2.1. Environmental Correlates Of Crime:

Ecological researchers interested in exploring causal relations of crime with environmental variables have observed that opportunities to commit crimes vary from neighbourhood to neighbourhood. Areas where offenders reside are not likely to be areas where the highest number of crimes occur. Central business places of urban localities are found to carry the risk of property crimes, mainly; while urban or suburbs populated by disorganised community lives are the preferred dwelling places of the antisocials linked with common cognisable crimes. Risk group for specific crime varies significantly. Density of population is not a factor to stimulate high crime rates while for certain crimes, against person, low density of population or sparsely populated area seems commonly linked. 

Doer-victim pairs could be used as the base for criminal homicide and aggravated assaults - the greater the number of pairs of persons, the greater the opportunities. The number of occupied housing units could be used as the base for residential burglar rates. The above inferences reported between 1920-1960 through the findings of U.S.A. and U.K. social geographers practically helped to prepare the base for encouraging further researches on the environmental correlates of crime.

In general, crime rates are highest in the most urbanised regions and lowest in the rural areas of hilly regions of a country. Most of the researchers have agreed on the point that crime rate increases with city size along with the size
of an urbanised area - which indicates that crime may be a consequential incident of urbanisation (Harries, 1971; Davidson, 1980) - possibly due to stress and conflicts in highly densed localities. Besides, Harries (1974) observed that the cities with a high crime rate tend to have (i) larger population; (ii) fewer jobs in manufacturing; (iii) higher per capita incomes; (iv) greater social disorganisations; (v) higher rates of population change; (vi) more unemployment; and (vii) larger black population. Harries (1974) grouped them as opportunity factor to cause different violent factors (crimes). Findings, published so far, suggest that variations in the incidences of crime remain more open to 'within cities' influences than 'between cities'. Central areas of some cities are found to carry more risk than others. In probing the relationships between Offenders and Victims in 17 cities of the U.S., Mulvihiill and Tumin (1969) observed that in 82% cases of robbery, 53% of rape cases, 31% of aggravated assaults and 17% of criminal homicides were committed by strangers i.e. absence of doer-victim relationships. Presence of some kind of doer-victim relationships was found present in case of criminal homicide (37%), aggravated assaults (31%), forcible rape (36%), and robbery (11%) only. According to them, about 46% of violent crimes in those cities were committed by strangers, 27% by friends or acquaintances, and 11% only by family members. Highest percentages of criminal homicides (25%), approximately, were done by family members while for forcible rape 36% friends or acquaintances were the 'doers'. Criminal Statistics of England and Wales 1976, Table 8.4 presented a different picture where family members and acquainted persons were found around 40% linked with violent crimes.

"Murder in Britain is slowly becoming a more impersonal crime" (Home Office, 1980, Table 10.3). According to Lambert (1970), where no police action was taken
to prevent situational disputes, in Birmingham there distinct geographical patterns of crimes appeared in between sophisticated part of the city and older areas of the city. "Murders are localised more in proximity to the suspect's residence, if not actually there: 66% of murders in Akron, Ohio took place in the same census tract as lived arrested suspects" (Pyle, 1976). There are distinct micro-locational attributes with murder cases and impersonal street crimes in North America (FBI Uniform Crime Reports, 1978).

According to Amir (1971), rape, despite micro-locational similarities to murder, is more alike assault in its environmental correlates, being associated most closely with poorer inner-city areas. In Philadelphia data, Amir (1971) observed that the incidence of rape rises more rapidly with city size than robbery and assault.

Robbery of employees' salary on the pay-day is high in city centres and localities with industries in the suburban areas. Mugging, where robbing of individual property is the only aim of victimisation, is found high in residential districts and localities and under opportuned moments - particularly when the question of 'interference' is remote and 'vigilance' is poor. Here, at the micro-scale three locational factors are important (Conklin, 1975), viz., (i) a street leading off a main thoroughfare or shopping centre; (ii) good opportunities for concealment of the doer before victimisation and (iii) good opportunities for escape through alleyways, buildings, slums, dumping ground etc. Mugging and residential robbery both are highly linked with some common opportunity factors and motive (Repetto, 1974).
Amongst the offenses against property, theft cases cover more than 50% of total crime incidents, universally. These cases are concerned mainly with theft from a house, from shops, from public places and shops and from open streets (of vehicles). A more serious offense takes place in the residential area is burglary in which, if opportunity comes, the skilled thieves are interested. Burglary is a fairly homogeneous theft group with a fairly high rate of both reporting and recording. Davidson's study (1980) in this regard has revealed that of 86 Census Districts in Christchurch, Newzealand, five richest suffered six burglaries involving a loss of $1,204 whereas the five poorest had forty-sixburglaries in which $30,876 was stolen. Burglars move to the fringe of their neighbourhood to commit their crimes (Brantingham and Brantingham, 1975). Police response to burglary cells is only marginally affected by prior perceptions of the type of dwelling involved (Conklin and Bittner, 1973). "The risk of burglary to business premises is higher in suburban areas, perhaps because in such locations the premises may offer greater rewards to the thief and may be less protected against him" (Davidson, 1980).

By reviewing the information collected from different authentic reports it seems that environmental settings plays an important role to cause crimes - the offenders always prefer to exploit loopholes, to commit legally wrong activities, which they discover and consider advantageous to achieve their goals by evading vigilence. It has become further evident that on the basis of reported crime statistics it is possible to present patterns or geographical distribution of risk-areas for particular crime, in a locality, like city-centre, residential areas of a locality, fringes and areas where concealment opportunity for the doers is high.

In this connection, Newby's (1977) comment on the influence of a "criminogenic environment" deserve due attention.
2.2. Victims of Crime And Their Environmental Perception

Crime victims show unequal influences of gender groups in different countries where the number of male victims dominate over the number of female victims. In the findings of Hindelang et al. (1976) the ratio was 1:5 of eight American cities while in a different study with London sample the margin was found significantly lesser (Sparks et al., 1977). According to Davidson (1980) in both person and property crimes the number of male victims were found higher than female.

The highest risks for victimisation, with American data, was observed in the age range of 16-19 years (Hindelang et al., 1978). Newby (1979) reported a less clearly differentiated picture of juvenile victimisation than adult in his Sheffield study, irrespective of area and status.

The possibility for victimisation in certain types of crime remains more open to lack of experience and settings within which it occurs. Purposive violence and its gravity bear high positive correlation with 'unfamiliarity of the locations to the offender or where he anticipates confrontation with his victim' (Davidson, 1980). According to Waller and Okihiro (1978) less 'defensive spaces' remained more risky to burglary in Toronto - "social cohesion was found to have no independent effect, but the hours a property was left vacant did". Davidson (1980) opined that burglars were found to select victims irrespective of any of their attributes and all emphasis on the value of goods to be stolen.

The proportion of people in any locality with direct experience of being affected as crime victim remains significantly low in usual cases, under the umbrella of criminal justice administration. Yet the issue of law and order often
perceived by the people, dwellers population, as questionable or not upto the mark. "The 1964 presidential campaign first brought the issue of law and order into the national spotlight. The crime rate was soaring; what was the federal government going to do about it? After sixteen years, dozens of investigative task forces and presidential commissions, the establishment of the Law Enforcement Assistance Administration (LEAA) and now it is virtually dismantling, the answer is depressingly simple: not much" (Cronin et al., 1981). In an American locality where the official rate for the chances of burglary remained 1:1406 there 27% of the residents being asked about their chances of being burgled replied more than 50:50 (McPherson, 1978). Why the residents of the least burgled neighbourhood of Minneapolis were found so apprehensive? Because they perceived so - "Crime is perceived predominantly as a non-local issue" (Davidson, 1980). Residents of neighbourhoods with more incidents are less likely to perceive the recorded local rate as lower than elsewhere. But the said perception is not universal in character. McPherson (1978) found a good correlation between perception of risk and recorded rates of variety of offenses in Minneapolis. Generally, one's own neighbourhood is felt less dangerous.

"Victims of crimes against the person are overrepresented in 'deteriorated neighbourhoods', victims of economic offenses in 'good neighbourhoods' and those of property crimes equally distributed. Patterns of multiple victimisation tend to reinforce these area differences, especially for crimes against person" (Fishman, 1979).

Fear of crimes remain open to specific crimes, feelings of 'no safety' in high crime rate areas, community beliefs and norms, anonymity, isolation, lack of
privacy, immobility etc. "Those who perceive more crime are less willing to report it" (Davidson, 1980). There are localities populated by heterogeneous group of dwellers which are perceived by dwellers of distant areas as fearful spots - where criminals live - which notion is so old that it is difficult to trace. The said belief to perceive a fringe or a particular village with notoriety help stigmatising its dwellers also as 'dangerous' people. In India such perception and fear are found present in most of the provinces, including West Bengal (for example, Lodha community in Midnapore District, West Bengal).

Perception of people about a safe and secured environment is highly linked with their fear and apprehension. Localities where good citizens generally live is perceived as unsafe when people's confidence becomes low and stray incidents of crime caused by strangers increase suddenly. It reflects the peoples' defence mentality and where victimisation is not necessarily direct. Sometimes, rumor spread by fear-stricken dwellers intensify or exaggerate the fear of local residents to unrealistically high level. Here, collective response may dominate the individual (Conklin, 1975).

The said defence mentality is equally applicable to offenders. There are localities in the rural areas, urban areas and fringes in different states of India where particular type of offenders prefer to take shelter - as safe place. They find here communities or dens for gang life where the dwellers adopt a defensive posture towards crime, become less active in other areas of interpersonal relations and, thereby, get themselves away from legitimate social networks. Their development though unusual but not rare around the areas where abrupt urbanisation takes place and anonymity increases in the heterogeneous population. "Attitudes
in refuge environments express alienation from the general norms of society:

Crime in these neighbourhoods is not so much a violation of the norm, as the

norm itself" (Davidson, 1980). Here, Police recording practices may vary between

communities reflecting perceptions among policemen about their role as law-

enforcers - quite common in the fringes of border areas between India and Nepal,

India and Pakistan and India and Bangladesh in West Bengal. Offenders may be

found to concentrate in certain localities which have bearing on why and where

they offend. It seems that social location and perception of crime problem bear

a significant relationship, universally.

2.3. Geography of Crime:

Professional geographers made themselves directly involved to unearth causal

relationships between 'space' and 'crime' in recent decades, though a 'carto-

graphic' school of criminology could be traced between 1840-1880. The environ-

mental paradigm of the late nineteenth and early twentieth centuries bear a

hint about a research possibility with the geography of crime. "It was not really

until the behavioural dimension had been added and questions of relevance had

been raised in their modern forms that the terms of reference of urban geography

were such that topics such as crime and delinquency could be counted as legitimate

research themes" (Herbert, 1982).

In their pioneer effort, Clifford Shaw and Henry McKay (1942) conducted a

survey research with juvenile delinquents of Illinois City and demonstrated a

set of techniques to map out the homes of juvenile offenders. Replication of

the procedure for several other American cities confirmed the reliability and

validity of 'spatial model' with two exceptions. Their revision study in 1969
revealed a persistence of general pattern. They observed significant inter-
relationship between delinquency, adult crime, recidivism and truancy and
where truancy was recognised as a good indicator of 'potential delinquency'
while certain component variables of 'poor environment' - like substandard
housing, poverty, foreign-born population and mobility - were found correlated
with high delinquency rates (Shaw and McKay, 1969). Clinard (1962) simply related
high crime rates to neighbourhoods lacking social cohesion and stability. Studies
conducted by several geographers confirm zones and gradients and proved their
scientific worth (for example, Scott, 1972; Harries, 1974; Pyle et al., 1974;
Corsi and Harvey, 1975). Baldwin and Bottoms (1976) reported large central con-
centrations of offences in Sheffield.

Being interested to find out ecological correlates of crime by statistical
techniques several researchers preferred to use 'canonical analysis' than the
'factor analysis' (Gittus and Stephens, 1973; Pyle, 1974; Corsi and Harvey, 1975).
Several other researchers like Lee and Egan (1972), Baldwin and Bottoms (1976)
preferred to use 'regression analysis'. Johnstone (1978) by using 'social area
analysis' in a study of teenager deviants concluded of a relationship between
'social location' with 'delinquency'. Researchers interested in statistical
analysis have become more interested later to identify any single indicator in
the core of the legal deviancy problem like demographic features, socioeconomic
features, living conditions, unemployment, ethnicity etc. To quote Herbert (1982):

"More general awareness of the significance of socio-political processes and
'class conflicts' will lead to more research into levels of analysis which are
antecedent to crime patterns as spatial outcomes, though very little research of
this kind has so far been completed."
"Local environments as opportunity structures for crime, contain cues and stimuli to which potential offenders respond."

"A geographical study of crime may well contain a prescriptive role and the scope for an applied dimension to research is considerable."

Assuming vulnerability of environments attempts were made to distinguish offences and the ways in which offence rates increased or decreased under typical characteristics of environments - urban, semiurban and fringes (Boggs, 1966; Baldwin and Bottoms, 1976). Harris (1980) suggested, in this regard, a procedure to determine measures or the rate for an environmental risk-related crime, as given below:

\[ R_{rx} = \frac{C_x}{R_{ux}} \]

Where \( R_{rx} \) is the risk-related rate for crime type 'x̂', \( C_x \) is the frequency of crimes of this type, and \( R_{ux} \) is the number of units at risk in a specific area.

Newman's idea of 'defensible space' (Newman, 1972) had its novelty but earned criticism due to methodological lacuna (Mayhew, 1979) which, of course, he improved in his inter work (Newman, 1976) by introducing several experimental controls carefully for social variables among his population groups along with well-defined roles. Reviewing the research reports on 'defensive space', between 1973-1980, it may be said that the assumptions regarding the significant influence of unhealthy social environment and inadequate social prophylactics on the formative years of life and of socialisation in poor quality of living environment were retained mainly by almost all researchers (Leather and Mathews, 1973; Pablant and Baxter, 1975; Mawby, 1977; Waller and Okihiro, 1978).
the core factor in 'defensible space' thesis, received explicit attention in several research reports like Repetto, 1974; Wilson, 1978 and Mayhew, 1979, with reference to family, community and neighbourhood culture, values and style of life. In support, Clarke (1978) offered a useful framework to conceptualise acts of vandalism.

Brantingham and Brantingham’s study (1975), using data for Talahassee, revealed that border blocks or social areas had higher burglary rates than interior blocks because here offenders found greater anonymity. There was a sharp decrease in the rates towards the centre of a neighbourhood due to belongingness and clear identity. 'Heterogeneity' as a correlate of offence rates, due to less integrated space, was claimed by Winchester (1978).

2.4. Current Position of Geography of Crime Study

As remarked by Herbert (1980), a geography of crime "must find its place within more methodological developments in human geography" by stimulating researches at different 'levels of analysis' of a conceptual framework and increasing its reciprocal relationship with other social sciences relevant to criminological theories. The study, so far has been reported by reputed authors of U.S.A. and U.K., has focused firmly on the 'local environment' as a level of analysis - of course, depending on official statistics, criminal justice administration policies, laws, law enforcement practices and ecological facts and figures including perceptions of local people. "More behavioural research can both examine ways in which known offenders perceive the city and behave in space and how the general public react to the stress which crime generates" (Herbert, 1982) -
keeping in view of its crime prevention values, and worth for 'designing environment' (Jeffery, 1977).

"In a democracy, planning is extremely difficult because diverse interests do not agree about the specific terms of long range objectives. This was particularly true for Safe Streets Programme" (Cronin et al., 1981). But it requires a solution.

An important and critical turning point in human ecology and criminology occurred in the works of Sutherland, Shaw and McKay, who put all emphasis on the dwelling places of offenders, not their places for legal misdeeds, their social environments. They observed the influence of wide diversity in norms and standards of behaviour - ultimately which helped Sutherland to conceive of 'dys-social' behaviour generated under the influence of "differential association" (Sutherland, 1954). Thus ecology became the study individual offenders and in the midst of typical social environment, not physical environment. Baldwin and Bottoms (1976) conducted a study and found that the "distance travelled by offenders to commit offenses is a critical variable".

In a cross-cultural comparative study of Toledo, Ohio and Rosario (in Argentina), David and Scott found that "Toledo had a high rate of larceny, auto theft, and burglary, whereas Rosario had a high rate of sex crimes and assaults. Due to faulty design of supermarkets in Toledo shoplifting rate was high in Toledo only. Isolation of housing in Toledo increased burglary rate comparatively higher than Rosario where residential and commercial areas were built up in the same plot. Whereas, due to crowding, physical contact, lack of privacy and personal space criminal assaults were found to occur at a higher rate in Rosario than Toledo."
Bedrooms and living rooms became the site of criminal homicide in at least 34% cases, open streets in at least 37% cases and bars where people get drunk in at least 26% cases – reported by the U.S. National Commission on the Causes and Prevention of Violence (1969). But that does not mean that bodies would be always found on the place of occurrence. Curtis (1974) observed very specific spatial arrangements for crimes of violence in Boston, Philadelphia, Atlanta, Chicago, and San Francisco. Crimes against persons were more confined and closer to home than property offenses (Pyle, 1974). Closeness to major transportation routes, a street with light vehicular traffic, and land-use patterns in a residential area were found as helpful factors to cause robberies in 'daily consumer goods stores' to loot hard cashes mainly, in Tallahassee (Duffala, 1976), while burglary rate was found high in low-occupancy buildings and low in high-occupancy buildings (Repetto, 1974). The study conducted by Feeney et al (1974) of robbery cases in Oakland, of auto thefts and bus vandalism in London by the Home Office in England (Mayhew et al, 1976) provided strong support to risk hypothesis in regard to site for crime and in relation to opportunity present therein. Observations reported by Molumby (1976) with the patterns of crime in a university housing project in the U.S. supported also the said hypothesis caused by location and architecture of the buildings. Cohen and Felson (1979) linked the ecological factors of crime with the routine activity or area – busy and frequently visited vs sleepy, deserted and coerced community life.

According to Mary (1981), "The deterioration of the moral order of a neighbourhood, including bad influences of street youths, the prevalence of drunks, neglectful parents, and people who live according to different moral codes, evoke feelings that the neighbourhood is dangerous. Danger is evident in the downhill slide in a
neighbourhood: trash, broken fences, graffiti, rusting cars, and general appearance of neglect suggest that no one cares about the neighbourhood. They are perceived by the dwellers as 'bad space' and obviously are perceived as 'good hide space' by the gangs and may become a den for dangerous group. The fear of crime itself may have an impact on neighbourhood cohesion, instilling distrust, and suspicion among fellow residents. Thus, areas of a neighbourhood can be considered safe by a police but unsafe by community residents. Neighbourhoods can be more or less successful in contributing their own safety. There are areas where residents being afraid of dangerous local people avoid calling police and there are areas where people 'avoid police interference to protect their own interest' (Hernstein, 1985). Georges-Abeyie and Harris (1980), Brantingham and Brantingham (1984), Figlio et al (1986), Reiss (1986), and others have described the role that community characteristics, land-use, pattern, transport vehicle movement pattern and architectural pattern of buildings, play in the generation and prevention of crime.

More recently, Felson (1987) has suggested how colocation of crime targets and guardians might deter would be offenders from committing crime; and Harris (1990) shows how maps can assist police in determining how geographic and environmental factors affect crime though one may find Stark (1987) to remark against the significant role of any typical criminogenic environment.

The concerted effect of quite a good number of studies in the United States encouraged the National Institute of Justice to undertake a project to mapping crime in its community setting in the 80s of the current century under the leadership of Michael D. Maltz, Illinois University, Chicago, Andrew C. Gordon of
Northwestern University, and Warren Friedman of the Chicago Alliance of Neighbourhood Safety in collaboration with Chicago Police Department (Maltz, Gordon and Friedman, 1990).

In the said 'event geography analysis' report the authors (Maltz, Gordon and Friedman, 1990) have distinguished two types of patterns: "(a) those that point to the characteristics of a particular perpetrator(s), and (b) those that identify a type of crime and a geography of pattern when little information is known about the offenders". The latter is described as MAPADS – which has been recognised by the Police Department as a very useful tool to plan crime control programmes of a locality. "Geographical location appeared to be a significant determinant of crime rates except for the relatively wealthy residential areas" (C.R.B. Report, Scotland, 1991).