ENVIRONMENTAL DESIGN AND ENVIRONMENTAL PSYCHOLOGY: UNIVERSITY CAMPUS SECURITY

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Introduction

Environmental Criminology can help prevent criminal, delinquent and deviant (offensive, objectionable, or nuisance) behaviour by reducing situational opportunities and perceived rewards, and increasing risks - from the offenders point of view - and by strengthening a community's sense of responsibility for place.

It is the joint *interaction* of the physical and the social, the situational and the motivational, the individual and the communal...that underlies environmental design and management as a crime prevention strategy. Surveillability, accessibility, suggestibility, area appearance/quality, *and* community involvement and willingness to intervene, *in combination*, can help create a safe-place and generate an image of an area/campus as a safe-place.

Criminal, delinquent and deviant behaviours require the *co-incidence* of psycho-social and sub-cultural circumstances, temporal/spatial settings and environmental cues, security presence and community intervention potential, victims and/or targets, and, most importantly, criminally motivated individuals. Contemporary environmental criminologists believe that different levels of opportunities are likely to trigger persons with different levels of criminal motivation, with weaker opportunities only triggering action by those with the most powerful compulsion to crime (Brantingham & Brantingham, 1991/b; Gottfredson & Hirschi, 1990).

Attention to details of areas at a micro-level, without recognition of the whole picture of areas which forms in people's minds (in a Gestalt sense, the whole being more than the sum of the parts) will severely limit the effectiveness of any design changes on crime and fear of crime (Carter & Hill, 1977). At the same time, however, crime is not uniform, and preventative approaches have to address the diversity of criminal behaviour, and understand the *specific* places where they occur, the specific times at which they occur, who might be committing the offences, and what socio-spatial elements are contributing (Brantingham & Brantingham, 1990). Crimes against property (burglary, vandalism, arson) and violent crimes

against persons (robbery, assault, rape) are similar, nonetheless, in the sense that offenders (disproportionately of the male gender) do not want to be caught, and will therefore seek to perpetrate such crimes where the chance of them being seen is minimal, and where the odds are generally in their favour - hence where their offensive strategy is deemed superior to whatever defensive mechanisms exist. Understanding territorial judgments in a criminal's mind is of great importance to environmental criminologists and designers, and to police. How, for instance, do potential offenders 'weight' various defensible space features? What is the combination of factors that denotes a 'susceptible or immune' site? Do they read but override territorial demarcations? Do they assign importance to decoration - as a sign of occupancy and proprietary attitudes?

Criminal Victimisation

In the case of crimes against persons, wherever they occur, offenders will also have to make judgements about a victim's character, strengths and weaknesses, and the likelihood that others will come to their defense. Here it is the person's vulnerability (accessibility to self) rather than that of a building, a neighbourhood or a campus that is interpreted; and the strengthening of potential victims by dealing with 'victimisation personality types' is crucial to crime prevention. With regard to the prevention of sexual harassment on campuses - where perpetrators are known to the victim - consideration is being given (by the author) to the production of a video for tertiary students on Australian campuses, dealing with assertiveness, self-defence, and gender-specific attitudes. Information which challenges standard male/female stereotypes, and issues of date/acquaintance rape on campus, would be explicitly dealt with.

Fear of Sexual Harassment

Victims, not unlike criminals, act in rational ways. An understanding of fear of crime and criminal victimisation must include socio-situational experiences both *before and after* the victimisation experience. Besides affecting actions before a crime (via projections/suggestions of individual and/or community/campus vulnerability) fear often also immobilises victims after crimes, and helps explain low rates of reporting.

Fear of rape, on American university campuses, peaked during the late 1980's. Situational remedies adopted included 'blue-light telephones' located throughout campuses, from which threatened women could call security services (Princeton now has about 70), whistles handed out to women students, and 'walls of shame' - lists of alleged date rapists pinned to bathroom walls or distributed on campus - also popularly referred to as castration lists! Social remedies

included Take Back The Night marches and speeches, sexual harassment peer-counselling groups, and the distribution of pamphlets giving sample date-rape scenarios or entitled "Is Dating Dangerous?"

However, certain commentators are sceptical of the emphasis placed on rape on campus. Gilbert (1992), questioned the way rape was measured in the *Ms*. magazine study of date rape on campus (Warshaw, 1988). 73% of the 1 in 4 women who were categorised as rape victims in that study did not themselves define their experience as rape, and this, it is claimed, reveals more about sexual politics than about sexual behaviour. The fact that date and acquaintance rape is an area of notorious confusion for women is not, however, acknowledged, nor that women today are more willing to recognise the existence of this problem, or that they might indeed have been subjected to events that involved *a lack of consent* that they would now view as sexual harassment. Roiphe (1993) believes that this 'fascination with sexual harassment' and date rape is a 'feminist preoccupation' which sees women as victims, or as 'survivors' of victimisation, and that it is a self-fulfilling prophecy, reinforcing their vulnerability, 'officially' multiplying their fears, unnecessarily limiting their freedom. Moreover, the campus rape-crisis culture denies natural female desires and infantilise them, perpetrating myths about female innocence. Women are afraid to walk around campuses at night; unnecessarily so, Roiphe claims, and quotes statistics of 2 reported rapes at Princeton between 1983 and 1992, hardly a convincing argument. More relevantly, she reminds readers that men are not immune to assault, that danger and fear are not an exclusively female domain.

It is important to remain as objective as possible when dealing with a subject as fraught as sexual relationships. Obviously, we must avoid labelling miscommunication and insensitivity as acquaintance rape; nor must we use words to describe events that women do not themselves use. At the same time, to deny that sexual harassment is a phenomenon that must be consciously avoided by women is naive. In reality, however unfortunately, some places should be avoided, some times of day are less safe than others; some lifestyle activities increase vulnerability to victimisation, and one way or another women are going to have to carefully manage their relationships with men, both those known and those unknown to them, if they want to avoid situations in which control-over-self is relinquished.

Reporting Rates

Different crimes have different reporting rates. Vehicle thefts, for example, are reported about 86% of the time (a requirement for lodging an insurance claim), while reporting rates of only 5-7 % are common for rape in many developed countries. In the USA, for instance,

the Lott, Reilly & Howard study (1982) of students and staff on three Rhode Island University campuses indicated that only 7% of serious sexual assaults were reported to the police; and the *Ms.* magazine study (Warshaw, 1988) found that date and acquaintance rape victims were reluctant to report these incidents (5% reported the event, 42% told no-one at all about it). Ms. Daley, of Suzanne Daley's Self-Defence for Women, Melbourne, has confirmed that only about *1 in 20* of the thousands of post-trauma sexual-assault women she has counselled over many years have reported the event to the police *(personal communication)*.

A range of reasons why victims *fail to report* have been suggested (Kidd & Chayet, 1984). Victims tend to view reporting as ineffective/futile (perceive the police/authorities as powerless) and inconvenient (time and money will be lost as a result of following through a report). A fear of recrimination/retaliation (where the offender is known - very relevant in situations of acquaintance rape) is of course very real; and added to this is a fear of indirect and further victimisation by the authorities themselves (depersonalisation and embarrassment at the hands of hostile defense attorneys/prosecutors, unsympathetic judges, incredulous police, or embarrassed and hesitant university administrations). Most importantly, a victimisation experience represents a situation where personal control was ceded/lost and a victim's understandable psychological reaction is to avoid feeling pain and anxiety or fearful and vulnerable again. In order to regain/preserve their self-esteem they would want to forget and rationalise the experience, not reinforce it by reporting it and thus re-live the situation again and again by explaining, describing, and recounting it, and/or having contact with any persons or organisations that might treat them as victims. It is also interesting that Burgess and Holstrom (1975) found that the majority of women in their rape study who had contacted the police had done so only because someone else made the decision for them.

Since often the victim's fear is not reduced by reporting crime to authorities, an alternative available to a victim is to report the incident to friends, other residents in a college of residence, and family. This 'in-community' reporting, in turn, generates a kind of secondary victimisation, a 'vicarious experience with crime' (Lavrakas, 1981), where the social networks of victims experience emotional reactions similar to those of the victim (Friedman et al, 1982).

Minorities are also less likely to report rape, particularly to the police (Feldman-Summers and Ashworth, 1981). This could have important implications for reporting on Australian university campuses, given the percentage of foreign students enrolled. At UNSW, for instance, about 12% of the student body is made up of international students, of which a very large proportion are from Asia.

It must also be remembered that where informal action (neighbourly intervention) is taken regarding acts of delinquency, and parents are contacted, the likelihood of such behaviour being reported to police is diminished, thus artificially reducing the rate of such offences in more neighbourly, cohesive and homogeneous neighbourhoods (Hackler et al, 1973).

Criminal Victimisation Surveys

Considering the very low rates of reporting of personal harassment events (sexual harassment in particular) the reality of the situation on campuses, housing estates and inner city zones cannot be appreciated, and adequately responded to, unless attempts are made to unearth unreported offences. The technique being employed since the early 1980's is the criminal victimisation survey, conducted at both national and local levels.

Relevant extracts from criminal victimisation studies in Australia and the UK, relating to offences against the person, are given below.

First Australian National Crime Victim Survey /1975 *(*Braithwaite and Biles, 1980). Offences against the person were shown to occur predominantly *at night* - robbery with violence 83% of the time, assault 70% of the time, and rape/attempted rape 60% of the time. The focus on use of campuses afterdark, in the campus security study being undertaken by the author (Samuels, 1993), is reinforced by such findings.

Perpetrators of the sexual offences were categorised as a close friend 17% of the time, an acquaintance 40% of the time and a stranger 43% of the time. In other words, persons were *known to the victim 57% of the time*. This has obvious implications for the investigation into date/acquaintance rape on Sydney campuses (Samuels, 1993).

Crime in Australia: as measured by the Australian component of the International Crime Victims Survey 1989 (Walker, 1991*)*. Factored estimates suggested that over 1,000,000 sexual incidents would have occurred in Australia in 1988, of which only 7.6% would have been reported (confirming campus reporting rates). Around half the sexual offenders would have been known to the victim, (similar to the 1975 survey), with one in eight being described as a 'close friend'.

The British Crime Surveys (BCS) were national victimisation surveys conducted in 1982, 1984 and 1988. Findings indicated that fear of crime is more of an issue than the actual occurrence of crime. The BCS indicated that young men were more likely to be victimised, and that risk was associated with lifestyle, eg the number of evenings spent outside the home,

particularly on weekends, and the frequenting of pubs, all increased the risk of street robbery. Where women follow similar lifestyle patterns, however, their risks are found to be similar to those of men (Gottfredson, 1984). With regard to rape and sexual assault, the BCS found that the heightened fear unearthed could not be explained by the actual risks, which were apparently negligible.

However, criticisms levelled at the BCS include arguments that high and low rates in different areas were aggregated, thus masking the real geographical spread; and that the concentration on women's fears, and on legally defined crimes, led to an exclusion of their everyday, commonplace experiences of racial/ethnic abuse and offensive behaviour directed at their sexuality in public places. Albeit not criminal, this phenomenological reality constitutes a form of victimisation which impacts significantly on their quality of life or their 'lived reality of social experience' (Painter, 1992). The issue of differential perceptions of crime is highly relevant. The differences between legally defined high crime areas (or crime hot spots) and those which residents perceive as crime prone can be substantial. Brantingham and Brantingham (1991/b) report on a study they undertook which identified differences between resident and business owner explanations. Residents considered high crime areas to be those where nuisance behaviour occurred (noisy kids congregating, eg), while business owners reserved that definition for areas where shoplifting occurred. We would expect the elderly, and women, to have different perceptions again, as would people from different cultures. Routine activities and expectations determine to a large extent the behaviours that are considered to be objectionable.

Furthermore, it is now generally accepted that women are involved in hidden and unreported violence which occurs in private places, and that large-scale victimisation surveys are not appropriate instruments with which to unearth the true extent of family violence (Stanko, 1988) and/or acquaintance harassment.

Micro-surveys were carried out in London in the latter half of the '80's, which concentrated on small areas in inner city boroughs (at the level of streets and estates, in Islington and Hammersmith/Fulham), and which led to a mapping of criminal victimisation by locality, time and gender (Painter, 1988; 1989a; 1989b). These local victim surveys showed that in the inner city areas surveyed and on peripheral council housing estates, *women were proportionately more likely than men to be the victims of crime* - which finding justifies their fear of crime as being realistic, and contradicts findings in national victim surveys. For instance, in Islington women were 40% more likely to be a victim of a street robbery than men, (equally likely in Hammersmith and Fulham), and twice as likely to be assaulted (and violently). Sexual assault in Islington was also shown to be *14 times higher* than the BCS

averages, and was particularly prevalent amongst 16-24 years olds. Moreover, women experienced greater levels of threatening and abusive behaviour in public places (reported by 43% of respondents in Islington, eg).

Kate Painter succinctly sums up the issue: 'To put it bluntly, the women surveyed do not fear crime, they fear men'.

Findings from these micro-victimisation studies are relevant to experiences on university campuses - themselves micro-environments, where large numbers of high-risk young men and women congregate on a routine basis, of whom a considerable proportion use library facilities afterhours, or attend evening courses, or live on-campus and use it regularly afterdark.

Environmental Design: Campuses and Colleges of Residence

CPTED principles which are relevant to the design of urban environments and residential environments are also applicable to university campuses, which are in many ways microcosmic urban/residential/pedestrian environments. The same three general principles apply: surveillability, accessibility and suggestibility. And the time of most concern, in environmental criminological terms, is afterdark, when the student community is considerably reduced, and when residents at the colleges on campus are going to and from their places of residence.

Emphasis in this paper is on prevention of crimes against the person, but it should not be forgotten that the problem of theft on campuses is legion - it is by far the most prevalent crime committed. Personal theft in libraries, for instance, is very prevalent and remedies being considered include CCTV systems and signs warning students not to leave personal belongings unattended. Universities also have substantial amounts of expensive equipment which are highly visible targets. An anomalous situation also exists where large institutions such as universities have very high insurance excess charges (*ie* they are required to pay the first several thousand dollars of any claim), which results in few reports and records of theft of equipment with values lower than the excess.

An abbreviated checklist/design guideline is presented below, which attempts to cover the ground without delving deeply into micro-design issues or macro-planning issues such as the impact of socio-economic, criminal occurrence and criminal residence profiles of neighbourhoods surrounding campuses. The latter issues require major studies in their own right.

Surveillability

- **siting of buildings and colleges of residence**

* College entrances, driveways, gardens and especially windows should overlook adjacent spaces, in order to generate enhanced opportunities for vigilance.

* entrances to student residences should face towards adjacent campus roads. Merry (1981b) mentions that where dwellings only face into courtyards and do not also face the road, there is not enough of general interest happening in these courtyards to generate regular patterns of natural surveillance (Jacobs, 1961).

* entrances should not project out from the facade, since this can obstruct the view down the road, or 'sightlines' (Hillier 1984).

* buildings visible from roads and/or well-travelled walkways suffer less crime (Rouse & Rubenstein, 1978).

- **areas between buildings, or building interstices**

* Hillier (1984) derived a technique to evaluate how the spatial configuration of buildings defines public space, and its use. In order to encourage people to move freely and interact often, dead-end spaces and secluded streets with 'short sightlines' should be identified (and eliminated) via space syntax techniques such as convexity maps and 'axial' maps.

The convexity map shows an area broken up into convex and concave segments. A convex segment is one in which a person standing at any point on the perimeter of a segment can see another person at any other point on its perimeter. A concave map has blind spots in it.
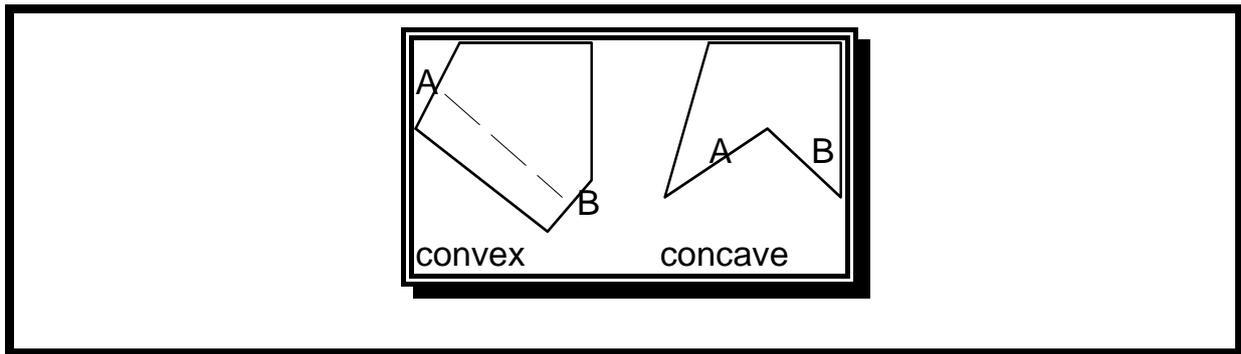
- **window size and placement...and glazing type**

* placement/location for *overlook*/surveillability of non-private spaces.

* glazing *type:* - the use of light sensitive or photochromic glass would permit surveillance by occupants of outdoor spaces but at the same time diminish the capacity of outsiders to see in *ie* people want to see out but do not want others to see in (invasion of privacy). Such glazing also has energy efficient properties, the use of which could help meet new standards for building/development applications currently being developed by local councils (Leichhardt Council, 1993) and contribute to the quality of the ecological environment. In any event, glazing for surveillability should not be frosted, patterned, beaded.

- **street and footpath design**

* paths should not be located near to windows of colleges (to maintain privacy), but proximate (to enhance surveillability).

* cul de sacs 'privatise' domains, reduce stranger presence and generate more territorial functioning *ie* neighbourhood ties are stronger on cul-de-sacs than on through streets (Brown & Werner, 1985). Cul-de-sac residents indicated a greater sense of identity and responsibility, were more satisfied with security and sense of community, and had more contact with neighbours than through-street residents. Together, these attitudes and behaviours represented a heightened sense of neighbourhood *attachment*. University college domains should, similarly, be located in cul-de-sac domains, which could enhance a sense of attachment and responsibility for place.

* pedestrian footpath design: Angel (1968) posits that where pedestrian presence is low there will be no crime *ie* few potential victims (this is debatable); and that there is a 'critical intensity zone' where most crimes take place *ie* where increased pedestrians represent

potential victims, but not enough people are present for adequate surveillance. As pedestrianisation increases further, pedestrian areas become safe again. In other words, the juxtaposition and mix of activities on campuses and the design of paths to and through them are critical design/community interaction issues which must be carefully addressed.

- **mixed zoning**

* anticipated consequences are: the inclusion of local facilities, residential, commercial, recreational, teaching and library domains in a *fabric* which, by 'populating' these areas, results in heightened 'animation' during the daytime hours and, particularly, at night. In principle, 'eyes on the street' (Jacobs, 1961) enhance natural surveillance opportunities and reduce fear - due to the presence of potential witnesses and, hopefully, people who feel strongly enough to actually intervene (or at least make the effort to alert the security services/police).

Where land-uses do not have continuous occupancy there is a gap in the socio-spatial fabric, and because surveillance is lower, these places - *ie* at the *'territorial interstices'* - are likely to be assessed by 'marginal' individuals as good places for crime (Taylor, 1988).

- **cluster/court design of student housing**

* incorporates principles of human scale (low-rise), integration of open space, protection of privacy (no overlook onto private space) and enhancement of surveillability (overlook onto semi-private open space). Clearly delineated public space, community space and private space (both physical & symbolic), and clear transitional filters between them are a hallmark of successful housing, wherever it is located.

* clusters within clusters can be developed where small groups of students have exclusive use of an entrance, bedrooms clustered around an internal courtyard area, common balcony, bathroom facilities, and even cooking facilities. This enhances their sense of control and appropriation over these domains.

* physical proximity and the clustering of dwellings (Whyte, 1964) or dormitory rooms can be considered to provide an in-built potential for friendship and group formation; but whether or not friendships (or hostilities!) actually form will depend on intervening variables such as socio-cultural homogeneity, routine behaviour patterns, and similarity between value systems and interests - which frequently lead people to seek like-minded individuals far beyond their immediate living domains (Gans, 1967). Physical propinquity, thus, is complemented by

functional distance (Festinger et al, 1950), which depends on design and positional relationships such as the orientation of dwelling places to one another (front and back doors, windows), location of paths to commonly used facilities, position of letter boxes, garbage bins etc. This functional distance depends, thus, on recurring and shared activities in time-space, which in turn provide situational opportunities for social contact. Case (1981) showed how (socially homogeneous) senior college students tended to choose roommates, and develop longstanding friendships, according to architecturally determined 'domains of acquaintance' from their junior years *ie* according to functional interactions which were determined by the sharing of paths to facilities (such as showers) and the juxtaposition/clustering of their dormitory rooms.

Cluster designs and courtyards, repeated at varying scales and levels of interaction (from the formal to the intimate) can enhance both propinquity and functional proximity in campus college buildings.

* Merry (1981b) evaluated a major urban renewal housing project which had one of the highest crime rates in the city (for robberies and assaults particularly), despite the fact that about 50% of the project is designed as low-rise cluster housing around quiet dead-end streets. It was in this subsection of the estate that she conducted her survey. Access to the upper apartments in these low-rise clusters was via an exterior stairwell; and there was, thus, a minimum of interior public space. Small porches and patios were shared by only two dwellings. Pathways were lined with trees, play areas for children and adolescents were provided, with adjacent sitting areas with benches, clearly visible from the adjacent dwelling units. Only four families shared a single entrance. In sum, all the defensible design elements suggested by environmental criminologists are present, yet crime was frequent, and over half the robberies reported in her victimisation survey occurred in areas which are architecturally defensible.

In terms of design, Merry mentions several *micro-features* which could have contributed to this situation. The exterior stairwell, for instance, makes four turns before arriving at the landing, which makes it impossible to see who is in it before beginning to ascend or descend. Glazing in this stairwell was translucent not transparent; and the front of the apartments afforded hiding places between the fences enclosing the trash can area and the sides of the stairwell. Both obstructed the view of the porches from the courtyards. Half the robberies took place on these porches and in these stairwells - where visibility was obstructed.

Most importantly, the *repetition of building styles within a multitude of spatial configurations* was found to be confusing by the residents, who could not readily form a mental image of the project (unintelligible in Coleman's terms (1985), illegible in Lynch's

terms (1960), or having poor space syntax in Hillier's (1984)). The project had a reputation in the neighbouring communities as a 'mazelike area into which criminals could easily vanish'. Residents said they would have felt safer living in a neighbourhood with regular street patterns and house entrances which were flush with these streets.

In the final analysis, it must also be remembered that this housing project was an urban renewal scheme, with the attendant loss of sense of community, attachment and appropriation associated with renewal schemes.

> Understanding micro-design issues is, evidently, as important as understandings the lived reality of people from micro-victimisation surveys.

- **lighting (and visibility)**

* **level** (*and type*) of internal and external lighting is extremely important in any defensible design.

* Sterner (1987) interviewed women about the design characteristics that contribute to them feeling unsafe, and *'dark; poor lighting'* was the most frequently mentioned issue (60% of responses).

- **transport nodes**

* design and management of railway stations and bus stations serving campuses require special attention; CCTV might be a good solution, and in any event good lighting is crucial. Good lighting does not only illuminate the node itself, thus allowing users to stand out in a dark background, but illuminates a wide area around the node, thus allowing users to sight other people approaching.

- **surveillability of parked vehicles**

* underground parking requires CCTV (where possible) and controlled/scrutinised access; open-air parking should be proximate to colleges & visible from them. Lighting is crucial, and gate-keeping an important deterrent (restricting access). Poyner (1993) showed how CCTV systems at a University parking lot reduced the incidence of theft from cars. Over and above the issue of cars being stolen, or maliciously damaged/broken into is the issue of the

potential opportunity for muggers/robbers to hide amongst parked cars, and the apprehension women often experience when walking in the vicinity of parked cars with darkened interiors. Lighting should be of such a nature as to both illuminate the area generally, and to project light at levels that penetrate into car interiors.

- **open landscaping**

* low bushes and hedges, high canopy trees, and level ground can increase sightlines, and remove potential hiding places.

* Large open spaces unused at night require special consideration *ie* sports fields and ovals, and open spaces between campus buildings and transport nodes or carparks.

- **boundary walls**

* the design of boundaries between campuses and city streets is crucial, since boundary walls can either help restrict unwanted access, or, by representing places that have been overlooked (forgotten about *ie*) and/or cannot be overlooked (surveilled) these transitional zones can unwittingly provide hiding places. Once scaled, solid walls offer protection against being seen. *Open fencing*, perimeter lighting, and orientation of windows can overcome this.

- **visibility *inside* buildings**

* lobbies, halls, elevators and stairwell/fire escape stairs are places where most crime occurs inside buildings (Newman, 1972; Rouse & Rubenstein, 1978). Similarly, Newman, (1972) found that where there are multiple alternative escape routes from the inside of buildings, eg inter-accessible lifts, staircases and exits, crime rates are higher. And he also pointed out that where corridors are external they are open to view from the street, whereas internal corridors that do not have windows onto them from dwelling units allow criminals to circulate freely.

* in high rise residential blocks, it is the ground-floor apartments which are most victimised (accessible), followed by top floor apartments (access from roof, plus low surveillability).

* Shaw Associates (1983) suggests that there is a conflict of interests between *safety and security* in the provision of fire escapes. In their study of a housing estate they found an annual rate of 1 fire per 5 dwellings. It seems likely that this high incidence of fires were acts of arson, and were exacerbated by the fire service's requirements for additional and windowless staircases and exits, areas where criminals and arsonists are shielded from scrutiny (and which serve as convenient escape routes).

Accessibility (penetrability/legibility)

- **access/egress control:**

* via entry controls, gatekeepers, concierges, supervisors, parking lot attendants...
* and via physical mechanisms:
i) relationships of external/out-buildings to main residence *ie* access from roof, fences and walls, carports, drainpipe access; height of windows above ground, presence/absence of prickly shrubs beneath windows, locked-open ventilation systems for windows, height of balconies above ground;
ii) target hardening *viz.* locks/bars, anodised aluminium security doors, with double cylinder mortise locks, pin numbers, swipe cards & front door peepholes, and entry-phones. Entry phones are vulnerable to vandalism, and once damaged can increase a sense of lack of control, since legitimate visitors cannot gain entry.

At the same time, the social issue of limiting access via front door control to multiple tenant buildings (such as colleges of residence) is problematic. When legitimate users encounter someone at the door who does not have a key but is trying to gain access, they are reluctant to seem unfriendly, or uncivil, are unsure if the other person is legitimate or not, or might well be intimidated if the other person is aggressive or threatening.

- **boundaries**

* can be physical &/or symbolic; and gaps in boundaries, which allow strangers to take short-cuts across residential domains, should be designed out. Entire residential college domains can also be bounded, with access/egress restricted to one gateway controlled by a gatekeeper.

- **distinctiveness of entrances**

* this is a symbolic environmental cue which can provide 'out of bounds' messages and help create semi-private space; via use of varying materials, textures, patterns, levels & setbacks.

Environmental Suggestibility and Territoriality

Environmental suggestibility is largely influenced by territorial markers, and area imagery.

- **environmental or territorial markers/cues**

* environmental cues are indicators of ownership, occupancy, investment, caring...and include explicit elements such as "Keep Out" signs, and implicit elements such as upkeep and beautification, and symbolic signs of uniqueness, etc. These are non-verbal messages to people in settings about how they should behave there (Rapoport, 1982) *ie* there is an association between physical cues and appropriate social behaviour. Physical and symbolic features *cue* people into a setting.

- **area images**

* Gestalt theory suggests that individuals tend to group objects by proximity and similarity, and Carter and Hill (1979) found that criminals expressed an intuitive 'feeling' about an area, in terms of criminal opportunities and risks. These 'background expectancies' were important to the formulation of their strategies. Specifically, criminals formed images of areas according to their familiarity with an area, their perceptions of police presence there, and the perceived difficulty of making a 'mark'. These images influenced short-term operational considerations (tactics) regarding specific crimes in specific places.

The Chicago School of sociologists were the first to identify the importance of the juxtaposition between areas of criminal (delinquency) residences and criminal opportunities eg, districts zoned for industry/commerce (Burgess, 1916; Shaw & McKay, 1931). Current understandings are similar. The Brantinghams (1991/b) confirm that individuals move through the opportunity map to sites where opportunities match their criminal intentions.

- **social malaise indicators**

Coleman (1985) derived a 'disadvantagement score' (the inverse of quality) for evaluating housing in terms of design characteristics, and measured the incidence of social malaise occurring in each configuration.

15 design parameters were considered
Size variables: dwellings per block; dwellings per entrance; storeys per block; storeys per dwelling;
Circulation variables:
overhead walkways; interconnecting exits; vertical routes; corridor type;
Entrance Characteristics:

15

entrance position (facing public street); entrance type (communal only); building on stilts or above garages;

Features of *Grounds*:

spatial organisation (single-block or semi-public multi-block); blocks in site; access points, play areas.

Coleman evaluated 729 blocks of flats (Carter street division, Southwark) and using 1980 crime figures, showed that burglary, juvenile arrests, theft, criminal damage, bodily harm, sexual assaults and robbery (in that order) increased as the disadvantagement score increased.

- **wayfinding/legibility**

* where rooms, colleges, buildings, quads, roads and domains are prominently named & numbered, maps are strategically located at all entrances and throughout campuses, and territorial cues such as *landmarks* (Lynch, 1960) are built-in, a sense of legibility can be generated. This ability to find one's way easily around a campus (or the interior of a building) can add to one's sense of security.

- **legibility or building semiotics**   (language of space)

* is a building or place what is seems to be? *ie* can users (legitimate and illegitimate) associate its function with its style/form, thus know how to act 'appropriately'. Do colleges look like residences, and is this important?

Whether semiotics are important in the decision making processes of criminals has not been researched, but it seems likely that function will outweigh form, and sense of community and commitment will outweigh physical features in their estimations of situational contingencies.

In conclusion:

An analogy between human beings and safe-places seems apt. If we were to take a human being and line up all his/her organs and vessels in a line what we would have would <u>not</u> be a human being. Moreover, searching for a mind or soul would be fruitless. Quite clearly, the whole is greater than the sum of the parts. To be human, thus, assumes intricate relationships between the parts, and between the being and its environment. This represents the macro-scale of situational contingency. At the same time, should one tiny tube in the human system block, or rupture, or one valve fail to open or shut, the entire macro-system can disintegrate.

The importance of the micro-scale to the systems functioning is no less critical than the functioning of the macro-system.

Unless all factors are taken into consideration, there will be a strong likelihood that unforseen micro and macro-issues will thwart the best laid intentions of environmental criminologists and environmental psychologists.

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