with (and are predicted by) a range of environmental features, and that individual variation in crime involvement correlates with (and is predicted by) a large number of individual characteristics. Theories have been developed to explain area variation in rates of crime (e.g., social disorganisation and routine activity theories), and to explain individual differences in crime involvement (e.g., self-control and learning theories).

However, our understanding of how individual characteristics and environmental features **interact** in the process of crime causation is generally rather poor. Few empirical studies have explored the interaction between individual characteristics and experiences and environmental features in predicting crime involvement or acts of crime and (e.g., *Simcha-Fagan & Schwartz*, 1986; *Wikström & Loeber*, 2000), crucially, there are even fewer attempts to seriously theorise **how** the individual-environment interaction may cause acts of crime. One key exception is the recently developed **Situational Action Theory of Crime Causation** (*Wikström*, 2004; 2005; 2006; see also *Wikström & Sampson*, 2003).

The study of the role of the environment in crime causation has generally been undertaken under the labels of 'social ecology of crime' (and more recently), 'communities and crime' and 'environmental criminology', which jointly (but somewhat inadequately) may be referred to as 'the ecological approach'[2]. This approach is often contrasted with 'the individual approach'. Both approaches share a common flaw: the neglect of the other. As *Reiss* (1986 : 29) points out, "more is to be gained by linking those traditions than by their continued separate development and testing".

The purpose of this chapter is (i) to critically discuss (theoretically and methodologically) the 'ecological' tradition in the study of crime and (ii) to suggest how we can advance our understanding and study of the role of the environment in crime causation by (theoretically and methodologically) taking seriously the individual-environment interaction in crime causation.

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2 In many respects this approach may be more adequately described as an **epidemiological** approach. "Epidemiology is concerned with the patterns of disease occurrence in human populations and the factors that influence these patterns. The epidemiologist is primarily interested in the occurrence of disease by time, place, and persons" (*Lilienfeld & Lilienfeld*, 1980 : 3). If one exchanges disease for crime, and stresses 'the occurrence of crime by time and place' (not persons) and "the factors that influence these patterns", I believe this makes a good description of the core approach of the social ecology of crime (environmental criminology) tradition. For example, "two central concerns of environmental criminology have been explaining the spatial distribution of offences and explaining the spatial distribution of offenders" (*Bottoms & Wiles*, 2002 : 621).

One core argument of this chapter is that research in the 'ecological' tradition has not been ecological enough and that **we need to advance a truly ecological perspective to better understand the role of the environment in crime causation.** Empirically, the study of the 'ecology' of crime has largely ignored (i) the role of individual differences and their interaction with environmental features in crime causation and (ii) the role of the environment in shaping and forming individual characteristics and experiences relevant to crime involvement. Theoretically, the ecological tradition has largely failed (i) to specify the **situational mechanisms** that link individuals' characteristics and experiences and the features of the environment in which they take part to their acts of crime and (ii) to specify the **developmental mechanisms** that link environmental features and their changes to individual development and changes in characteristics and experiences relevant to individuals' propensity (predisposition) to engage in acts of crime. Without a better understanding of **how** the interaction of individuals and their environments causes acts of crime, and **how** individual development and changes in characteristics and experiences relevant to crime involvement are shaped and formed by environments and their changes[3], we are still a long way away from explaining the role of the environment in crime causation.

Another core argument of this chapter is that the concept of environment is often poorly defined in the 'ecological' tradition of criminological research and this hampers our ability to understand the role of the environment in crime causation. We therefore **need to better define the concept of 'environment' to be able to better understand its role in crime causation.** The concepts of 'communities' or 'neighbourhoods' are often used to refer to environments but these concepts are, generally speaking, not very well defined, and therefore rather vague. If the environment plays a central role in crime causation it is important to clearly define the concept of 'environment' and to specify its role in crime causation. This becomes even more important because in practise 'ecological' research mostly uses administrative geographical units (e.g., census tracts or wards) as (at times questionable) proxies for 'environments'.

A third core argument of this chapter is that (i) the measurement of environmental features and (ii) the measurement of individuals' exposure to different environments has generally been undeveloped, and **to advance the study of the role of environment in crime causation we need to better measure (relevant aspects of) the environment and individuals' exposure to different environments.** Only recently, through the introduction of 'ecometrics', has the problem of improving the **measurement** of (relevant) environmental features started to receive the attention it desperately needs (*Raudenbush & Sampson*, 1999). Since individuals are mobile and come into contact with a wide range of different environments in their daily life, the common practise in 'ecological' research of using the environment surrounding subjects' (offenders', victims') residen-

3 Although the individual tradition considers the role of the environment, this research largely neglects the importance of the wider contexts in which individual development and criminal careers are embedded. "The bulk of developmental research has focused on the most proximal environments, specifically the family and the peer group ... and has largely ignored neighbourhood contexts" (*Brooks-Gunn* et al, 1993 : 354).

ces as a measure of 'their environment' is often flawed since this measure do not capture their full exposure to different environments and how this relates to their crime involvement (many crimes are committed, and many victimisations takes place, outside an offender's/victim's area of residence). Only very recently, with the introduction of 'space-time budgets' to study individuals 'activity fields', has the crucial problem of measuring individuals' **exposure** to environments begun to receive any serious attention in criminology (*Wikström & Ceccato*, 2004; *Wikström, Ceccato, Oberwittler & Hardie*, 2006).

## 2 The Study of the 'Ecology' of Crime: Key Findings and Key Concepts

The key empirical findings in the study of the 'ecology' of crime are (i) that geographical areas (places) are different in their social and physical environment, (ii) that the level of crime (and the rate of residents' involvements in crime) vary between areas (places), (iii) that there is a relationship (correlation) between particular area (or place) environmental features and the level of crime (and the rate of residents' involvement in crime) and (iv) that changes in particular area (or place) environmental features can predict changes in their level of crime (or residents' rate of crime involvement).

These are not unimportant findings because they suggest that environmental features play a part in crime causation and that, if we can figure out what role the environment plays in the causation of acts of crime, this will help us explain why crime occurs which, in turn, may help us develop effective tools for crime prevention, if we can find ways to manipulate the identified environmental conditions that promote acts of crime.

Let's consider in greater detail certain key themes in research and theorising in the 'ecological' tradition, and some of their major problems, before outlining what is needed in order to advance beyond the current state of our knowledge about the role of the environment in crime causation.

### 2.1 Residential Segregation and Neighbourhoods

The modern 'ecological' perspective in the study of crime has largely emerged from the work of the so-called Chicago-School in the early part of the 20th century. The main problem addressed by the early Chicagoans in their study of crime was the relationship between neighbourhood features and their occupants' (particularly young occupants') involvement in crime and disorderly behaviours (e.g., *Shaw & McKay*, 1969). This research was conducted against the background of the Chicago School's broader research into the social ecology of large urban areas (notably Chicago), which may be summarised as (i) a study of the consequences of **rapid urbanisation** (ii) for the **residential segregation** of the population in urban areas (iii) into **natural areas** of people of a similar kind (iv) and the particular influence by natural areas (different) structural and organisational features on the **social behaviour** of their occupants.

The Chicago School studied how processes of societal change in the US (e.g., the huge influx of different immigrant groups from Europe and black migrants from the South) caused rapid growth of northern urban areas (like Chicago) and how different groups of newcomers to urban areas competed (on social and economic grounds) with each other and existing ethnic and social groups over desirable (and affordable) residential space, the outcome of which was the residential segregation of ethnic and social groups into natural areas[4] (neighbourhoods) with particular structural and institutional characteristics that set the context for occupants' social behaviour, and which was considered to explain neighbourhood variations in residents social behaviour.

There is no doubt that the early Chicagoans were inspired by *Darwin's* ideas of natural selection[5] (*Darwin*, 1968) in their explanation of residential segregation (i.e., the creation of natural areas or 'neighbourhoods'); "There are forces at work within the limits of urban community – within the limits of any natural area of human habitation, in fact – which tends to bring about an orderly and typical grouping of its population and institutions" (*Park*, 1925: 1). This force was **competition** (over desirable and affordable residential space[6]) and the outcome was **residential segregation**, which, by and large, was viewed by the early Chicagoans as something positive. "Under the influence of an intensified competition, and the increased activity which competition involves, every individual and every species, each for itself, tends to discover the particular niche in the physical and living environment where it can survive and flourish with the greatest possible expansiveness consistent with its necessary dependence upon its neighbors" (*Park*, 1961: 27) "This differentiation into natural economic and cultural groupings gives form and character to the city. For segregation offers the group, and thereby the individuals who compose the group, a place and a role in the total organization of the city life" (*Burgess*, 1925: 56).

The early Chicagoans recognised that the study of human ecology was more complex than the study of animal or plant ecology because humans develop technology to overcome environmental constraints and create institutions and norms to control behaviour; "There is a symbiotic society based on competition and a cultural society based on communication and consensus" (*Park*, 1961: 28). However, the relationship between the symbiotic and cultural levels were never made clear (*Alihan*, 1961: 96–97) and appears not to have guided very much the research questions raised and the

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4 *Park* (1925: 6) defined 'natural areas' as "areas of population segregation".

5 "The dissimilarity of the inhabitants of different regions may be attributed to modification through natural selection, and in a quite subordinate degree to the direct influence of different physical conditions. The degree of dissimilarity will depend on the migration of the more dominant forms of life from one region into another having been effected with more or less ease, at periods more or less remote; – on the nature and number of former immigrants; – the relation of organism to organism being, as I have already often remarked, the most important of all relations" (*Darwin*, 1968: 347).

6 Competition not only occurs over attractive residential space but also over attractive business space, which also had some influence on the development of particular 'natural areas' (*Park*, 1961).

empirical research conducted by the Chicago School and its followers. *Michelson* (1976:10–11) even observes that, "much of the work that followed *Park's* led to a general conception of ecology as a method, rather than a discipline /.../ Ecology thus became one method of establishing and testing the degree of relationship among variables".

## 2.2 The Concept of Social Disorganisation

The research by *Shaw & McKay* (1969) in Chicago, and some other large US urban areas, established that the rate of 'juvenile delinquents' varied significantly between neighbourhoods[7], and that there was a concentration of 'juvenile delinquents' in a smaller number of neighbourhoods, which they (somewhat inadequately[8]) labelled 'delinquent areas'. They showed that the rates of juvenile delinquents were associated with other social problems such as child mortality, tuberculosis and mental illnesses. They also showed that rates of juvenile delinquents tended to be highest in poor and physically unattractive[9] neighbourhoods populated by immigrant and migrant populations.

However, neighbourhood variations in occupants' poverty (or ethnicity[10]) was not considered by *Shaw & McKay* to explain neighbourhood variation and concentrations of juvenile delinquents; "economic segregation in itself /.../ does not furnish an explanation for delinquency. Negative cases are too numerous to permit such a conclusion" (ibid p. 186). Instead they regarded a high rate of 'juvenile delinquents' as a consequence of neighbourhood social disorganisation caused by enduring population turnover and its related population heterogeneity as a result of some neighbourhoods unattractiveness (generally physically deteriorated residential areas close to the CBD where poor immigrants and migrants could afford their first accommodation and which they would leave for better areas as soon as they established themselves and acquired means to move on). They argued that although prevalent values and norms concerning crime and deviance are conventional in all neighbourhoods, it is much more difficult to create and maintain effective social controls in neighbourhoods which have a high population heterogeneity and turnover; "low rates of delinquents reflect the existence of a stable institutional structure. /.../ A high incidence of delinquent behavior indicates the breakdown of the machinery through which needs of different segments of the population are met through conventional institutions" (ibid p. 384).

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7 *Shaw & McKay* did not study these variations using a division of Chicago into natural areas (neighbourhoods), but on a division of Chicago into square mile units.

8 The study was based on the place of residence of juvenile delinquents, rather than the place of crimes committed by juvenile delinquents.

9 For example, areas with, or in close proximity to, heavy industry or commercial centres.

10 *Shaw & McKay* (1969:164) argued that, "boys brought into court are not delinquent because their parents are foreign born or Negro but rather because of other aspects of the total situation in which they live."

A major contribution to the development of the neighbourhood social disorganisation theory was made by *Kornhauser* (1978) who took on the task to more clearly (than *Shaw & McKay* had) specifying the social processes that (supposedly) link population heterogeneity and residential instability in disadvantaged areas to the occupants' levels of crime involvement. Her take on the social disorganisation theory may be summarized as follows.

There is residential segregation on economic grounds. Communities therefore vary in social and economic resources. At the one extreme, there are communities with a wealthy, residentially stable and homogeneous population; at the other extreme, there are communities with a poor, residentially unstable and heterogeneous population. **Social disorganisation**, defined as lack of "a structure through which common values can be realised and common problems solved"[11] (ibid. 1978 : 63), emerges in poor, residentially unstable and heterogeneous communities because it is difficult to realise common values and solve common problems, due to such factors as poor communication resulting from residents' diverse and changing cultural backgrounds and experiences (poor trust and lack of cohesion), but also because the social institutions, due to factors such as lack of money, skills, and personal investments by residents, tend to be inadequate, isolated from each other, and unstable (lack of community capital). Poorly functioning social institutions and a lack of common values among community residents result in poor informal social controls and defective socialization, which, in turn, causes high rates of offending by community residents (particularly young people).

Further developments of social disorganisation theory by *Sampson* highlighted the importance of **family disruption** as an additional important neighbourhood structural characteristics influencing a community's ability to exercise informal social control over its children and adolescents (*Sampson*, 1987). He stressed that the community context plays a crucial role for **family management** and **child development**, arguing that a key feature of socially disorganised communities is that families in such communities often lack supportive social networks, which has negative consequences for their ability to control and supervise their children (*Sampson*, 1992).

*Sampson* argued that the community context (economical level, population heterogeneity, residential mobility, and family disruption) have a great impact on community social resources (family social capital, neighbourhood social cohesion), which, in turn, influences informal social controls of young people and conditions for their socialisation, which, in turn, influence rates of young peoples' offending (*Sampson*, 1993).

## 2.3 The Concept of Collective Efficacy

The core argument of the social disorganisation approach is that neighbourhood variation and concentrations of offenders and crimes "can best be understood in terms of variations in the abilities of local communities to regulate and control the behavior

11 A crucial 'common problem' in this context is that of crime and disorder.

of their residents [and visitors[12]]" (*Bursik & Grasmick*, 1993:24), where this ability is seen as an outcome of the neighbourhoods' structural characteristics (disadvantage, population heterogeneity, residential instability and family disruption) mediated through their impact on neighbourhood social organisation (social cohesion and informal social controls).

*Sampson* and colleagues have recently suggested the concept of **collective efficacy** to describe residents' willingness to intervene for the common good (i.e., their potential to exercise informal social control if needed) as the result of shared expectations and mutual trust in the community (*Sampson, Raudenbush & Earls*, 1997; *Sampson, Morenoff & Earls*, 1999). The concept of collective efficacy subsumes the concepts of social cohesion (a community's ability to generate moral and social integration among its residents – *Sampson*, 1993) and informal social control (monitoring and intervention). Collective efficacy is a concept referring to neighbourhood **potential** to effectively intervene to deal with common problems such as crime and disorder. That is, it is assumed that **if** residents of a neighbourhood have shared expectations and mutual trust (a high degree of social cohesion) **they will** intervene (exercise informal social control) **if needed** (i.e., as a response to a common problem such as crime and disorder). The prediction is that neighbourhoods with a high degree of social cohesion would have low rates of intervention (but a high readiness amongst the residents to intervene) and low rates of crime and disorder[13].

There has been a large number of studies post *Shaw & McKay* that generally have found a neighbourhood association between structural characteristics (such as poverty, population heterogeneity and stability, and family disruption) and neighbourhood rates of (mostly police recorded) offenders (typically young offenders), victims (typically adult victims) and crime (see, e.g., meta-analysis by *Pratt & Cullen*, 2005 and *Baldwin & Bottoms*, 1976 and *Wikström*, 1991 for examples of major European studies[14]). However, until more recently the hypothesised intervening social processes (e.g., social cohesion and informal social control) was mainly **inferred** rather than studied empirically.

The introduction of large-scale community surveys have made it possible to study neighbourhood variations in residents social cohesion and (willingness to exercise) informal social control. These studies generally show an association between neighbourhood structural characteristics, neighbourhood social cohesion and informal social control and (different measures of) crime and disorder, broadly consistent with the assumptions of the social disorganisation (collective efficacy) approach (e.g., *Sampson & Groves*, 1989; *Wikström, Torstensson & Dolmen*, 1997; *Sampson, Raudenbush & Earls*, 1997; *Wikström & Dolmen*, 2001; *Oberwittler*, 2004; and *Sampson &*

12 In other place of their text *Bursik & Grasmick* (1993:15) also includes visitors: "to regulate the behavior of residents and visitors to the neighborhood".

13 A crucial assumption of the collective efficacy theory that remains to be tested is that residents **will** intervene if faced with a common social problem such as crime and disorder, not only (state) that they are **willing** to do so.

14 *Pratt & Cullen's* meta-analysis is primarily based on US sources.

*Wikström*, 2007, the only cross-national comparative study on this topic). However, all these studies have used measures of residents' rates of reported local victimisations (and/or observations of local disorders) rather than rates of offending as outcome variables (recall that the classic studies by *Shaw & McKay* focused on neighbourhood rates of young offenders).

The fact that some studies in the social disorganisation tradition use (i) rates of offender residence locations, and other studies (ii) rates of localised victimisations (i.e., victimisations in the victims neighbourhood) or (iii) rates of crime events (regardless of whether the victim is local or not) as outcomes illustrates (in my opinion) some lack of clarity in what this research (and social disorganisation/collective efficacy theory) aims to study and explain, e.g., environmental influences on (i) the occurrence of acts of crime, (ii) the development of residents propensity to engage in acts of crime, or (iii) both. This problem (as illustrated in *Figure 1*) is worthy of greater consideration because it has both theoretical and methodological implications for the study of the role of the environment in crime causation.

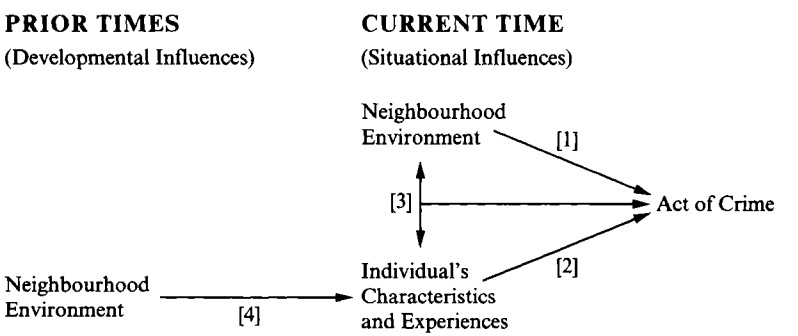


*Figure 1:* The problem of taking into account direct and indirect environmental influences on crime occurrences.

## 2.4 The Problem of Disentangling Situational and Developmental Influences

Whilst an 'ecological understanding' of acts of crime implies the study of how the environment **interacts** with individuals to cause acts of crime (Figure 1 – [3]), and how an individual's **exposure to past environments** have shaped and form his or her development of current characteristics and experiences relevant to his or her (current) engagement in acts of crime (Figure 1 – [4]), most 'ecological' research focus on a study of the association between (current) environmental features and of acts of crime (Figure 1 – [1]) and sometimes tries to disentangle (current) environmental (Figure 1 – [1]) and individual (Figure 1 – [2]) influences on crime occurrences.

The main problem of just studying the influences of environmental features on acts of crime is that it ignores the fact that **individuals** commit acts of crime and that individuals, depending on their characteristics and experience, will respond differently to particular environments (e.g., individual A, but not individual B, may commit an act

of crime in response to a particular environmental condition). The main problem of attempting to disentangle environmental and individual influences on acts of crime is basically the same; individual action is an outcome of the individual-environment **interaction** and individual characteristics and experiences and environmental features should therefore not be treated as unrelated (independent) influences[15]. In other words, individual and environmental influences on acts of crime should ideally be studied as interaction, rather than separate, effects.

Another problem with most 'ecological' research (but not all 'ecological' theory[16]) is that it tends to ignore **the role of the environment in forming and shaping individual characteristics and experiences**, which tends to downplay the (indirect) role of the environment (as 'a cause of the causes') in discussions of crime causation. Developmental processes are best treated as interaction processes in which, at any given time, current characteristics (inherent or acquired) and prior experiences interact with current (environmental) experiences in maintaining or changing predispositions to respond in particular ways to specific environmental features. It is possible that one of the strongest influences by the environment on crime occurrences is in its (indirect) effects on the development of an individual's characteristics and experiences relevant to his or her predisposition to engage in acts of crime as a response to particular (current) environmental conditions. It is important to bear in mind that a study of (current) individual-environment interactions is a study of situational influences on acts of crime and the role of environment in such influences, which disregards the role of the environment in forming and shaping individual characteristics and experiences relevant to their (current) responses to environmental conditions.

A particular problem of interest in this connection is the idea of 'time windows', that is, the idea that there are critical phases in an individual's development during which the environment has its greatest impact on the development of particular individual characteristics (*Earls & Carlson*, 1995). *Bloom*, for example, has argued that the influence of the environment is greatest when a particular characteristic has its most rapid development (*Bloom*, 1964). This implies that research into the role of the environment in shaping and forming particular individual characteristics relevant to individuals' engagement in crime should focus on the period when these characteristics undergo their most rapid development. This also has implications for thinking about prevention, because it suggests that prevention efforts should aim to target such periods in an individual's life when intervention can have the maximum effect on the particular characteristic one aims to influence.

In order to advance our knowledge about the role of the environment in crime causation it is analytically important to clearly distinguish between the role of the environ-

15 This does not preclude that at times environmental inducements, and at other times individual predispositions, may be the stronger effect. The point is only that there is always, at least, a minimal interaction between the two.

16 As previously discussed, social disorganisation theory stresses the role of neighbourhood differences in socialisation practises, although this has not seen much empirically study.

ment in (short term) situational processes that promote acts of crime and (long term) developmental processes that promote the evolution of individual characteristics and experiences conducive to engagement in acts of crime (predispositions).

## 2.5 The Problem with Aggregates of Actions as Outcomes when Studying Individual Action

Some will dispute the need to study individual outcomes when exploring the role of the environment in crime causation. I submit that regardless of whether we are concerned with developmental effects on an individual's crime propensities or situational effects on crime occurrences, we cannot escape the fact that crimes are **individual** actions and therefore ultimately have to be explained as such[17]. To stress that crime is an individual action is not to deny that there are important social processes relevant to an individual's crime involvement and development of crime propensities. On the contrary, it emphasises that we need to take seriously the problem of what links the structural and social organisational characteristics of the environment to individual action and development in order to explain the role of the environment in crime causation.

This problem is well illustrated by a, so-called, *Boudon-Coleman* diagram[18]. (Figure 2), which highlights that in order to make sense of the aggregate relationship between environmental (e.g., neighbourhood) characteristics and a rate of crime we need to specify the social, situational and transformational processes that link the two.

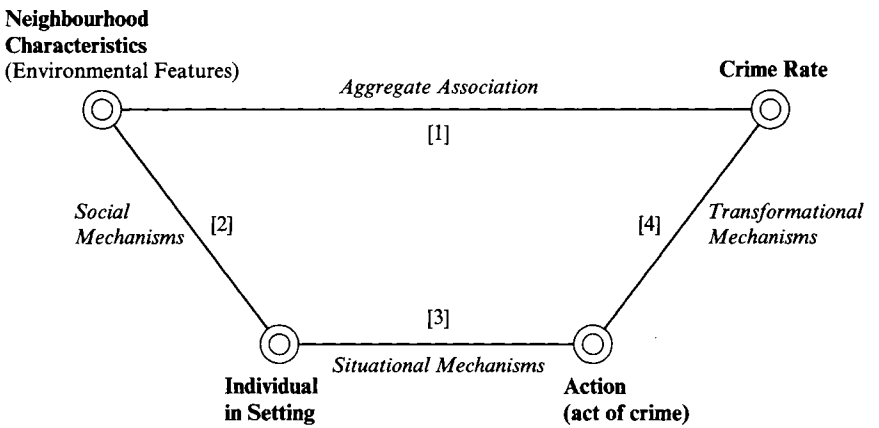


*Figure 2:* The Problem of Explaining Aggregate Relationships

17 An aggregate of acts of crime does not exist other than as a statistic. There can be no causes of an aggregate of acts but each act that makes up the aggregate can have a cause and, in principle, they can all have the same cause.

18 This is a term introduced by *Bunge* (1999) to acknowledge that *Boudon* and *Coleman* pioneered this type of cross-level analysis.

There are two main (substantive) kinds of mechanisms that link environmental features to crime rates: one is 'social mechanisms' (see, *Wikström & Sampson*, 2003) by which environmental features create the settings in which individuals act and develop (**the macro-to-micro mechanism** – [*2*]); the other is 'situational mechanisms' (see, *Wikström*, 2006), which link individuals and settings and causes particular actions such as acts of crime (**the micro mechanism** – [*3*]). The first (social) mechanisms deal with how such environmental features as concentrated poverty, residential heterogeneity and instability, and family disruption and their related social processes like social cohesion and informal social control may help create particular settings in which individual act (and develop). The second (situational) mechanisms deal with what aspects of the settings in which individuals take part influence their actions (and development) and, in this case, their acts of crime (and development of crime propensities).

Knowledge about how these two kinds of mechanisms work will enable us to explain how the relationship between environmental features and aggregate crime rates is produced (the **aggregate relationship** – [1]). However, there is also a third, more technical, 'mechanism' (the **micro-to-macro mechanism** [4]) that needs to be taken into consideration (when studying and interpreting aggregate relationships), which deals with **how individual acts of crime are aggregated into rates** and involves questions such as how reporting and recording systems operate[19].

The social disorganisation tradition has not succeeded very well in specifying the **social mechanisms** that (potentially) link structural and organisational features of environments to individual action (and development). *Wikström & Sampson* (2003: 127) have argued; "what is missing [in the 'ecological' tradition in the study of crime] is a concept that directly links the community context to individual development and actions" and suggested that the concept of '**setting**' (or behavioural setting) could provide such a linkage. They further argued that the key social mechanisms that link the features of a particular social environment (such as a neighbourhood) to its behavioural settings can be specified as rules, resources and routines; "the community structure provides resources and rules that the residents can draw upon in their daily life, which in turn influence the patterning and content of their daily routines and the specific resources and rules associated with specific types of behavior settings generated by the community routines" (ibid p. 127).

The social disorganisation tradition, or criminology in general for that matter, has not succeeded very well in specifying the **situational mechanisms** that explains individuals' acts of crime. This is a knowledge gap that *Wikström* (2004; 2005; 2006, see also *Wikström & Treiber*, 2006) has attempted to address in his **situational action theory of crime causation**. In principle, this theory states that individual action, like acts of crime, is an outcome of the interaction between an individual and the setting in which he or she takes part. The proposed situational mechanisms that links an individual and the setting to his or her actions (including acts of crime) is (i) the per-

19 It should be noted that this problem also applies to cases in which the crime rate is based on survey data (e.g., victim survey data).

ception of action alternatives and (ii) the process of choice, that will vary depending on the interaction between an individual's characteristics and experiences and the features of the setting in which he or she takes part. It is argued that the key individual differences relevant to individuals' engagement in acts of crime are their morality (moral values and moral habits) and ability to exercise self-control (based upon their executive capabilities), while the key relevant features of a setting is the opportunities and provocations it provides, and the moral context in which these opportunities and provocations occur (i.e., the specific moral rules that apply to the setting, and their levels of enforcement and sanctions). Crucially, an individual's acts of crime are seen as an individual's moral engagement with the moral context of a setting in response to particular opportunities and provocations.

Thus to advance our knowledge about the role of the broader social environment in crime causation, we need to focus our empirical study and analytical reasoning (theory) on furthering our understanding on how structural and social characteristics of environments create the settings (and different types of settings) in which individual develops and act. This study and analysis should preferably be guided by knowledge of what aspects of settings are relevant to individuals' engagement in acts of crime and development of crime propensities.

## 2.6 The Problem of Using Neighbourhoods as Measures of Individuals Environment

A particular problem with the social disorganisation (collective efficacy) tradition in the study of crime is its (sole) focus on neighbourhoods as environments. The idea that the area surrounding an individual's home base is an important part of his or her environment is likely to have some validity, particularly for children and young people[20]. However, most individuals, including children and adolescents (some more than others) spend part of their (waken) time outside their neighbourhoods (e.g., at places of work or school, at places of shopping or entertainment, or at friends residences or neighbourhoods that to a varying degree may be located outside an individual's neighbourhood) and hence environmental influences on their development and actions may have a much further reach than the immediate environment of their home[21].

Residents do not only spend time outside their neighbourhood, they also commit crimes outside their neighbourhood. Although there is a general tendency for offenders not to travel too far to commit acts of crime (i.e., that there is a **distance-decay** relationship between the home base and places of crime commission – see, e.g., *Pyle*, 1974; *McIver*, 1981), it is still true that many crimes are committed outside the offenders neighbourhoods (*Wikström*, 1985:220–230; *Tita & Griffiths*, 2005:286),

20 People that are retired and unemployed are other examples of categories that may have a higher than average exposure to their neighbourhood environment.

21 Additional problems with using the current home bases as a measure of an individual's environment is that individuals move homes (which particularly needs to be taken into consideration in developmental studies) and that some individuals at times may lack a home (i.e., being of no fixed abode).

some types of crimes more so than others (see e.g., *Wikström*, 1991:216). Incidentally, this is an observation that was already made by the early Chicagoans (*Burgess*, 1925) but that did not influence much of theirs, (and that of others working in the social disorganisation tradition) subsequent study and theorising of the role of the environment in crime causation.

The fact that individuals spend time outside their neighbourhoods, and commit crime outside their neighbourhoods (and get victimised outside their neighbourhoods for that matter), suggests that using the environment of an individual's neighbourhood as the sole measure of his or her environment at times can be difficult to justify. With the main exception of research aiming to investigate situational influences of the neighbourhood environment on acts of crime occurring in the neighbourhood (by residents and visitors), using neighbourhoods to represent environmental influences on an individual's action and development is generally problematic.

A major problem with the neighbourhood concept is its unclear definition. What constitutes a neighbourhood and what marks its boundaries? *Bursik & Grasmick* (1993:6) claim that "there appears to be general agreement" that (i) "a neighbourhood is a small physical area within a larger area in which people inhabit dwellings", and that (ii) "there is a collective life that emerges from social networks that have arisen among residents and the sets of institutional arrangements that overlap these networks" and that (iii) "the neighborhood have some tradition of identity and continuity over time". This definition states that neighbourhoods are 'small physical areas' (how small?) that have a 'tradition of identity and continuity over time' (how about new neighbourhoods and neighbourhood change?) and are differentiated by their 'collective life' (how [on what criteria] does one spatially divide one form of 'collective life' from another, especially when there are many dimensions of 'collective life'?).

Very few researchers exploring the 'ecology' of crime have attempted to create neighbourhood divisions based upon analyses of spatial variations in 'collective life'. The common practise is to use pre-defined administrative areas to geographically define neighbourhoods and study how structural characteristics assumed to be of relevance for 'collective life' vary between these pre-defined areas (only more recently have studies used more direct measures of collective life such as social cohesion and informal social control).

This practise has created a number of analytical problems, notably, the fact that some neighbourhoods may be very heterogeneous as regards the collective life in its various parts. This is particularly common when large area units have been used to measure neighbourhoods, a typical practise in 'ecological' studies of crime. As a result some parts of a (large) neighbourhood may be characterised by residential instability, while others may not. It seems reasonable to argue that individuals are only influenced by the environments in which they take part, therefore that there is a risk when using large neighbourhood units measuring 'average' social conditions that this may mask differences in residents' exposure to particular (different) environments within the confines of a neighbourhood (in addition to the problem already discussed that the neighbourhood environment is unlikely to be the only environment to which individuals are exposed). Thus it seems advisable to avoid large geographical units as

measures of environments and attempt to study all the environments an individual is exposed to, rather than just his or her neighbourhood environment, when addressing the role of the environment in crime causation.

A further problem of focusing on 'neighbourhoods' as environments is that it detracts attention from the role of **non-residential environments** in crime causation. Individuals do not only spend time, and commit crimes (or get victimised) in residential environments. The city centre (CBD), for example, is an area of the city in which a lot of crimes happen but where offenders (and victims) are predominantly non-residents (*Wikström*, 1995). A perspective that has brought the importance of non-residential environments in focus is the environmental criminology tradition, which is largely based upon a routine activity approach to the study of the role of the environment in crime causation.

## 2.7 Land Use and Routine Activities

An important strand of research in the 'ecological' tradition is what has been referred to as 'environmental criminology' (*Brantingham & Brantingham*, 1981). Whilst the key driving idea of the social disorganisation (collective efficacy) approach is that the (residential) social environment (as a result of processes of residential segregation) set different conditions for socialisation and informal social controls of relevance to residents (and visitors') crime involvement, the key driving idea of **environmental criminology** is that variation in and concentrations of crime occurrences depend on differential 'opportunities' (to commit particular acts of crime) created by spatial differences in social activities and physical features of the environment as a result of different land uses.

Environmental criminology is primarily focused on studying the **crime event** and largely neglects the role of individual differences (and how such differences emerge) in the explanation of crime. *Brantingham* and *Brantingham* (1981 : 7) defined 'environmental criminology' as the study of locations of crime and criticized much earlier research for making the "general assumption that criminal residence locations and crime sites were spatially identical" (ibid. p. 24).

The 'environmental criminology' perspective stresses the importance of clearly analysing the **differences between offender residence and crime distributions** (a topic largely neglected by the social disorganisation perspective) and brought into focus **the role of non-residential environments** (which were largely neglected by the social disorganisation approach) and the **physical aspects of the environment**, primarily the man-made physical aspects of the environment (which were largely neglected by the social disorganisation perspective). Moreover, **the role of non-residents (e.g., employees) and technology as important aspects of informal social control** and the role of **formal social control** (e.g., policing) are also more clearly highlighted. Finally, 'environmental criminology' pay a more detailed attention to **temporal aspects of crime occurrences** (e.g., seasonal, weekly and hourly variations in crime occurrences) than the social disorganisation tradition do[22].

22 The social disorganisation tradition largely ignored temporal aspects on crime, aside from a

In the 'environmental criminology' tradition temporal and spatial variation in crime occurrences is largely seen as an outcome of routine activities (everyday social activities); "since illegal activities must feed upon other activities, the spatial and temporal structure of routine legal activities should play an important role in determining the location, type, and quantity of illegal acts occurring in a given society or community" (*Cohen* and *Felson* 1979 : 590). Area and place variation in legal routine activities is to a large extent a reflection of area and place variations in land use and therefore patterns in land use may be regarded as a key to understanding variations in crime (*Wikström*, 1991).

Large towns and cities are characterized by a social life that is influenced by their heterogeneity and the size and density of their population. Sites are put to a wide variety of uses including a multitude of combinations of housing types, industries, shops, and public entertainments, and range from purely residential areas to downtown districts with few permanent inhabitants.

Human activities and the related social characteristics and mix of individuals present also vary considerably form one area to another. Since the frequency of different human activities varies with both the day of the week and the time of day, they exhibit not only spatial variation but also temporal variation – variations occur over time in any given area. Together with patterns of residential segregation, the street layout, the structure of the public transport system, and spatial and temporal differences in human activities affect patterns of different social groups' movement throughout the city at different times of the day.

All of this influences area and place variations in the frequency and types of encounters between people of differing social backgrounds and relationships, and the circumstances in which they meet, and the degree to which people of different social backgrounds are exposed to various kinds of material goods under different levels of supervision. According to 'environmental criminology' (routine activity theory) this is an important background for area and place variations in the rate and structure of crime, although our understanding of the social and situational mechanisms of these influences is rudimentary.

Few studies have explored relations between land use and crime, but those few have generally shown that there are clear links between the two (see e.g., *Rhodes* and *Conly* 1981; *Wikström* 1991; *Hirschfield* and *Bowers* 1997) and, to my knowledge, no study has attempted to **directly measure** spatial variation in particular routine activities and its link to spatial variation in crime and its structure. The intervening role of routine activities (between land use and crime occurrences) is thus largely **inferred** rather than studied empirically.

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study of neighbourhood crime trends (e.g., *Taub*, *Talyor & Dunham* (1984) and *Schurman & Kobrin* (1986).)

## 2.8 The Concept of Opportunity

The proposed crucial concept in routine activity theory linking routine activities to crime occurrences may be regarded as that of opportunity. Opportunities are generally seen in this theory as caused by the availability of 'a suitable target' and its 'lack of guardianship' presented to 'a motivated offender' (*Cohen & Felson*, 1979). A "capable guardian" is a person (perceived to be) willing and capable to intervene to stop crimes. What constitute a 'suitable target' is never made fully unclear. According to this perspective the main explanation of area and place (and temporal) variation in (particular) crime occurrences is essentially spatial variation in opportunity (the intersection of 'motivated offenders' with 'suitable targets' that 'lack guardianship') caused by spatial variations in routine activities. However, this dynamic aspect of the theory has, as pointed out by *Bursik* and *Grasmick* (1993:89), never been studied[23].

Routine Activity Theory (*Cohen & Felson*, 1979) may at first glance appear to be an interaction theory[24] (stressing the role in crime causation of the intersection of motivated offenders and suitable targets lacking capable guardianship), but a closer look reveals that it basically is (and has been applied as) a theory about environmental influences on the occurrence of crime events (focused on the motivational influence on crime occurrences of individuals' exposure to suitable targets which lack adequate guardianship, and largely disregarding the role of individual differences in crime propensity and its emergence). For example, *Clarke & Felson* (1993:2) admit that, "the routine activity approach offered a thought experiment: to see how far one could go in explaining crime trends without ever discussing any of the various theories about criminal motivation[25]". *Clark & Felson* (1979) even state in their original formulation of the Routine Activity Theory that 'motivated offender' is treated as 'a constant' in their theory. Although *Felson* (1994) in more recent discussions of the theory, at least pays lip service to the importance of incorporating the role of individual differences into the theory[26], the basic neglect of dealing with the role of individual differences (and their emergence) may be considered a major shortcoming of this theory, considered as a theory aiming to explain the role of the environment in crime causation. There are no environmental features that cause **all** individuals to act in the exact same way.

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23 To my knowledge, there have not been any such studies to date.

24 It clearly has the potential to become an interaction theory.

25 Which probably more adequately should read theories of criminal propensity rather than theories of criminal motivation.

26 "The attempts to link routine activity theory ('ecological' theory), self-control theory (individual propensity theory) and rational choice theory (action theory) are steps in the right direction (e.g., *Clarke & Felson*, 1993; *Felson*, 1994; *Hirschi*, 1986; *Hirschi & Gottfredson*, 1988; *Gottfredson & Hirschi*, 1989; *Gottfredson & Hirschi*, 1990:22–25; *Nagin & Paternoster*, 1993; *Wikström*, 1995; *Gottfredson & Hirschi*, 2003). However, this has so far mostly been a question of saying it is a good idea and possible to link these types of theory, or that they are complementary, rather than actually suggesting that they should (or how they can) be integrated" (*Wikström*, 2005:214).

Whilst routine activity theory provides a potential link between broader social processes (routine activities) and crime occurrences by the concept of opportunity (which is a strength of the theory), the treatment of the concept of opportunity and its role in crime causation, in my opinion, is not very sophisticated. *Cohen* and *Felson* (1979: 590) argue that, "the probability that a violation will occur at any specific time and place might be taken as a function of the convergence of likely offenders and suitable targets in the absence of capable guardians".

To argue that if someone is motivated to commit a crime and faces a suitable target lacking adequate guardianship, he or she will commit an act of crime, without explaining why some individuals, but not others, will respond with an act of crime to (particular) suitable targets lacking guardianship (and why some targets are suitable to some but not others, or why some forms of guardianship but not other are relevant to and influence some but not others crime involvement) does not take us very far towards understanding the causes of crime, or the role of the environment in crime causation.

Whilst Routine Activity Theory has made a (primarily theoretical) contribution to our understanding of the social mechanisms that link structural and organisational features to the setting in which individuals act (i.e., the idea that routine activities spatially and temporally create differential opportunities) it has not succeeded very well in furthering our understanding of the situational mechanisms through which opportunity (the exposure to suitable targets lacking adequate guardianship) interacts with individual characteristics and experiences in producing acts of crime (and has made no contribution whatsoever to our understanding of the role of the environment in individuals' development of differential crime propensities).

## 3 New Directions in the Study of the Social Ecology of Crime: Advancing Knowledge About the Role of the Environment in Crime Causation

To understand and explain human action, like crime, we ultimately need to elucidate the **situational mechanisms** that link individuals and environments (settings) to their actions. We need to identify what individual characteristics and experiences, what features of the settings, and what aspects of their interaction, are important in causing individuals to see crime as an action alternative and to choose to commit an act of crime (*Wikström*, 2005).

**Crime** is a class of action, defined as 'acts that breach moral rules defined in law'. A **moral rule** is 'a rule that stipulates what is right or wrong to do (or not to do) in a particular circumstance'. When we are dealing with the 'social ecology of **crime**' we are interested in explaining moral action. **Moral actions** are acts guided by moral rules. Crimes are a subset of moral actions, differentiated only by the fact that they are acts 'defined in law'. A theory of crime causation is therefore a special case of a more general theory of moral action (*Wikström*, 2006). The key questions in explaining moral rule breaking (and crime) are, (i) what **moves** people to break moral rules

(or commit acts of crime), and, (ii) how do particular individual and environmental features **interact** in this process?

**Human actions** do not occur in an environmental vacuum; they are an individual's way of dealing with his or her environment. Motivations arise, action alternatives are perceived, and choices of action are made in response to the environmental conditions an individual faces. What motivations an individual will have, what action alternatives he or she will perceive in acting upon his or her motivations, and what choice of action (among the perceived action alternatives) he or she will make depend on the interaction between his or her individual characteristics and experiences (predispositions) and the features of the settings (inducements and constraints) in which he or she takes part.

*Wikström* (2004; 2006) has suggested that, when dealing with the problem of crime causation, the key relevant individual characteristics and experiences are an individual's morality (moral values and moral habits) and ability to exercise self control, while the key relevant features of a setting are the opportunities and frictions it provides and, crucially, the moral contexts in which these opportunities and provocations occur, which (together with an individual's morality and ability to exercise self-control) determine whether they will cause temptation or provocation, and whether the response might be an act of crime.

To explore situational influences on crime occurrences we need to develop methods to study how individuals' morality and ability to exercise self-control interact with opportunities and frictions and their moral context, to influence their perception of crime as an action alternative and choice of an act of crime in response. One possible way to investigate this (although there are of course many other possible study designs) is using scenario techniques to randomly allocate environmental conditions to subjects and psychometric scales to measure their morality and ability to exercise self-control, and analyse variation in responses to the different scenarios by individual differences in morality and ability to exercise self-control.

**Human development and change** does not occur in an environmental vacuum; it is the individual's internalisation of experiences and responses to specific environmental exposure (adding to or modifying existing characteristics and experiences). *Bronfenbrenner* (1979:3) has defined individual development as "a lasting change in the way a person perceives and deals with his environment". What is likely to motivate an individual, what action alternative he or she is likely to see, and what choices of action he or she is likely to make in response to a particular setting depends on his or her current predispositions as a result of his or her past experiences of and responses to interactions with particular environments (*Wikström*, 2005). An individual's development of characteristics and experiences is thus linked to his or her current actions in their predisposing influence on how that individual tends to see action alternatives and make choices in response to particularities of the settings in which he or she currently operates. *Wikström* (2005) has suggested that socialisation practises (specifically moral teaching and monitoring of moral rule following), caring (promotion of physical and emotional well-being) and cognitive nurturing (promotion of cognitive skills) are key developmental mecha-

nisms[27] of relevance to an individual's development of crime propensities. Specific socialisation practises, caring and cognitive nurturing are all aspects of the environment in which an individual takes part.

People grow up and live in different environments. The **environment** may be defined as, 'all that is external to human beings' (the social environment constitutes social relations and events and the physical environment is made up of non-human objects and things and their relations). An **individual's environment** is all (i) that is **external** to him or her (including other humans) and (ii) that he or she is **exposed** to in daily life (in a developmental perspective an individual's environment may be defined as all that is external to him or her and that he or she has been exposed to in the past). An individual's environment may be conceptualised as his or her **activity field**, consisting of 'the particular configuration of settings in which an individual currently takes part and thereby to which he or she is exposed'. A **setting** may be defined as 'the social and physical environment (objects, persons, events) that an individual, at a particular moment in time, can access with his or her senses' (*Wikström*, 2006). The environmental influence on an individual's development and action occurs through the settings in which he or she takes part (and have taken part).

To better study the role of the environment in individuals' development of crime propensities and involvement in acts of crime, we need methods that enable us to study their activity fields and the relevant characteristics of the settings that make up their activity fields. One such method is the **space-time budget** that, by retrospective interview, locates the subject hour by hour (over a specific period such as a couple of days) and codes where he or she is (geographical location), at what place (e.g., home or classroom), with whom he or she spends time (e.g. peers or parents), in what activity he or she is engaged (e.g., studying or just hanging around), and if he or she is involved in any act of crime or other behaviour of interest to the particular study (*Wikström & Ceccato*, 2004). This technique enables a classification of the settings in which the subject actually takes part.

If such a study is combined with a 'community survey' with detailed responses for very small areas (e.g., 300 meter radius areas) for which data, for example, about routine activities, and social cohesion and informal social control are collected (using advances in 'ecometrics' to create the best possible measures), it enables one to study not only the setting characteristics, but also the social characteristics of the immediate area in which the setting is embedded and which may have an impact on actions taken in the particular setting (*Oberwittler & Wikström*, 2008). For example, subjects can be classified according to how much time they have spent unsupervised with peers in areas with low collective efficacy, enabling us to study how this relates to their crime involvement (*Wikström, Ceccato, Oberwittler & Hardie*, 2008).

27 Socialisation practises (moral education) are seen as mostly relevant for the development of moral values and moral habits, while cognitive nurturing is seen as mostly relevant for the development of the ability to exercise self-control. Caring is seen as indirectly relevant to both; it creates the attachments necessary for effective moral education, and physical well being as a necessary precursor for optimal development of cognitive functioning at its critical phases of development.

This is an excellent method to study subjects' **exposure** to particular environments and, in my opinion, vastly superior to the use of neighbourhood structural and organisational features as a measure of an individual's exposure to environmental influences. If space-time budget data are collected longitudinally (e.g. annually), it also provides a measurement of individuals' exposure (and changing exposure) to setting characteristics believed to be of relevance for their development of crime propensities. For example, subjects can be classified according to how much time they spend in 'pro-social settings', and subjects stability and change in exposure to 'pro-social settings' can be studied over time, which may then be related to psychometric measures of their moral development and changes in their ability to exercise self-control (which may be regarded as two key aspects of crime propensity).

The major drawback of the space-time budge method is that it is very time consuming and comparatively expensive and therefore data collection covering longer periods of time (than a couple of days) are unlikely in normal circumstances of funding to be economically viable. In practise, one therefore often has to assume that data collected for a short period of time reflects the general characteristics of an individual's activity field over longer periods of time. For example, assuming that annually collected data for a four-day period is a good approximation of the subject's general characteristics of his or her activity field for that year.

To better understand the role of **structural and organisational features of environments** (e.g., concentrated poverty and social cohesion) in crime causation we need to explain how these features help create particular settings in which different individuals' develop and act. Different structural and organisational features of environments are likely (i) to produce different settings with different implications for the development and actions of those who takes part in the settings and (ii) to influence what kind of individuals are introduced to what kinds of settings.

Again, the application of the space-time budget method to a random sample of a population of a geographical area like a city, combined with a detailed community survey, can provide important empirical data on the relationship between different environmental conditions (like particular routine activities, such as public entertainment, social cohesion and informal social control) and the occurrence of different kinds of settings that may be more or less conducive to acts of crime and disorder and the development of crime propensities (thereby linking broader structural and organisational features of the environment to situational features).

Whilst we have learned a lot about the relationship between the environment and crime from the analytic work (theory) and empirical study that has been carried out in the social disorganisation and environmental criminology (routine activity) traditions, we are still a long way away from fully understanding the role of the environment in crime causation. To advance our knowledge about the role of the environment in crime causation we need to advance our understanding (theoretically) of the social, situational and developmental mechanisms that link individuals and their environment to their development of crime propensities and crime involvement, and apply and develop new methods to empirically study the interaction between individuals and their environment. This work has only just begun.

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