CHAPTER 8

Even before Spatialising the hotspot: Theoretical Approaches towards understanding Environmental Criminology

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1. Introduction

Crime is not an easily-explainable concept. Definitions of crime differ according to the school-of-thought but the main tenets are universal. These include harm caused to victims, social consensus and official societal response (McLaughlin and Muncie, 2001, 59). The sociological impact of crime is put into context by Durkheim's statement that:

> *"It is impossible for offences against the most fundamental collective sentiments to be tolerated without the disintegration of society, and it is necessary to combat them with the aid of the particularly energetic reaction which attaches to moral rules"* (Durkheim, 1933, p. 397).

The theoretical debate developed from the harm-based theory of Jeremy Bentham to Sellin's science of criminal behaviour that looked at "naturally existing conduct norms", to rule-relativist theory and radical conflict theory. Critical conflict theorists view crime in connection with an independent notion of "human rights" as against laws, which argument was further developed by postmodernists as a dynamic evaluation of harm where each case "is a moment of expression of power" (Henry and Milovanovic, 1996, 104).

A theory posited by the rule-relativists looks at crime as "historically, temporally and culturally relative" to the social construct rather than an absolute (McLaughlin *et al*, 2001, 60). Thus, conduct that may be deemed as criminal in one state may not be deemed so in another. This situation induces the need for cross-sectional research (across space) on what is considered as crime at a particular point in time. This theory brings to the fore the temporal issue that crime changes over time as a community (state) develops where new norms and sanctions are created, inducing longitudinal research (Figure 1.1). An example would be the transition from a situation of low rates of non-serious crimes to one where

serious crimes become the norm. The temporal aspect of social analysis was enhanced by the inclusion of the spatial element, moving from John Hagan's theory of a pyramid of crime (through the integration of the different dimensions of crime), to a 'prism of crime' (Henry and Lanier, 1998) that attempts to cover all the theoretical elements mentioned above in one concept.

Figure 1.1: Crime changes across space (state) and time (years)
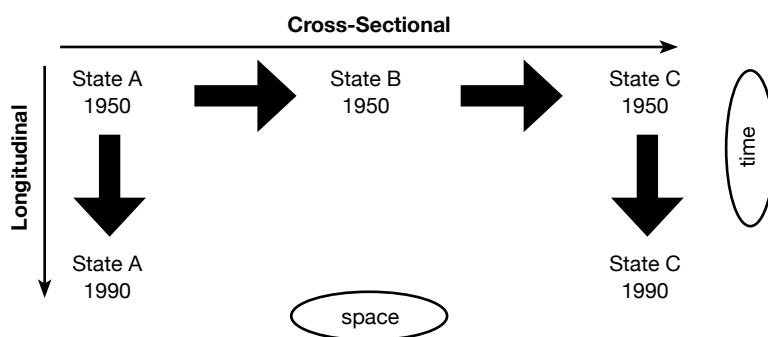

Source: Formosa, 2007

2. The spatial concept

The investigation of crime has also seen research into the geographic discipline. However, "for too long, geographers have observed distributions of phenomena while generally failing to draw attention to major spatial differences in a number of conditions of life of profound importance to many people" (Harries, 1974, p. xiii). Crime and spatial analysis were already well advanced in the 1970s but links to the social construct were needing and other concepts such as the issue of climatic impact on crime has never really taken off, though identified by Dexter as long ago as 1904 and by Cohen in 1941 (Harries, 1974). This need is felt to the extent that with extensive improvement in environmental impact assessment requirements in the development planning, spatial planning and environmental design, there is still a lack of integration of the safety factor in such studies (Glasson and Cozens, 2011).

Spatial research in crime has a long history where the earliest attempts at analysing crime through spatial patterning can be traced back to several nineteenth century innovations. In Belgium, Adolphe Quetelet (in 1835) and in France, Andre Michel Guerry (in 1833) made use of maps together with studies of urban-rural and crime/socio-economic conditions relationships (McLaughlin *et al*, 2001, p. 133; McLaughlin and

Muncie, 2005). They analysed crime in relationship to location, climate, education levels, occupation and employment. In 1861, Henry Mayhew published maps of England and Wales outlining the 'intensity of criminality' in relation to ignorance, illegitimate children and other social issues. Figure 1.2 shows an image of the number of criminal offenders for every 10,000 persons in each county of England and Wales. The map was based on averages from the returns for the last ten years under study. The counties registering below the England and Wales average were represented in white and counties above the average were shaded in black. (Kelley, 1967).

Figure 1.2: Mayhew's 'Intensity of Criminality" map
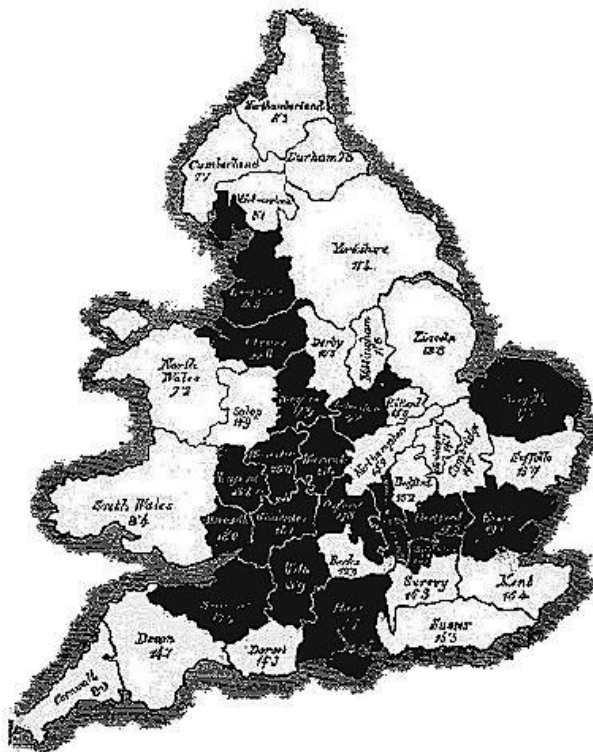
Source: Kelley, 1967

Other studies included Shaw and McKay's 1930s analysis of Chicago (1942), Morris's (1957) ecological review of delinquency in a London suburb and McClintock's London study (1963) that exhibited a gradient of diminishing crime rates with distance from the centre. Schmid (1960) studied Seattle and identified an inverse relationship between crime rate and distance from the city centre using isopleth maps to identify crime types. Lambert (1970), in his Birmingham (UK) study indicated different crime types by police zones and found that crime was concentrated in immigrant areas as indexed by both offender and offence statistics. Todorovich (1970), in his Belgrade housing communities study found that crime was not clustered around the central area and that at least some of the high-rate delinquency areas were characterised by immigrant populations and ethnic diversity. During this time, centrographic analysis offered hypothesis relating to changes in crime patterns and relationships between these changes and law enforcement activities (Harries, 1974, p. 119).

Taking these studies further, Harries looked at micro-environments stating that these can be as small as rooms, as offences have their own "ecologies of space", as well as structural characteristics that may affect opportunity levels for particular types of crime (Harries, 1974, p. 78; Nelson, Bromley and Thomas, 2001). Density is a case in point; one can study it at diverse levels, from the macro scale to the micro scale. National and regional population and housing densities as against crime signify a macro scenario, whilst the micro-scenarios may tackle such areas as the number of persons living in a block or the level of crowding such as the number of persons per room. Each level of density requires an analysis to identify the most significant correlate of crime.

3. Review of environmental criminology theory

The theoretical constructs discussed earlier in the chapter enabled investment into the study of crime within a spatial construct. The leap from non-spatial to spatial study lead to the conceptualization of Environmental Criminology theory which can be defined as the study of crimes based on complex relationships structured through space and place (McLaughlin *et al*, 2001, p. 132). This includes the study of offender residence, offence location, offender- offence relationship and the myriad interactions between the three pivots of incidence (crime), space (relationship) and place (geographical location).

Roots of the theory

Environmental criminology is the study of crime and victimization in its relation to place and space. It is also described as 'the geography of crime and 'the ecology of crime', and attempts to develop an insight into the analysis of the relationships between place, crime and offending (Bottoms and Wiles, 2001). Criminological studies have integrated the study of 'locational' crime to the activities of the individuals and organisations involved

in the criminal activity, whether they are perpetrators, victims or observers (Salleh, Mansor, Yusoffa and Nasir, 2012).

The relationship of crime to place has been developed into one of space due to the multiple linkages making up social realities related to that place. The term spatial takes on a sociological meaning to cover crime activities in the holistic approach of what constitutes crime: why, when and where it occurs, with consideration given to the baggage that the offender carries. The spatial activities of offenders take on a new role due to the diverse links related to their activity, it is not simply a case of who commits a crime or where it occurs, but how the links enforce or make possible the activity opportunities.

Environmental criminology takes into account the boundaries within which people act, such as work spaces, meeting-points and recreational areas. It explores the spatial concepts inherent in the wider scenario of criminal activity, such as the widening reaches of offenders due to access to new technologies and inventions (better vehicles, instant mobile communication devices), as well as 'zoning' policies instituted by planning authorities and transport. Interesting to note is the opportunity for emerging crime scenarios where offenders engage in computer crime that does not recognise any border or state, with the offender using remote technology to commit an offence from fraud to pornography.

Historical Development of the Theory

The main influence for the study of environmental criminology grew from the work of the Chicago School of Sociology, with the main proponents being Shaw and McKay, and their 1930s' theory of social disorganisation. This was based on urban work by Park and Burgess in the 1920s, who created the concept of human ecology[1] (Maguire *et al*, 1997, p. 308). Burgess's zone model of urban development conceptualised that there are five concentric zones in a city (Figure 1.3) where each zone is characterised by different types of residents who migrate away (transit) from the centre as their status improves. Over time, growing cities would engulf other peripheral towns that would become zones of transition themselves. Since urban areas contain disproportionately high rates of social problems, the larger the city the higher the concentration of poverty, welfare dependency and crime (Maguire, Morgan and Reiner, 1997, p. 308; Orford, 2004; Oh, 2005).

Urban ecology posits that there is a positive correlation between population density, city size and crime rates especially were population density is high and the possibility of bypassing danger is small (Messner and Golden, 1992; Entorf and Spengler, 2000[2]). Entorf *et al* (2000) found a high association between high population density and violent crime,

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1   Human Ecology is the derived from the botanical sub-discipline of plant ecology. The concept was based on the analysis of the spatial and temporal relations of human beings, by the selective, distributive and accommodative forces of the environment (Maguire *et al*, 1997; 308). The theory was also called the 'ecology of crime' due to the relationship between crime and the urban environment.

2   cf Bundeskriminalamt, Polizeiliche Kriminalstatistik (various issues, 1975-1996), Wiesbaden, Germany

Figure 1.3: Park and Burgess's zone model of urban development

The Concentric Zone Model

1. Central business District

2. Transitional Zone
***Recent Immigrant Groups**
• Deteriorated Housing
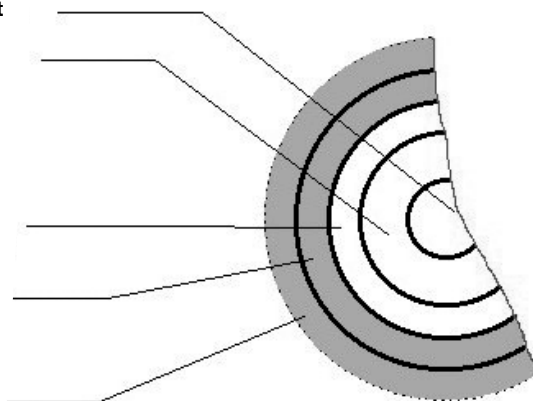• Factories
• Abandoned Buildings

3. Working Class Zone
• Single Family Tenements

4. Residential Zone
• Single Family Homes
• Yards/Garages

5. Commuter Zone
• Suburbs

Source: http://www.csiss.org/classics/content/66

where an increase in one results in an increase in the other.

This is further enhanced due to the boundaries imposed by such phenomena as urban sprawl, where inelastic cities are created, that have no opportunity to keep on expanding. By the very fact that they are constrained by boundaries (such as sea, peninsulas, etc) they end up being even more segregated and higher degrees of poverty flourish (Shaw-Taylor, 1998). "A high number of persons per room would lead to "irritable, weary, harassed, inefficient" parents, a repulsive environment for children, and a consequently high level of juvenile autonomy, which in turn contributes to the development of gangs of delinquents" (Galle, Gove and Miller, 1972, p. 85; Harries, 1974).

Wang (1999), on the other hand postulates that the shrinking living space in urban areas in effect reduces crime rates, stating that this could be due to the proximity of people to each other. Wang posits that an increasing population density is directly related to crime reduction. However, this may also increase the possibility of unknown crime as well as the 'dark figure of crime'. These two opinions seem contradictory but are a source of debate on the possible outcome for future mega-cities and what they are expected to experience. Further study is needed in this area especially on population density and the relationship to crime. This is particularly due to the fact that areas with a high population density offer a higher concentration of crime opportunities and effectively higher potential crime targets (people and property).

The Next Steps

The early 1920s research led to a number of theories, namely the 'Culture Conflict Theory' of Sellin in the late 1930s and Sutherland's 'Theory of Differential Association' (Maguire *et al*, 1997, p. 308). Sellin, followed by Vold, Dahrendorf and Turk based their theories on the issue of diversity in an industrialised society[3]. Such diversity causes conflict to materialise moving though such constructs as conduct norms required from citizens coming into conflict with the prevalent crime norms. Dahrendorf's move from a Marxist concept of **material** haves-haves-not to **power** haves-haves-nots easily highlights the realities of society, based on the power- holding/hoarding elite and the powerless masses. Sutherland stated that through social interactionism, offenders learn favourable definitions through mixing with others who find lawbreaking acceptable (Hochstetler, 2002). However, the main impact was produced by Shaw and McKay since their research concentrated on the analysis of Chicagoan juvenile crime in the early 1930s through the mapping of offender residences at different points in time.

The Chicago researchers ventured further than just spatially analysing the offender community through a quantitative study. They also looked into the social aspect of the offenders and what was termed 'low life' in the cities. The second aspect of the study concentrated on qualitative case studies and life histories. They managed to bring together these two diverse methodologies as well as integrating the new concept of spatial analysis in crime.

Shaw and MacKay (1942) identified the existence of delinquent subcultures, which adhere to a set of norms relative to that subculture. Shaw and McKay noted that the cultural heterogeneity and constant population movements in 'zones in transition' influenced delinquency through a process termed 'social disorganization'. They tried to decipher how the conventional value systems may not adhere to all the units within the same entity, mainly where there was a lack of structurally located social-bonds that encourage legitimate and discourage illegitimate behaviour. Where these norms break down, disorganisation occurs.

This social disorganisation process occurs mainly through the concentration of persons who are liable to offend in specific areas of a city or town with a high degree of illegitimate enterprises and immoral worlds (Finestone, 1976). In this situation, the structure of the locality starts to deteriorate due to incapacity of the traditional institutions to maintain control and solidarity. These institutions include the family, the church and the local community. Due to lack of common and non-delinquent values, the areas in question become hotspots for crime.

The central discoveries emanating from Shaw and McKay's research was based on three concepts (Finestone, 1976, p. 25):

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3   http://www.umsl.edu/~rkeel/200/culflic.html

- *rates of juvenile delinquency conformed to a regular spatial pattern, higher in the middle zones and tended to decline with distance from the centre of the city.*
- *the same spatial pattern was shown by many other indices of social problems in the city.*
- *the spatial pattern of rates of delinquency showed considerable long-term stability, even though the nationality makeup of the population in the inner-city areas changed from decade to decade.*

The theory of social disorganisation has had both attractors and detractors, the former due to its solidity in relation to the offender aspect of the theory, whilst detractors criticised the fact that crime may not only be a case of disorganisation, but may be a case of organisation (Whyte, 1943 in Bottoms and Wiles, 2001). An organisation may offer social capital[4] to its members but disrupt the social cohesion[5] of the area it operates in (Kawachi and Kennedy, 1999). As an example, one can take the case of the Mafia, which is a very organised structure both in the USA, China,

Albania, and Sicily and is emergent in countries such as Taiwan (Snodgrass, 1976; Wang, 1999).

Matza (1964) claimed that the social disorganisation theory is over-deterministic and over- predictive. There were few developments in this area of study following a peak in interest in the period between the two world wars.

From the Chicago School to revival research
Following on the work by Park and Burgess, and, Shaw and McKay, other researchers such as Tibbits, McKenzie, Anderson, Wirth, and Zorbaugh collectively developed the first large-scale theoretical approach to the study of the nature of crime and American urbanism, an approach that was spatial as well as sociological (Georges-Abeyie and Harries, 1980, p. 1). The developments over the decades lead to the development of crime pattern theory that looks at both the established and changing nature of crime. Crime patterns can only happen due to the constructs that make them, inclusive of the location they occur in, and the sociological and psychological relationships to space. Heal (2001, 268) states that the imposition of crime pattern analysis on recorded crime statistics helped researchers to make a leap towards understanding crime and space and well as fill in information gaps. He states that the early 1980s' work enabled the development of crime pattern analysis, however the main limitations were those imposed by small samples and observed pattern reliability and stability. This also included limited attempts

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4   Social Capital: "Those features of social organisation, such as networks, norms of reciprocity, and trust in others, that facilitate cooperation between citizens for mutual benefit" (Coleman, 1990; Putnam, 1993; Sampson, 1995)
5   Social Cohesion: the process describing "communities with high stocks of social capital and low social disorganisation" (Wilkinson, 1996; Kawachi and Kennedy, 1997; Sampson, Raudenbush and Earls, 1997)

to analyse crime patterns with socio-demographic data. Over the last decade these issues have been resolved or facilitated through the use of widely-available datasets and spatio-statistical software.

Other researchers covered different socio-economic/socio-cultural aspects. Schmid (1960) identified 6 types of hypothesis that could be used to account for patterns of crime. These were:

i) the "ecological segregation/contingent control" hypothesis where high frequencies of crime reflect opportunities, ii) the "drift" hypothesis - certain areas attract offenders, iii) the "differential association/cultural transmission" hypothesis - areas characterised by distinct sub- cultural patterns of delinquency and crime, iv) the "social alienation" hypothesis - areas characterised by social problems, v) the "anomie" hypothesis - delinquency is a disruption of the collective order, and v) the "illegitimate means/differential opportunities" hypothesis - differentials in access to illegitimate means.

Other sociological theories on delinquency areas are based on a threefold structure (Gill, 1977):

i) the "ecological approach" investigating why people live where they do, ii) the "sub-cultural approach" that analysis how localised and distinctive life styles exist, and iii) the "social reaction approach" that highlights how labels are given to individuals and areas.

 Practical problems exist where the question of the ecological fallacy arises[6]. This is the erroneous assumption that an overlap of problems at an area level (e.g. high levels of criminal victimization and high unemployment) also occurs at the level of the individual household (e.g. all victims of crime are unemployed). The relationship between victimization and unemployment can only be revealed through surveys that record the employment status of victims of crime.

Early environmental criminology studies suffered from this fallacy which assumed that *"the descriptive characteristics of areas having high proportions of offenders resident identified both areas where crime control programs should be undertaken, and the individuals who were likely to commit crimes"* (Brantingham *et al*, 1981, p. 17). Every area hosts non-delinquents though studies concentrate on the delinquents rather than the whole. An area hosting delinquent residents has a good chance of being stigmatised and labelled. Mays (1963) argues that whilst there would still be significant numbers of persons who would not be offenders, but there are sufficient numbers who are criminal, then that area as a whole could be termed as "delinquency producing". Where crime rates are high, potential offenders realise that foregoing an opportunity means that someone else will take it whilst the fact that they act may make them heroes in their community as a sort of badge of

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6   In Malta, an Ecological Fallacy would serve such statements as stating that Libyans commit more crime as they reside in a small area in Bugibba when in fact an analysis of individual basis (eg crime rate per 100,000 for Libyans as against for Maltese) may show otherwise.

honour (Schrag *et al*, 1997). Some offenders anticipate arrest even if they do not commit a crime, thus the incentive is doubly attractive, further stigmatising an area.

Dunn (1980) looks at the association of land use with offence occurrence and offender residence areas, in line with Shaw's (1929) study of delinquency areas. He states that "crime… consists of a complex set of transactions of individuals with their environments … which vary in setting, time, objects, participants and activities" (Dunn, 1980). He identifies four ways to look at in the study of crime and land use: i) offence location crime in urban places, ii) areas with commercial activity and high-density residential development in poor condition, iii) quality of residential land use (substandard housing), and iv) land uses related to specific offences, due to different targets reflecting the area function or structure.

McLaughlin *et al* (2001, p. 133) identified four new spatial approaches to the topic: i) mainly the spatial distribution of crime, ii) risk of crime victimisation in space, iii) spatialised fear of crime and iv) particular crime flows from one area to another.

Gidden's theory of Structuration (Giddens, 1984) has again brought to the fore the agenda that sociological studies must be based on the analysis of 'social practices ordered across space and time', which theory reflects the take-off point of the Chicagoan School. Bottoms and Wiles (1997) have taken up the concepts of space and time as the major point of departure for environmental criminology studies, stating that Giddens' concept is central to its theoretical base. They bring as evidence his explanations on humans as knowledgeable agents, practical consciousness, his move away from the traditional dualism of objectivism and subjectivism, the duality of structures as both motivators and constraining agents, as well as the importance of routine activity. Structures result in a practical consciousness that is able to follow regular patterns in space and time. One needs to understand how place, over time, is part of the practical consciousness of social actors who engage in behaviour, including actions defined as criminal (Bottoms and Wiles, 2001, p. 19). This construct is being investigated in terms of the next spatial level, that of virtual environments and online worlds (Toet and van Schaik, 2012).

Pivots of crime

The offender residence perspective allows researchers to analyse patterns in residence preference, areas that are more attractive to offenders based on their particular norms and values. An analysis of the diverse social variables would describe the activities that offenders partake in at individual, co-familial and community-career levels.

Following the relative superiority of Shaw and McKay's theory, there was a lull of fifty years in spatio-temporal crime analysis until the 1970s when a revival of interest occurred from another aspect: offence distribution. Shaw and McKay's work had concentrated on

offenders and their life-histories as well as the relationship of their offences to the place[7] they reside in.

The refocusing of the theory indicated that there is a difference between offender residence and offence locations. Offenders aggregate in specific residential areas for social, economic and cultural reasons. Squatting possibilities, vacant housing in stigmatised areas, little financial clout to move to better areas are but a few examples. On the other hand, offence areas posit other scenarios. They could be either the same areas of residence, areas in the vicinity of the offender's day-to-day activities, areas of recreation and well as opportunity-presenting areas.

The 1970s research introduced studies on 'defensible space' (Newman, 1973) and on the constitution of crime: mainly the law, offender, target and place of crime (Brantingham *et al*, 1981). However, they were criticized as they left out the basic tenet of Shaw and McKay's effort: the offender's residence. This said, they do state that movements bring offenders and their targets together (Bottoms and Wiles, 1997).

Shaw and McKay's theory of concentric ring zonal distribution of crime was challenged both outside the USA and in Chicago itself after World War II (Taub, Taylor and Dunham, (1984) in Bottoms and Wiles, 1997:331; Bursik (1986) in Bottoms and Wiles, 1997:331). The 'old areal regularities broke down' and the 'theory of concentric rings was discarded together with the formulation of urban process that went with it' (Bottoms and Wiles, 1997, p. 331). One has to note however, that Shaw and McKay's theory of Social Disorganisation is still supported.

The new surge of research in the 1980s and 1990s identified a number of issues that showed variations from the classical circular concentric zone theory. These variations may have been due to the fact that European urban areas such as Croydon in London (Morris, 1957 in Bottoms and Wiles, 1997, p. 312) and Sheffield (Baldwin and Bottoms, 1976 in Bottoms and Wiles, 1997, p. 312) were built for different purposes, with the higher status areas concentrated around the city-centre and in other formations that do not conform to the Chicagoan model where the centre was industrialised.

Generally the contrast is between cities such as Paris and Glasgow that have disadvantaged areas on their periphery and those that confirm to the Anglo-American pattern (e.g. London, Chicago, and Los Angeles) where deprivation is in the inner cities and affluence is in the suburbs. Interestingly Malta exhibits an inner-city deprivation due to an out-migration from the cores and the depopulation of the same areas which resulted in deterioration and dilapidation (Formosa, 2007).

Recent studies have focused on the housing market and came up with an analysis of the direct and indirect consequences of the operation of the market on crime. A study in

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7   Sociological concept of place: the social organisation of behaviour at a geographical place (Bottoms and
     Wiles, 2001)

Sheffield in the late 1960s (Rex and Moore, 1967) launched a series of studies in the field that brought up new concerns on how the modern industrial situation affects the crime patterns in both rust-belt and sunrise cities (Craglia *et al, 2000*). Industry is becoming dispersed and less zonal and is challenging the concentric-ring theory (Harries and Lewis, 1998), especially where the dispersion could be effective in reducing crime (Wang, 1999). Studies are needed in the latter to identify if dispersing industry actually results in reducing crime or else in dispersing it over a wider area.

Harris *et al* (1998, p. 623) state that the zonal model had two major faults. One was that the divisions were based on the social, political and economic fault zone between the city and suburbs. The other fault was that the zonal model misrepresented Burgess's model and the cities and suburbs of his day. Hoyt (1939 cf Harries *et al*, 1998) indicated that single family units lived in the periphery and in the suburbs, whether the latter were industrial or residential. They did this based on their consumption patterns (Douglass, 1925 cf Harries *et al*, 1998).

Another input to the theory looked at the housing market which is intrinsically linked to offender rates. As dwellings are occupied according to the residents' income, households of similar status tend to group together. Higher status groups tend to segregate themselves into small close-knit areas and try to keep other categories from moving in, whilst lower status groups tend to be dispersed (Ladanyi, 2001). In his 1979 group status analysis of prisoners in Budapest, Ladanyi identified that inequality changes with time and new forms of crime manifest themselves to reflect structural changes. In this study, areas zoned for agriculture and industry showed high offender rates as against the highest status parts of the city exhibiting very low proportions of detected and convicted offenders.

The higher-status segregation makes it is difficult to separate social class from area of residence (Pain, 1997). This is also marked where the middle class is conscious of being suburban and aggregates around the city periphery (Singleton, 1973). Where middle class values start to decline, a high incidence of delinquency and crime in urban settings is linked to the loss of social buffers (Kawachi *et al*, 1999). Schnore (1963 in Harris *et al*, 1998) claimed that income, education and occupational standing increased in proportion to distance from the urban conglomeration, moving out from inner poverty city centres to outer affluence (Jackson, 1985). An increase in delinquency is found in the population of low-income earners, the elderly and poorly educated people demanding additional social services (Goldfield and Brownell, 1979 IN Harries *et al*, 1998; Mahatmya and Lohman, 2011).

Offenders and Offences

Offender Rates: An Analysis
The offender analysis looks at the crimes committed by an offender based on his/her location of residence and role in crime. Whilst crime analysis concentrated on community studies between the 1920s and 1940s through work carried out in Chicago by Shaw and McKay, the emphasis slowly changed to an analysis of individual behaviour. This has been recently revived by looking out for the "criminal careers" of communities that could enhance the understanding of crime and its causes (Reiss, 1986). Just as one describes individual offender crime careers, Reiss (1986) argues that one could extend this concept to the communities that experience changes, through analytic studies of both offender rates and offence rates (Schuerman and Kobrin, 1986; Bottoms and Wiles, 1986, 1992; Bottoms, Claytor and Wiles, 1992).

Residential Issues and Offenders
The local housing market came into focus through such work as Rex and Moore's (1967) Sheffield study where they analysed housing patterns through a Census Enumeration District analysis. The results showed that there was a correlation of housing type with offender rates (Baldwin and Bottoms, 1976). Major variations occurred within the areas with a predominant housing type, which was further analysed to reveal that it is different from the Chicago study; there was no relationship between the rate of tenant turnover on estates and offender rates (Baldwin and Bottoms, 1976). This study and another conducted by Wikstrom in 1990 in Stockholm (Wikstrom, 1990) indicated that the studies went beyond a simple social-class analysis since they included such external elements as landuse. Wikstrom's Stockholm path-model approach hypothesised that housing tenure variables would feed through to population composition variables: in effect half the area offender rates variation in several districts was explained by housing type and social composition. This created a further inroad into the study of offenders and the locality they reside in[8].

Schuerman and Kobrin (1986) looked at the physical makeup of the locality and the shifts in land-use, particularly the housing sector, as well as demographic changes, mainly in household and absolute population structure. They argue that even small changes in land-use can bring about a change in population structures, implying that an increase or

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8   This situation can be tackled in a number of ways. One study carried out in Public Housing Authorities in the USA (Hyatt et al, 1999, p. 18) looked at the housing setup within the authorities' jurisdictions and carried out concentric ring analysis based on a series of six 50m interval buffer zones. They introduced a new factor called blockface analysis where crimes occurring in areas facing the authority boundaries are also analysed. The theory assumes that crime does not stop abruptly around these housing areas but continues further away from the immediate boundary area.

decrease in the real-estate purchases or renting could change the framework of operation in a spatial area. The same changes reflect who enters or exits the locality and in turn changes the offender/offence relationships related to that area. An increasingly degraded area would result in a reduction of rents and an influx of low-income earners effectively changing the make-up of that community (Ellul, 2003).

A classic example assessing the different types of dwelling zones was based on the analysis of two towns for three categories of housing: low-rise council, high rise-council, and privately rented areas. The classic study was the "Stonewall and Gardenia" housing estates in Sheffield case study (low-rise council) where Gardenia had 'tipped' in the 1940s. Once 'tipped' it continued to attract categories of persons who were prone to offending due to the allocation of homes to such persons. There were also indications that the negative reputation of this town created an effect on its residents, schools and networks. Stonewall did not go through the same changes and retained its crime-free structure (Bottoms, Mawby and Xanthos, 1989). Similar studies by Harries (2006) in Baltimore investigated steep crime gradients that characterize the physical and social circumstances under which they occur.

Neighbourhoods 'tip' towards crime through a process described by the 'broken windows hypothesis' where a locality's crime status deteriorates over time (Wilson and Kelling, 1982). The components keeping an area together include the offender's role, power with respect to crime by others, and the extent of the criminalisable space (Van der Wurff, Van Staalduinen and Stringer, 1989, p. 144-145). The rate of change of signs of disorder (broken windows, housing abandonment, litter and graffiti) is relative to the process where the community loses control. Once the community abandons control, vandalism occurs and an unintended invitation is given to persons involved in the crime trade to move in. Skogan (1986, 1990) investigated this decay and called it the 'spiral of decay in American Neighbourhoods', where the physical (abandoned or ill-kept buildings, etc) and social constructs (public drinking, prostitution, etc) are strongly correlated.

The fear of offenders leads to a vicious cycle until no investment in social capital occurs through withdrawal from community life, out-migration, loss of jobs, loss of networks, fewer opportunities for network and social organisations and exit of businesses (Figure 1.4) (Kawachi *et al,* 1999; Farrall, Bannister, Ditton and Gilchrist, 2000). This effectively results in a perpetuating situation of decay and where such areas remain disorganised for long decades.

Figure 1.4: Kawachi et al's description of the Social Capital Disinvestment
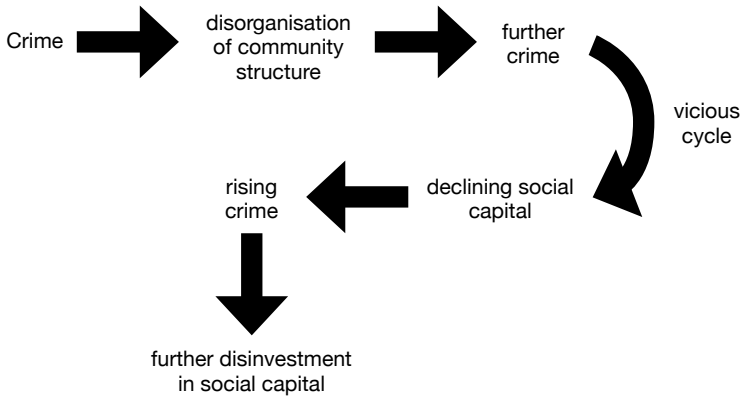
Source: Adapted from Kawachi et al, 1999, pg 727

Offence Rates: an analysis

Offence-location research provides valuable data on the patterns of crime by type, time, and location but also poses a problem of relationship. How does one equate the issue of offences with the area in question as well as the offender committing the crime?

There are various issues at stake in offence analysis, particularly due to its complex structure of what classifies an area as a crime attractor or crime generator. Offences occur due to the intrinsic relationships between the offender and the offence: is it a crime of chance or a crime of choice? Does an offender choose to carry out an offence in an area because of its affluence (such as a villa area) or because of its inherent social structure such as that where there is no social cohesion and social capital? Crime attractors offer high-level visual, psychological and sociological imperatives to offenders to commit crime therein such as opportunities provided by sparsely-populated residential areas. On the other hand crime-generators may be a result of land-use designation such as in recreational areas that provide easy-target opportunities such as vehicles, highly-dense patron-packed bars. Irrespective of the type of crime-function, the offender has a role to play, mainly due to his/her modus operandi and the relationship to the crime target, whether kick-started through routine activity, or specific target hot-spotting.

In order to identify specific issues that help offenders to operate within the attractor-generators pivot, in-depth studies are required such as those reviewed in Stockholm by Wikstrom (1990) and in Germany by Entorf *et al* (2000).

Per-Olaf Wikstrom in a study of offences in Stockholm in 1991 (Wikstrom, 1990), considered the fact that the measurement of areal offence rates poses quite a problem due

to the use of resident population as a denominator (Harries, 1981). Stating that crime in a historic town is related to the number of its residents is erroneous especially where most crime results from theft of for example cars in car-parks reserved for tourists visiting that area.

Wikstrom (1990) was building on a study in Sheffield where crime in traditional cities tends to concentrate around the centre of the city, particularly for violence in public, vandalism in public, and theft of and from cars. Bottoms and Wiles (2001) stress that though this is the case in most cities; one has to keep an open mind that changes in land-use could bring about changes in the distribution of these offences, also outlined by Kurtz (2008). More recent studies show that even thematic landuses such as vegetation cover effect changes in crime, where Wolfe and Mennis (2012) found that vegetation abundance in an urban space is significantly associated with lower rates of assault, robbery, and burglary, but not theft. Another study by Troy, Grove and O'Neil-Dunne (2012) found that this relationship in Baltimore is higher in public than in private lands. Through his study Wikstrom showed that residential burglaries tend to occur in areas of high socio-economic status, especially those that are nearby to areas with high offender rates. He indicated that there are specific geographical skews in the patterning of offence locations and that these can vary significantly by type of offence.

High income was found to be positively correlated to crime rates in Germany, indicating that richer persons are better targets (Entorf *et al*, 2000). This is due to the higher incentives that persons living in disadvantaged areas have (Kosbela and Viren, 1997). The higher the income inequality the worse the legal income opportunities become and in turn better illegal income opportunities are sought.

Can one be studied to the exclusion of the other?
The last two decades of the twentieth century brought the offender and offence-based theories together. Though both can be studied in isolation, the main progress being carried out by contemporary criminology is the study of this relationship.

Such a process of understanding both offender and offence relationships can be strengthened through a review of the related theories of Structuration, Opportunity and Routine Activity.

4. Related Theories

Structuration Theory
There are various theories of crime that have attempted to call themselves general theories of crime. Few have managed to integrate the issues of crime with the issue of space. For example those of Braithwaite (1989) and Gottfredson and Hirschi (1990) rarely cover the

issue of spatiality, concentrating on issues such as social control (cf Bottoms and Wiles, 2001 IN Evans, Fyfe Nicholas and Herbert, 2001, p. 12). One of the closest approaches to an integrated approach to Environmental Criminology is Structuration Theory proposed by Giddens. It is also a popular debating issue between human geographers and social theorists (Gregory and Urry, 1985).

Environmental criminology studies have not always looked at the collective study of offence and offender rates. Each has been researched to the exclusion of the other. The Chicago School concentrated on offender studies whilst others (Newman, 1972) have focused on offences. Giddens went beyond the classic theories as posited by the founding fathers of sociology and argued that these two tenets cannot be and must not be studied in isolation, rather they have to be considered as inseparable (Giddens, 1984, p. 2). For him societal change can only occur as 'social practices ordered across space and time' which evolve through the activities of human beings as knowledgeable agents acting in the context of social life. He also looks at structures and how they exist within, constrain and enable social actions as well as the issues of routine activity, social change and social processes. Brown, Esbensen and Geis (2010) explain such activities through their five ¬paradigms: free will or rational choice, positivism, ¬interactionism, the critical ¬perspective, and integration.

Giddens based his analysis of the routinised character of daily-life space-time on Hagerstrand's concept of time-geography (Giddens, 1984, p. 111). Hagerstrand had analysed movements of individuals in a local parish in Sweden over their lifespan and composed time-space analysis through charting their movements. The issue deriving from these movements indicate that there may be patterns to the way people conduct their lives and this includes offenders in their relationship to the offence location. Carlstein (Giddens, 1984, p. 116) indicated that these 'ecological constraints' derive from specific modes of 'packing', mainly the packing in small areas of materials, artefacts, organisms, and human population in settlement time-space, and their activities in the related space. This results in a 'clustering of institutions' across time and space, giving rise to offender locations that may not be desirable to reside in and offence locations that are attractive to offend in (Giddens, 1984, p. 164).

Structuration theory in effect offers an understanding of the ongoing processes of interaction between the elements making up a crime. Any model of crime analysis should look at these in an understanding of the spatial aspects of offending and offences and their relationship.

Opportunity theory and Routines Activity Theory
Offenders commit crime for a variety of reasons, varying from the need to survive to taking advantage of opportunities that present themselves. Two theories that investigate

these reasons are Opportunity Theory (Bursik and Grasmick, 1993; Felson and Clark, 1998), and Routine Activities Theory (Cohen and Felson, 1979; Ekblom, 2001; Van Daele and Vander Beken, 2011). Each fits in with environmental criminology theory in that the fundamental issue at stake is space: where does an opportunity present itself and how does one get to make use of an opportunity and act accordingly, if not through the familiarity of the spaces inherent in his/her cognitive mindmap?

A mindmap study of a Maltese Village rendered Figure 1.5 as a guide to one's cognitive map of a zone in terms of opportunities offered and routines monitored. Moving from conceptualization of one's mental image to an entitation of the surrounding landscape required the translation of that abstract concept into a solid construct such as a rough sketch, an image or a 3D model. Figure 1.5 depicts how the author viewed the diverse building blocks that make up the village mosaic both structurally, socially and criminologic. The image, though complex, shows two easily readable keys (legends), the left describing the background colours pertaining to the map and identifies all those landuse areas such as the green zones depicted open areas or gardens. The bottom legend depicts those social and crime-related activities that are

Figure 1.5: Spine: One's Maltese village cognitive map
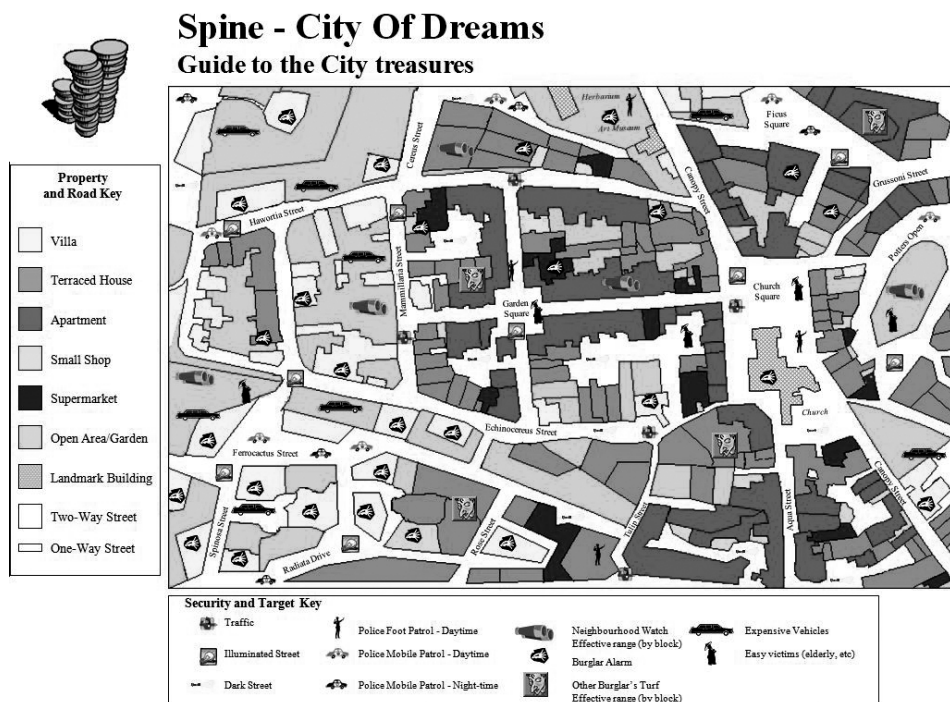
of interest to the researcher for safety and security as seen from an offender's point of view; the elderly lady, the expensive vehicles, the burglar alarms, police presence and other many constructs so importation to the cognition of one's surroundings.

Opportunity Theory looks at crime from the point of view of the offender: the opportunity to carry out an offence and; the level of target attractiveness of the area. Such issues posit fundamental questions, especially in determining what a researcher must look for in determining attractors. When does a car become enough of an attraction to steal and for what purpose?

An offender looking for a car for 'mere use'[9] may not be attracted by a specific make of car, but a car thief looking for a lucrative catch may visit areas of high affluence.

Another aspect that makes an area attractive relates to the accessibility of the location. The accessibility issue leans on four parameters; visibility, ease of physical access, the absence of adequate surveillance and, the modus operandi of the target. Areas within easy reach of transport routes would pose a hazard for residents due to the opportunity offered (Mayhew, Clarke, Sturman and Hough, 1976). Brantingham and Brantingham (1984) further argue that all individuals carry in them a cognitive map of the city and engage in search patterns to identify areas of interest. Bottomley *et al* (1986) state that it is difficult to decipher whether the increase in the number of crimes is due to the form of increased opportunities such as the car or a decline in respect for property.

Accessibility becomes an issue due to the offender's knowledge of both the real physical and cognitive space (Beavon, Brantingham and Brantingham, 1994). Potential offenders will not offend in previously unknown areas but where criminal opportunities intersect with their cognitively known areas (Bottoms and Wiles, 1997, p. 324). Rengert (1980, p. 21) adds that 'the relative magnitude of an opportunity is proportional to its relative degree of accessibility which will partially determine its probability of being exploited'. This indicates that even though an area may be affluent or has commercial aspects that could prove lucrative to a potential offender; its accessibility plays a major part in the commissioning of an offence. Also, a high-attraction area (such as a secluded villa area) that has few visible people tends to suffer more crime since there would be fewer witnesses (Jacobs, 1961; Van Daele and Vander Beken, 2011).

Newman (1972) argued that the solution to this situation would be the creation of territorial subdivision, whether conscious or unconscious, to identify outsiders. This occurs where residences along less accessible streets are not familiar to non-resident criminals and so will experience less burglary episodes (Bevis and Nutter, 1977).

Further developing this area of research within the domain of situational crime prevention, Felson and Clarke (1998, p. 9) posited their ten 'principles of crime opportunity theory' which outline those issues that can be considered as the 'root causes of crime' as

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9   Such as joy-riding

well as leading towards reduction measures:
1. Opportunities play a role in causing all crime
2. Crime opportunities are highly specific
3. Crime opportunities are concentrated in time and space
4. Crime opportunities depend on everyday movements
5. One crime produces opportunities for another
6. Some products offer more tempting crime opportunities
7. Social and technological changes produce new crime opportunities
8. Opportunities for crime can be reduced
9. Reducing opportunities does not usually displace crime
10. Focused opportunity reduction can produce wider declines in crime

Opportunity Theory has its own sister theory entitled Routine Activities Theory which looks at the day-to-day activities of victims and offenders in relation to the location and timing of offences. Crime is closely related to the offenders' activities as well as the activities of potential victims. New opportunities offer themselves, such as attacks on the elderly. Perceived high standards of living produce an opportunity to those who normally act around a few spatial locations either as part of their day-to-day activities such as a work transport route. The mere fact that an action is a routine activity implies that there is an element of social activity – there is an interaction that is being portrayed (Cohen and Felson, 1979). Furthering this concept, Felson and Clarke (1998) highlight the fact that there is a veritable target (as preferred over victim's) role in creating opportunity through their VIVA model (value, inertia, visibility and access).

These routine daily activities fit into the framework set up by Giddens in his theory of Structuration, due to the fact that the social action being interpreted needs a human being who relates repeatedly to a social structure in a particular place (Giddens, 1984, p. 110). His concept of 'locale' looks at a wider aspect than just place, integrating the interactions occurring therein. An analysis of crime in particular areas (by type of crime and activity in that area, for example retail) may bring up specific time-periods when offences occur. "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' (Cohen and Felson, 1979).

Such a description helps to counter the preoccupation that studies such as the Minneapolis study conducted by Sherman, Gartin and Buerger (1989) queried when they posited that 'places cause crime' as they are criminogenic generators of crime. This is different to the concept that places host crime (serving as attractive receptors of crime) due to the interaction of a routine activity by a potential offender and that same place. The fact that persons go to have a 'good time' in recreational places does not mean that

the area creates a potential murder, since the interactions of the offender and victim could have occurred anywhere (Karlsson, 1998).

Wikstrom's approach is a combination of opportunity and routine activity theory where he introduced the concept of time-crime. He states that the inner-urban activities fluctuate over time and space to the extent that different times of the day experience different activity types and frequencies as reflected in Figure 1.6 (Wikstrom, 1990, p. 23).

Figure 1.6: Wikstrom's model of variations in and types of crime in the urban environment
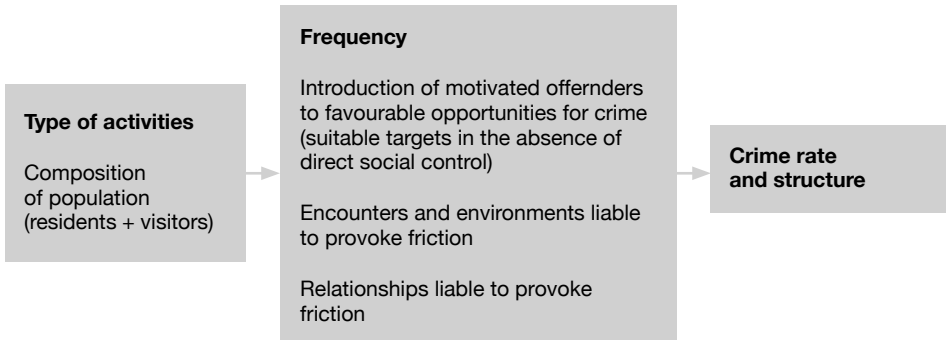
Source: Wikstrom, 1990: 24 IN Bottoms and Wiles, 1997:328

Each of these components can only be studied by understanding the localities they occur in: the physical structure and the prevailing social issues that term an activity as a crime.

When reviewing the various pivots of crime from either an opportunity or routine viewpoint together with the social structure it occurs in, Ekblom's (2001) Conjunction of Criminal Opportunity theory provides a unified approach towards what is eventually the main aim of criminological research: prevention and reduction of crime as well as promoting to the fore community safety (Figure 1.7). Its target is the identification of all the issues that occur at a specific point in time which make criminal occurrence happen. This leads to action on assessing risk of crime (prevention), actively aiming to reduce (number and seriousness) as well as enhancing social activities through quality of life and improved state of existence.

In effect, Ekblom outlines a strategy that ropes in the main tenets of opportunity theory, routine activity theory as well as Structuration aimed at developing preventive strategies that have an impact on the ground through such actions as that outlined in his CLAMED model. The latter model takes on the role of task **Clarification**, preventive agent **Locating**

hence **Alerting** them to the crime problem whilst **Motivating** them to take on the crime reduction task, at the same time **Empowering** and **Directing** them to take on capacity issues and to follow guidelines, select targets or implement particular activities.

The latest update to the implementation of the theory is the 5Is[10] initiative (Intelligence, Intervention, Implementation, Involvement (of the community) and Impact).

Figure 1.7: Ekblom's Problem Space: A Map of Symptoms and Crime Reduction Objectives
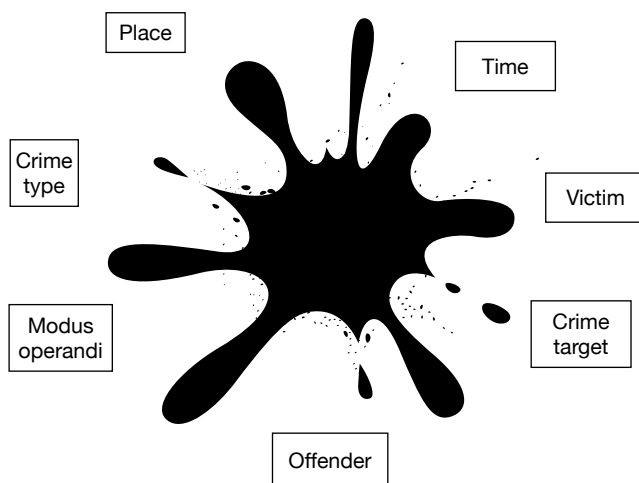
Source: Ekblom (2001), pg 20

In conclusion, the review of the main theories that have promoted environmental criminology to its current status has shown that in its ultimate stage, crime can be analysed in its spatio-temporal constructs and based on the findings strategies can be implemented to impact and reduce crime occurrences.

Physical and Social issues
Environmental criminology research with its related theories and components as described above would be bare without a review of two main related components: land use and social issues. Each places an impact into the analysis of what constitutes the environment and how crime interacts with each.

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10   http://www.designagainstcrime.com/files/crimeframeworks/04_5i_framework.pdf

Land-use component

The relationship of crime and landuse has been recognised since the thirteenth (13th) Century when Edward I tried to control crime by introducing the Statute of Winchester in 1285. This Statute covered instructions on the communities' obligations with regard to possession of weapons and to maintenance of the King's peace (Summerson, 1992). UK street widening in the nineteenth century lead to the dispersion of concentrated criminal elements (Beavon *et al*, 1994). In more recent post-war times, urban development was based on the automobile and mass transportation that led to changes in opportunities for crime due to the concentration of people in specific areas. As an example, arresting an offender committing snatch and grabs in the vicinity of subway exit-points would be very difficult to conclude as it provides a number of escape routes (Brantingham *et al*, 1984).

Urban planning and the subsequent impact on crime were brought to focus in the quest for 'livable streets' (Appleyard, 1981). Like the theory of social disorganisation before it, the analysis of street systems and their associated land-uses was shelved for over half a century but new studies have indicated that street development concentrates on increasing the carrying capacity but neglect the social and environmental costs (Appleyard and Lintell, 1972). In the urban world, streets and roads play a major role since their setup constrains flow and accessibility to offenders in their routine activities whilst inducing an opportune environment for offending.

Urban planning clusters offence targets in specific areas, through increasing or reducing accessibility for opportunities. As against opportunities in rural areas where a person is more conspicuous, urban areas become attractive to offenders especially where an area becomes prosperous (Entorf *et al*, 2000).

Zoning practice and urban design has been found to alter crime patterns due to the presence of high volume land, accessibility, design, private and public spaces, and a host of other causes (Beavon *et al*, 1994; Pain, 1997). CPTED (Crime prevention through environmental design) has had a major impetus towards the mitigation of crime in urban spaces (Cozens, 2002; Marzbalia, Abdullaha, Razakb and Tilaki, 2012; Sakip, Johari and Salleh, 2012; Fennelly and Crowe, 2013).

Social component

Socio-economic studies and its major component, deprivation, play an important part in understanding social structures and their relationship to studies in crime. Deprivation has evolved from the study of poverty to a wider 'contextually dependent' concept with the inclusion of issues as accessibility, isolation and peripherality. The use of spatial analysis in GIS to measure poverty takes on a significant role as it brings the traditional 'poverty' studies in relation to offence location by showing the mechanisms each operates in: what is the background of an offender and where does he/she prey?

Deprivation comes in two forms: absolute or relative. Absolute deprivation refers to the unavailability of resources to meet the basic needs for healthy living and is the result of various factors particularly unemployment, lack of housing and schooling as identified by the UN Human Development Index, which indicate a 'weakening social fabric' and in turn a deteriorating social cohesion. There is little evidence to suggest that absolute deprivation is an automatic precursor for crime as against relative deprivation that may in 'certain conditions lead to crime' (Young, 1997, p. 488; Lea and Young IN Muncie, McLaughlin and Langan, 2000).

Relative deprivation is the result of poverty where some citizens have significantly less access to income and wealth than others in their society. Crime is most prevalent in societies with these disparities, even in areas where absolute poverty is non-existent (Kawachi *et al*, 1999). Such societies move away from integrative social norms and in turn resort to an *anomie* situation (Merton, 1968).

Left realist criminology[11] asserts that the realisation that social 'goods' are within physical reach but grossly out-of–reach from acquisition by relatively-poor persons may in effect cause crime. Relative poverty and deprivation from 'goods' may lead these persons to attempt to make up for this perceived lack by 'acquiring' the 'goods' illegally.

Relationship of social issues and landuse to crime
Kawachi *et al* (1999), use crime as an indicator of collective social well-being both in the social and health aspects, by analysing the degree of relative deprivation and the degree of cohesion in a society. The former looks at income inequality and the latter looks at the social relationship/social capital in that society, a factor also identified in The Netherlands (Akçomak and ter Weel, 2012). They state that crime is a mirror of the quality of the social environment and use state-level ecologic data to analyse deprivation.

Variables for analysis
Diverse variables are used to analyse crime and deprivation. The main one, unemployment, indicates a direct causality to crime particularly when the economy falls into recession and crime rates increase (Eitzen and Zinn, 1988, p. 431). US federal prison population in the US tends to increase fifteen months after periods of high unemployment (Keebler, 1975). In another study, Craglia *et al* (2000) based their Sheffield studies on the analysis of households and unemployment, through the use of Townsend Index (Townsend, Phillimore and Beattie, 1988), pointing out that crime statistics need to be based on young-male unemployment, population turnover and the DETR index of local conditions. Wang (1999) found associations between unemployment and crime with the link being stronger

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11   "Left Realism emerged in the early 1980s in Britain as a response to both the punitive and exclusion policies of conservatism and to the utopianism of New Left radical criminologies" (McLaughlin et al, 2001, 163)

with structural unemployment.

Other researchers base their analysis on economic factors. Entorf *et al* (2000) use GDP and relative distance to average income. They include the % of population on welfare, the % of population below the poverty line and the Gini Coefficient as reliable variables for within-state studies of crime. One interesting point that they bring up is that offenders rate themselves in relation to national income rather than that of their own areas.

Other variables also employed include population density (especially in small island states), education advancement, high school dropout rate (Shaw-Taylor, 1998, 317) and per capita GNP (Wang, 1999). These factors highlight the importance of social cohesion since a high population density can induce a reduction of social capital due to the indifference attributed to knowledge of who one's neighbours are, and very little incentive to develop viable relationships. Interestingly, whilst school dropout is identified by Shaw-Taylor (1998), Rutter, Maughan, Mortimore and Ouston (1979) identified that at the other extreme school intake is just one factor that causes delinquency (where the best students are chosen by the best schools and low-achieving non-academically inclined students are then grouped together in low-achieving and inadequate schools). They found that delinquency is not directly linked to school activities but to offending outside school. Though this area requires further research, it is assumed that high school dropout rates may lead to more time to engage in activities where there is no adult supervision and could lead to offending.

Kawachi *et al* (1999) includes single parent households as a factor in crime analysis stressing that this family structure reduces control and supervision of potential offenders, again resulting in reduced cohesion and lack of role models. They also include educational attainment and average alcohol consumption levels in their analysis. They found that as the socio-economic status increased, homicide and assault rate declined but larceny increased. In addition, where poverty and unemployment increased homicides increased. One interesting factor was that median income was positively associated to robbery rates and motor vehicle theft. Alcohol was not found to correlate to violent and property crime. Wong (2012), in turn employs an adaptation of Shaw and McKay's theory, where he examined the effects of social disorganization and family disruption on youth crime.

Urban planning also plays a part in the dynamics of the interactions of offenders and offences, affluence and deprivation. Once an area has been zoned either as recreational or has 'tipped' following the deterioration of its demographic stock, urban issues have an impact on crime structures and vice-versa. As an example, out-migration can be linked to changes in the economic scenario such as the loss of jobs from a de-industrialised city. Taub et al (1984, p. 347) identified three issues for area deterioration analysis: i) crime levels are an issue in judging the quality of an area, ii) there is evidence of a 'threshold model' where people move out of an area until tipping occurs, which few can stop, and iii)

neighbourhood change is based on ecological facts[12], individual and corporate decisions.

In summary, these factors bring into focus the need to identify the causal factors that result in the creation of a realistic evaluation of the crime, social and urban relationships. How does each variable lead to the commission of a crime? Which activities attract the highest crime rates? This issue is best tackled through the identification of the context within which an urban activity has been implemented.

6. Ending Note

The chapter described the development of the theory of environmental criminology and how it fits within other related theories such as Structuration, Opportunity and Routine Activity theories. It described crime in relation to the offender and offence location and identified how these different aspects of the theory fit together to form a comprehensive background for the analysis of crime.

Whilst the study aims to analyse crime in it spatio-temporal aspect based on an analysis of location of where offenders live and where they commit crime, the theories mentioned above point at the need to move one step beyond the geographical aspect and analyse criminal activity in relation to the structures of the areas the offenders live in, interact and commit crime.

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12   Ecological facts include an employment base for neighbourhood residents, housing market and demographic pressures, age and quality of the housing stock and external amenities such as vistas.

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