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Crime Placement, Displacement, and Deflection

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ABSTRACT

Patterns of crime should be seen as the outcome of crime-control policies and the distribution of opportunities. Such crime-control policies are often argued to have the limited effect of displacing crime, that is, substituting new crimes for prevented crimes. Displacement alone is an inadequate concept; a better formulation centers on the deflection of crime from a target. Some patterns of deflected crime can be regarded as "benign" displacement, while others are considered "malign." Thus conceived, deflection can be used as a policy tool to achieve a more "desirable" pattern of crime. It is already so used, inter alia, by insurance companies with a commercial motive. Better information systems are required to show displacement or deflection, and to assist in monitoring the distribution of crime through space and time. Patterns of criminal activity and victimization can be conceptualized as an outcome of conscious and unconscious decisions by the public, politicians, and the police. These patterns are not immutable, and alternative policies, incorporating an understanding of crime deflection, could lead to new, more equitable, patterns of victimization.

Crime patterns take the form they do because of a combination of circumstances: offender motivation, the absence of legitimate routes to personal satisfaction, the availability of vulnerable targets, the degree of preparation and investment required to commit different crimes, and

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the perceived consequences of crime commission. These are the headings under which lie the common explanatory variables of criminology. Acting together, the factors yield a pattern of offending that shifts in response to changes in any or all of them.

This essay examines "displacement," the usually unintended effect of crime-control programs, by which efforts to prevent one kind of crime sometimes lead would-be offenders to commit a different kind of crime or the same kind of crime at a different time or place. Many evaluations of crime-control innovations conclude, or suggest, that displacement has reduced or eliminated apparent crime-reduction effects of the innovation. Thus, displacement is generally seen as a frustrating side effect. Displacement can, however, be seen as a predictable effect of specific policies and, accordingly, as a manipulative tool of crime control.

Here is how this essay is organized. Section I elaborates on the concept of displacement. It is suggested that the term "deflection" better characterizes the situation in which a specific target is protected from victimization. The pessimism induced by the extreme assumption, that all crime is displaced by "preventive" action, is discussed. Section II develops an argument that, while total displacement can never be discounted, the real question of interest is how displacement could be used purposefully to create an "optimal" distribution of crime and offers illustrations from the literature of "benign" and "malign" forms of displacement. Section III describes speculative accounts of how displacement may be expected to occur, outlines criteria by which some kinds of displacement might be regarded as preferable to others, examines current differences in levels of victimization at the aggregate and individual levels, and discusses problems in the measurement of victimization. Section IV presents a conceptual model of possible distributions of crime, proposes a form of measurement for the inequality of crime victimization, and presents criteria according to which displacement/deflection should be measured. Section V elaborates the conclusion which lies at the center of this essay, that crime displacement/deflection should be conceived as a tool of crime-control policy rather than as an unwanted constraint on crime-prevention program success.

I. Prevention, Displacement, or Deflection

When a target of criminal opportunity is blocked, the would-be offender does something else. This alternative may lie within the law. If

it does, the result is typically known as "crime abatement" or "desistance." If it lies outside the law, the result is known as "crime displacement." Thus, an individual's shift in intention from burglary to check fraud is defined as crime displacement. Shifting from burglary to mowing the lawn is an example of crime abatement.

Hakim and Rengert (1981), following and modifying Reppetto (1976), identify five types of crime displacement: *temporal*—doing the intended crime at a different time; *spatial*—doing the intended crime to the intended type of target in another place; *tactical*—doing the intended crime using a different method; *target*—doing the intended type of crime to a different type of target; *crime type* or *functional*—doing a different type of crime from that intended.

These types of displacement are, in principle, measurable by changes in victimization experience and offender self-report. A sixth type of displacement, never described as such in the literature, is substitution or *perpetrator displacement*. Here, a crime opportunity is so compelling that different offenders are always available to commit the crime. The most obvious example of this type of displacement is international drug trafficking. Remarkably high profits appear to produce an inexhaustible supply of willing couriers. The crime is displaced from offender to offender but is committed repeatedly.

Since each of the types of displacement covers many possible courses of action, the ways in which crime displacement can occur are indeed varied. While an appreciation of crime displacement seems central to understanding crime patterns generally, it has been brought into play as an explanatory device almost exclusively when crime prevention is under discussion. Its invocation has served to limit the attractiveness of crime prevention measures. Cornish and Clarke (1986, p. 3) refer to the assumption of total displacement as inducing a "paralyzing extreme-case pessimism." Heal and Laycock (1986, p. 123) opine that "there is little point in the policy-maker investing resources and effort into situational [crime] prevention if by doing so he merely shuffles crime from one area to the next but never reduces it. For this reason, the possibility of displacing crime by preventive intervention is a crucial issue for the policy-maker." Svensson (1986, p. 122) concludes a review of crime prevention in Sweden by emphasizing that "in particular, we need to ensure that situational prevention does not merely displace offending in time or space." Heal and Laycock (1988, p. 239) note that "the argument most frequently levelled against prevention, particularly 'situational' prevention, is that it will displace crime from one setting to the

next, or from one type of crime to another. If this is indeed the case, the limits to prevention are considerable." Trasler (1986) takes the view that we are a long way from understanding patterns of crime switching in ways that would facilitate the assessment of crime displacement. Cornish and Clarke (1986, p. 2) write, "Tentative and anecdotal though much of the evidence for displacement undoubtedly is, the concept . . . alerts the policy-maker to the possibility that a range of unanticipated consequences may attend novel (or ill-considered) crime-control policies."

Experience in mounting crime-prevention initiatives shows that skepticism about their worth is often and frustratingly based on the presumption of total displacement. Since there is no such thing as free crime prevention, the presumption of total displacement, with its associated cost considerations, will usually triumph over the wish to prevent a particular crime in a particular place. Most galling is the frequency with which extreme-case pessimists are to be found among police officers whose confidence about the crime-reduction effects of patrolling choices has failed to be justified by research. For the extreme-case pessimist, installing better locks on a type of car merely displaces theft to other types of cars. Increasing controls on the availability of one category of firearm increases the use of other kinds of weapons in crime.

We should add that although we have often heard police officers expound extreme-case pessimism, it is difficult to imagine such an argument ever being used as a reason for not responding to the concerns of community leaders. Neither can we envisage a politician standing before a group of voters and denying money for a crime-prevention initiative on the grounds that the crime would simply go somewhere else to happen. Personal lobbying and political influence are to be counted among the factors making for a particular crime pattern.

Displacement, then, is discussed as a limit on the efficacy of crime prevention. In the gloom that attends such discussion, it is too readily forgotten that for a crime to be displaced, it must first be unplaced; in other words, that a crime at a particular place and time must have been prevented. The word "deflected" gives a better sense of the achievement at the heart of the process. It also has the advatage of presuming nothing about the extent to which crime goes somewhere else to happen.

Extreme-case pessimism is, with some difficulty, an arguable position. However, as an argument against crime prevention programs, it reflects an excessively narrow view of displacement. It focuses only on

changes as requiring explanation, and a restricted set of changes at that—those that are introduced with an explicit crime-prevention purpose. The basic error made about crime displacement is to conceive of it as an explanation of change but not of the status quo. It is almost as though a snapshot of crime represented a state of nature with which people tamper by the introduction of crime-prevention initiatives. The premise stated earlier is that any pattern of crime can be thought of as the distribution of people and places from which crime has not been displaced. The observed pattern is a temporary product of a particular set of physical and social arrangements. Crime patterns at any time are frozen displacement patterns. Displacement is but another placement. Bennett and Wright (1984, p. 264) comment, "In a sense, the offender is continually being displaced from one potential target to another until he finds a suitable opportunity to burgle."

The distribution of crime can be likened to that of iron filings held in a magnetic field. Change the field and the filings are rearranged. As magnets create a force field, so do policy and practice create a crime pattern. As we choose a field by positioning magnets, so do we "choose" a crime pattern by selecting particular policies and practices. This is well illustrated by Cook (1983) in his discussion of the complexities that attend apparently simple changes in law and practice. For instance, increases in enforcement directed toward suppliers, middlemen, or consumers of stolen goods or drugs will produce corresponding or compensatory changes in the other actors in the chain. Increase drug price, and habit-feeding property crime will probably increase. When enforcement of taxation becomes more stringent, embezzlement may substitute for tax fraud. Someone forgets to switch off a bedroom light, and a burglary is moved down the street.

The appropriate response to the complexity of determination of crime patterns should not be supine acceptance that the distribution of crime should be what we observe it to be; this is precisely what happens when discussions of crime displacement are restricted to the negative evaluation of crime-prevention initiatives. We must not be content with the notion that crime, like economic well-being, is the product of a hidden hand with whose movements we interfere at our peril. Rather, we should ask ourselves what kinds of crimes, perpetrated against whom, would we most like to prevent? Such a question does not admit of a sensible, unqualified answer. Most answers would be conditional on assumptions about displacement patterns. A daytime burglary should be prevented or displaced so long as the displacement was not to

armed robbery or to burglary at night. Rape prevention or displacement would be desirable as long as it did not become murder. Displacement to other crimes would be regarded with relative equanimity. Prevention of armed robbery at the cost of an increase in tax or welfare fraud may come into this category. Displacement from domestic to nondomestic burglary may also be regarded as something short of a disaster.

In one sense, a crime displaced is a crime prevented. A chosen target is, through displacement, protected from crime. Crime displacement or deflection is one of the consequences—welcomed, tolerated, and suffered in varying extents—of any change in our way of life. Certain forms of consequence will be regarded as unacceptable and the choice reconsidered. Absent those consequences, the choice will be vindicated. Seeing displacement in these terms limits the scope of relevant measurement and makes that measurement possible.

The story (which, lacking freedom-of-information legislation, we should regard as apocryphal) is told of a Western European Minister of the Interior, who was briefed by a senior civil servant about the phenomenon of displacement. He was advised that preventing a major crime in one place might merely move it somewhere else. His reply was, "Try to displace it as far as the border." The notion that some displacement is good is implicit in many practical crime-related contexts. For instance, companies preyed on by their employees through sophisticated computer techniques are alleged to be reluctant to prosecute (Scholberg and Parker 1983). While this reluctance may be put down to the fear of being made to look foolish, another component could be the preferability of allowing the predator to go to work with a competitor that might result in even larger losses to the host company.

Less speculatively, the insurance industry is explicitly concerned to displace hazardous business to other insurers. In the aggregate, the insurance industry is concerned to shift such business out of the insured segment of the market altogether. Roger Litton is the director of an insurance brokerage who took time out from his work to complete a doctorate in criminology. His thesis detailed the relation between crime prevention and insurance practice (Litton 1986, 1990). His probably unique combination of expertise makes his discussion of displacement worthy of close attention. He writes, "Individual insurers attempt to create displacement by shifting losses from properties which they insure by stipulating requirements for crime-prevention devices. . . . If all insurers are taking similar action, then criminals will find easier pickings among those risks which are not insured. . . . If displacement

can be shown—or presumed—to occur it would be rational for [insurers] to encourage such displacement even if the total volume of crime were not to be thereby diminished" (Litton 1986, pp. 256–57). Litton could have gone further to state that, for the insurer, from a perspective of narrow economic self-interest, displacement is actually preferable to crime prevention because a high level of crime is helpful in justifying commensurately high premiums and adding plausibility to advertising that argues the need for insurance protection to be bought.

A further displacement sought by insurers is the movement from large to small losses. "Insurers are concerned with making an overall profit, and therefore large potential losses are of more importance to them than small ones. They will thus be more concerned to prevent the large loss than the small loss and will direct their priorities accordingly. . . . To the other parties, however, whether police or victim, a crime is a crime is a crime. Thus the unit of accounting for insurers is the pound sterling, dollar, or whatever, whereas for the police the unit of accounting is the crime" (Pease and Litton 1984, p. 191).

There is some evidence that rates of crime do track insurance or other attention to some sectors of the market. For example, in the United Kingdom during the 1970s, insurance attention to the protection of commercial risks was closely followed by an increase in losses due to domestic burglary (see Litton 1986, 1990).

II. The Link between Crime Displacement and Crime Prevention

Cornish and Clarke (1986, pp. 2–3) discern the conceptual roots of displacement in drive theories of motivation, "which depict behavior as being largely governed by the necessity of reducing tensions created by an organism's internal needs." Crime-control strategies concentrating on target protection "could expect little real success, since they would merely influence the mode of expression of the offender's internal drives or predispositions without in any way tackling the underlying conflict or frustration which continued to energize and motivate offending." Dissatisfaction with the implication that crime control can be achieved only through changing hearts and minds led Ronald V. Clarke and Derek B. Cornish (1985) to the development of situational crime prevention and, through that, to a rational-choice perspective on offending.

A first step in the move away from drive theories of criminality was to demonstrate that a form of behavior, for which motivation can be presumed to be high, can nonetheless be prevented. To that end, much

time has been spent over the last decade demonstrating that the aggregate rate of suicide falls when one convenient means of taking one's life (e.g., toxic gas) is denied (see Clarke and Mayhew 1988). This is a powerful demonstration that displacement is not total in circumstances where it would be plausible to regard total displacement as likely. Killing oneself is a major decision. Burglary (say) is less so. If the decision to kill oneself is reversed by the nonavailability of toxic gas, then the decision to commit burglaries should be even less robust in the face of obstacles.

The gas suicide story is indeed a powerful argument by analogy, but it is only an argument by analogy and will therefore not be compelling to the extreme-case pessimist. The analogy is imperfect in that the would-be suicide wants to be dead. The would-be burglar probably does not want to commit burglaries as an end but only as a means to being richer. The suicide event is the end of the road. If someone chooses to commit suicide, and follows through, a death results. If there is no such choice, there is no such death. If someone chooses to commit a burglary, and follows through, the event is a burglary. If no such choice is made, there still may be a crime. In short, for suicide studies, there is no alternative end state of relevance. In crime displacement there is. A prevented burglary in a house in Kansas City can change into a burglary of a house in another area, a burglary of a factory or an office, theft from a shop, drug sales, or check fraud, to name but a few. If some burglars choose each of these options, the displacement will be invisible since the crimes will merge into the background variation in the rates of these offenses. Crime displacement can never be conclusively shown not to have occurred in the way that suicide displacement can.

It is important to assert early that we do believe there to have been many instances of crime-prevention programs in which displacement has not been total. However, we believe that the important problem is not whether crime displacement is total but how displacement or deflection can be used to achieve a spread of crime that can be regarded as equitable. For this purpose, it is often helpful to argue as if the extreme-case pessimist were right because he can never be conclusively proven wrong.

A. Illustrations of Benign Displacement

Our major thrust is the recasting of the concept of crime displacement. While it has been thought of as an obstacle to crime prevention,

it should rather be considered as a tool with which to work toward distributive justice. Therefore, rather than review the literature on crime displacement, we will use some of that literature to point out that, in some cases, even with a presumption of total displacement, an argument could be made that the redistribution of crime achieved is socially desirable. An apology should be recorded here for the preponderance of U.K. research cited. This is because of a combination of availability and confidence. As will become clear, displacement aspirations and plans are bound to rely substantially on local patterns and priorities.

The acknowledgment that displacement can be benign is not original, having been anticipated by Brantingham (1986). Toward the end of a chapter on trends in crime prevention, she notes, "Displacement is always a possibility, and while the displacement of crime through a planning intervention has target-specific value, it has no overall value unless it takes the form of displacement from more serious forms of criminal behavior to a less serious form" (1986, p. 111). However, Brantingham does not pursue the implications of the argument. She does not specify the kinds of displacement that should be examined in different prevention contexts. Nor does she consider the possibility that displacement to crimes of the same seriousness inflicted at other times and places may still represent a net social gain.

1. *Gun Control.* The issue of displacement is central to the bitter argument about the merits of gun control legislation. In essence, the question is whether murderous intent is translated into murder using whatever weapon comes to hand (total tactical displacement) or whether the weapon facilitates greater harm than would have been inflicted in its absence. Morris and Hawkins (1970, pp. 71, 84) entertainingly dismiss the former argument as follows: "Particularly from . . . 'sportsmen,' we must never tolerate the argument that if the murderer lacked a gun, he would kill in some other way. If they believe that, they should, on the grounds of sportsmanship, throw away their guns and club the deer to death, knife the bears, and poison the ducks." This aptly provides a reductio ad absurdum of the argument as it applies to hunting but has proven less conclusive in relation to violent crime.

As recently as 1983, Philip Cook decided that he could reach no conclusions on the effects of gun law and enforcement policy on rates of violent crime, preferring to speak of a "shopping list" of the research that would enable conclusions to be reached. A similarly circumspect

review is that of Bordua (1986). In response to the tactical displacement arguments about gun control introduced by Wright, Rossi, and Daly (1983), Zimring and Hawkins (1987, p. 17) can respond only with circumstantial evidence about the greater effective lethality of intent: "A greater percentage of knife attacks than of gun attacks resulted in wounds to vital areas of the body—such as the head, neck, chest, abdomen and back—where wounds were likely to be fatal. Also, many more knife attacks resulted in multiple wounds, suggesting that those who used the knife in those attacks had no great desire to spare the victim's life."

The obvious riposte from gun control opponents would be that a process of danger compensation is operating; a change in the level of danger inherent in the equipment leads to a compensatory change in behavior to maintain the same degree of threat to life (see Cook 1986). Accordingly, sublethal intent is consistent with a greater degree of knife damage than gun damage and is accurately reflected in weapon use.

The nearest thing to a conclusive analysis appeared, perhaps strangely, early in the debate. Zimring (1972) presented data that strongly showed that the likelihood of death in a violent encounter was directly related to the lethality of the instrument of violence even when the context was controlled for. In domestic assaults, for example, fists deal death less often than knives, which do so less than small guns, and so on through the ballistic ratings of firearms. Further suggestive evidence favoring the view that weapon potential is a factor in harm inflicted comes from the repeated references in witness accounts of mass slayings that, at least for part of the time, the shooting is said to be indiscriminate. Indiscriminate use of a weapon relies on the potency of that weapon for its impact.

We thus have a situation surrounding gun control where the evidence suggests that harm inflicted does depend, to some extent, on the nature of the weapon used. However, let us assume that harm inflicted does quite precisely reflect harm intended, so that efforts to reduce criminal violence by gun control policies would be thwarted by tactical displacement. There is, nonetheless, an argument to be made that gun control would have benign effects. Zimring and Hawkins (1987, p. 60) note, "A survey of all U.S. adults in 1978 . . . found that four percent of the respondents had been involved in a handgun accident, half of them resulting in a personal injury. Ten percent reported that a family mem-

ber had been involved in such an accident, and fifteen percent reported a similar experience for a close personal friend." They also note 900 deaths in which firearms were accidentally used in the home in the United States in 1978. Whereas crime displacement makes sense, accident displacement does not. It is difficult to contend that if you do not have a gun to play with, you might kill yourself with a pool cue.

One could develop the argument. If you want to harm someone and have to work harder to do so, superior strength is a great advantage; so the option is not available to the unarmed puny predator. Further, the time taken to achieve the same end will be greater, giving more opportunity (in public confrontation) for help to arrive. Here, then, is an instance where total displacement, if it occurs, is nonetheless more likely than not to be benign in its consequences.

2. *Car Security.* In a pioneering study, Mayhew and her colleagues (1976) examined the effect of legislation requiring the installation of steering column locks in new cars. Their introduction did seem to displace crime to older cars, which were not fitted with such locks. "A main finding of the present study is that although steering column locks have substantially reduced the risk of cars fitted with them being illegally driven away, they seem also to have the effect of redirecting thieves to cars without them" (Mayhew et al. 1976, p. 17).

The study found that the total number of cars taken was virtually identical, with only the proportion of new and old cars differing. Although there was no preventive effect, was the change without value? It was not. Three outcomes of a car theft are possible. First, the car is not returned, or is returned so damaged that it is written off by the insurance company. In this case, the values involved after the introduction of the legislation are smaller than they would have been had new cars been taken. Second, the car is returned with some damage. In this case, the values are also self-limiting because of the lower ceiling at which older cars are written off. Third, the car is returned undamaged. For this category, there is no greater loss than if the car were new (perhaps less because the scope for insurance fraud by attributing previously incurred damage to theft will be smaller).

While somewhat money-oriented and unsentimental, the approach taken suggests that total target displacement of the kind achieved is not necessarily worthless.

3. *Domestic Burglary Prevention.* Allatt (1984) showed that an area of public housing that had undergone a major program of "target hard-

ening" exhibited a reduction in domestic burglary. However, she considered the extent of displacement to other property crimes within the area and to burglary in an adjacent area. The increase in other crimes within the target area and in burglary in the comparison area led her to conclude that there was a "total saving of 29 crimes" (Allatt 1984, p. 110). She acknowledges, however, that she did not measure crimes other than domestic burglary in the comparison area; the numbers are such that the twenty-nine crimes claimed to have been saved could easily have been deflected into other forms of crime. Allatt's study is unusual in the scope it allows for extreme-case pessimism.

Other studies typically measure displacement that is partial and often slight. Forrester, Chatterton, and Pease (1988), studying a run-down area similar to that investigated by Allatt, found that a package of target hardening and social measures yielded a 60 percent reduction in domestic burglary. Measuring property crime throughout the rest of the police subdivision in which the area was situated showed a degree of displacement that could account for no more than one-quarter of the reduction. This is a typical finding of burglary-prevention programs on both sides of the Atlantic (see, e.g., Wilson 1978; Gabor 1981; Bennett and Wright 1984; Laycock 1985).

However, as noted earlier, none of these studies will persuade the extreme-case pessimist. Nor is it necessary that they should. The important question is, assuming total displacement, Could the distribution of crime be regarded as preferable after the implementation of crime-prevention programs? In the cases of the Allatt (1984) and Forrester, Chatterton, and Pease (1988) studies, if even distribution of crime is to be desired, the answer must be "yes." The estates (large, public housing areas) were chosen for their high rates of burglary victimization. In the latter study, one in four households was victimized in a given year. In both, the high rate of victimization was one of the reasons for the choice of the area in the first place. As long as there was no evidence of malign displacement elsewhere, the programs were, on a particular view of optimal crime distribution, entirely defensible. Insofar as crime fear is reduced in burglary-prevention programs (the data on the point are mixed), a net social advantage may be gained.

4. *Police Patrol.* A variety of experimental studies have now been carried out on the effects of police patrol. In brief, little if any change in rates of crime has been reported (Kelling et al. 1974; Kelling, Wycoff, and Pate 1980; Police Foundation 1981; Kelling 1988). At best, then, we may assume total spatial or temporal displacement inside an area as

a result of patrol differences within the range studied. It is, of course, possible that there was no effect. In either event, what does stand out from the research is that citizens noticed the changed patrolling, and that, more often than not, they became less concerned about crime problems. This was not a universal effect. For instance, Kelling et al. (1974) showed that commercial interests became, in some respects, more concerned. Nonetheless, total crime displacement with a reduction in crime concern and no serious consequential costs may yield a net gain.

B. Malign Displacement

Malign displacement occurs when crime changes in ways that are deemed to be socially undesirable. The question of what constitutes undesirable change is itself contentious and is addressed later. Instances here are restricted to cases where, if displacement were total in the ways described, then, intuitively, things have gone from bad to worse. In fact, within the limits of our search, it has proved impossible to locate a well-designed study which persuasively identifies malign displacement. This is because the kinds of crimes that are measured to estimate displacement are typically similar in seriousness to those prevented. To identify malign displacement, one needs to identify crimes committed that are more serious than those prevented. The examples of possible malign displacement instanced below are, therefore, inconclusive.

Letkemann (1973, p. 89) relies on criminal informants' accounts of displacement. "The development of night depositories coincided with complex burglar alarm systems. . . . My informants agreed that these technical developments have left only the most skilled criminals operating as safe-crackers. Alarm systems and the credit card systems have discouraged the burglary of major business establishments; banks, for example, are seldom burglarized today. For this reason, say my informants, the burglary of business establishments has given way to armed robbery."

Brantingham and Brantingham (1984) suggest, without stated evidence and in passing, a possible displacement from pharmacy burglaries to pharmacy robberies as nighttime security of restricted drugs is increased. A similar possibility is presented by Laycock (1984). She showed that after pharmacies had been "hardened," they showed much lower rates of burglaries in which controlled drugs were taken. Two percent of protected pharmacies suffered such a crime compared with

14 percent of unprotected premises during 1981. At least a proportion of these burglaries could have been displaced to become robberies of pharmacies; although, based on the available figures of recorded robberies, robbery could have accounted for, and thereby offset, perhaps 10 percent of the reduction. Since robberies were not disproportionately experienced in hardened pharmacies, as might have been anticipated, this estimate could be overstated. Thefts of drugs from doctors' cars and hospitals and offices over the same period increased so that total displacement (combining all three categories of diverted crime) is possible; this makes the highly implausible assumption of a stable number of drug users over the period. Whether the pattern constitutes malign displacement depends on one's view of the relative seriousness of burglary, robbery, and theft from cars. Taking robbery as exceptionally serious, the Laycock (1984) study could arguably represent an instance of malign displacement.

Ekblom (1987*a*) shows that target hardening can reduce robberies on sub post offices (shops franchised to offer a restricted range of postal services). Unfortunately, there was a parallel increase in raids on vans delivering to sub post offices so that it was impossible to demonstrate that displaced robberies had not occurred. Further, on questions of displacement beyond the post office, Ekblom (p. 21) argues that the issue turns on "the extent to which robbers fit the stereotype of the determined professional who . . . will ruthlessly seek out other targets if baulked in his choice." In brief, Ekblom's study allows the interpretation of total spatial displacement. The desirability of this change turns on the dangers presented to members of the public by robberies inside as opposed to outside shops. The change is arguably malign.

Ekblom's study is a good example of the advantage held by the extreme-case pessimist. Although it demonstrated a specific crime reduction, it was unable to indicate the range of targets of possibly displaced crime. It was eventually reduced to arguments about criminal stereotypes. At this point, the extreme-case pessimist would have won the argument.

In another study, Chaiken, Lawless, and Stevenson (1974) report that a police crackdown on subway robberies in New York City was associated with an increase in street robberies, providing another possible instance of malign displacement. In England, the Home Office (1986) noted generally a movement to robbery of cash in transit, when places that keep money are hardened.

Taken together, these studies show the diversity of research on dis-

placement, both benign and malign. They also indicate some of the difficulties with demonstrating whether crime displacement has occurred. Some writers go beyond the attempt to measure or infer displacement and generate sophisticated accounts of how displacement may occur, and we turn to them next.

C. Directions of Displacement

Brantingham and Brantingham (1984) present a classification of burglar types and the patterns of crime displacement to which they will be prone. They argue, "We do not yet know enough to make firm statements about what will happen when a crime-prevention program is introduced, but we can logically deduce some patterns that may hold by looking at characteristics of burglars" (1984, p. 84). The features of burglars that they take to be relevant are time commitment to burglary (full- or part-time), age, commitment to burglary as an economic activity, and orientation (or otherwise) toward specific goods. For instance, adult burglars with low commitment are seen to have only a low level of likelihood to displace their crimes. Adults with high commitment are taken to have moderate potential for geographic displacement and for displacement to other nonconfrontational crimes. All groups but one are taken to have a low potential for displacement to confrontational crimes. The exceptional group is full-time goods-oriented burglars, who are said to have a high potential for displacement to confrontational crimes. With the exception of this group, all the groups have very incomplete potential for displacement to other nonconfrontational crimes.

Taking the Brantingham classification to be correct and confrontational crime to be more serious than burglary, even under extreme-case pessimism, then displacement would not be malign unless a large proportion of burglars were goods-oriented adult full-timers and the possibilities for displacement to other nonconfrontational crimes were in short supply. In all other sets of circumstances, displacement would be neutral or benign.

Heal and Laycock (1986) speculate on the motivational factors that are presumed to lead to a high or low level of displacement. Consistent with Brantingham and Brantingham (1984), they argue that "displacement is more likely to take place where the individual's motivation is sufficiently high to drive him on even when his initial target of criminal activity is well-defended" (1986, p. 124). The missing element in this formulation is the nature of the motivation. Few people, surely, have

ever had the motivation to commit any crime just because it is a crime. The motivation is more specific than that and is likely to restrict the range of alternative targets of displaced crime. In 1988, the same writers refined their position to the following: "Displacement is more likely to occur following a preventive intervention when: 1) the offender's personal motivation or drive is strong; 2) when many alternative targets are available or perceived to be available; 3) where those designing preventive measures fail to take account of the potential for action and counter action; and 4) where low vulnerability targets are in close proximity to highly vulnerable targets" (Heal and Laycock 1988, p. 240).

Clarke (1978, p. 73) likewise takes the view that "the extent to which displacement should be anticipated depends upon the intentionality or purposiveness of the behavior. In the case of young children playing unsupervised, it is perhaps fair to say that the vulnerability of targets itself generates much of the behavior which tends to its destruction. Reducing opportunities for damage in those places where young children play is, therefore, likely to result in reductions in vandalism."

In two recent important works (Cornish and Clarke 1988*a*, *b*), the tendency to displace is considered in terms of the constellation of opportunities, costs, and benefits that attend the potential criminal act. These are referred to as the "choice-structuring properties" of situations and have been worked through in more detail with respect to gambling and suicide. The gambler, for instance, moves to places where his prior behavior can most easily be generalized. The dimensions along which this generalization takes place include amount per play, elapsed time before payment, probability of winning on an individual bet, payout ratio, degree of personal participation, role of luck, and masculine image of the game. Desistance occurs when available games do not fall within the area that he is prepared to generalize. Tolerance for difference is perhaps an individual characteristic.

The possible similarities with crime make the notion of choice-structuring properties a seductive one. Cornish and Clarke make the point that crime is too wide a category to be useful in this context. They cite Tremblay (1986) as one starting point for the identification of choice-structuring properties. Tremblay studied credit card fraud and noted the potential for displacement between credit card and check guarantee fraud and the functional relation between the components of crime that contribute to the fraud cluster (like wallet theft and opening accounts under a false name).

Criminal behavior that transcends choice-structuring behavior (i.e.,

versatility) is characteristic of those people with the worst criminal careers (Farrington 1987). Displacement potential may be greatest when the offenders committing a particular type of crime are the most versatile. This link may allow cross-fertilization between studies of criminal careers and applications in crime prevention. Work on choice-structuring properties of criminal contexts is, in short, clearly an important complement to crime-prevention endeavors.

In summary, insights into the ways in which displacement is likely to occur have been thoughtful and ingenious. Nonetheless, no research on crime prevention has convincingly shown that total displacement does not occur. Nor can this be shown. If, in truth, displacement is complete, some displaced crime will probably fall outside the areas and types of crime being studied or be so dispersed as to be masked by background variation. In such an event, the optimist would speculate about why the unmeasured areas or types of crime probably escaped displaced crime, while the pessimist would speculate about why they probably did not. No research study, however massive, is likely to resolve the issue. The wider the scope of the study in terms of types of crime and places, the thinner the patina of displaced crime could be spread across them; thus disappearing into the realm of measurement error. Even if the degree of displacement were demonstrated in a particular context, problems of generalizability would arise.

III. Choosing Crime

All individuals or groups may be presumed to have preferences about crime displacement. We would rather that our own friends or families were not victimized and care more about this than we do about the victimization of others. We fetch our own children home from school, and only exceptionally escort those of strangers. We install locks and alarms in our own houses, and not in houses belonging to other people. We care little about displacement effects in so doing. When did we last take a door lock off on the grounds that it would decrease victimization elsewhere? Much of the recent thrust of crime-prevention thinking in, to name but a few Western countries, France, Canada, the United States, and the United Kingdom has focused on the role of the community in preventing crime (Hope and Shaw 1988). The extension of self-interested action from the individual to the community level is the common factor in these enterprises. Are there any principles that could apply to choices of crime-prevention measures even if displacement were total?

One of the things we can be sure of is that there is widespread social consensus on the relative seriousness of crimes. This is clear from national victimization surveys in both the United States and the United Kingdom (Wolfgang et al. 1985; Pease 1988). Certain crimes (terrorism, murder, rape, and violent and sexual offenses toward children) are uniformly toward the top of the scale. How should we address issues of displacement from such offenses? Assuming total displacement, for the most serious crimes, these can only be to crimes of an equal level or a lower level of seriousness since the offenses being displaced are the most serious that could be committed. Because displacement could not increase seriousness, and because attention should be given to limiting all opportunities to commit the most heinous crimes, we would argue that considerations of displacement are irrelevant (and would be considered distasteful) when dealing with the most serious crimes.

The picture is more complex for less serious offenses. In brief, our contention is that displacement makes a crime-prevention initiative undesirable when the substituted crimes are as serious or more serious than the displaced crimes, and there is no other reason why crimes in the place originally victimized should be deflected from their target. If there are other reasons why crimes should be deflected, only displacement to crimes that are more serious should serve to cast doubt on the crime-prevention initiative. The perhaps startling implication of this formulation is that the displacement effect should not be sought in similar crimes, but in crimes of similar or greater seriousness—often in crimes of greater seriousness only.

What would constitute legitimate social reasons for acknowledging the success of a crime-prevention initiative that merely deflected crimes of equal seriousness to other times and places? The discussion of this issue must start with a brief examination of extant patterns of crime victimization.

A. Inequality of Victimization by Time and Place

The traditional geographic approach to the study of crime has been to map the places where offenses take place and, to a lesser extent, to map offenders' and victims' homes. The statistical analysis of crime proceeds by aggregating events spatially or temporally. The aim of such analysis is to relate the incidence of crime to crime vulnerability, whether in terms of the physical environment or of areas of vulnerable populations. Once aggregated, such statistics are compared to area characteristics, and "ecological" inferences are drawn (Herbert 1982).

A consistent theme throughout criminology has been that crime is concentrated in particular areas. Felson (1983) gives precedence in the field of crime ecology to Colquohoun (1796) by virtue of the latter's quasi-statistical study of a crime wave in London in the late eighteenth century. Better known is Guerry's (1833) study in France, which mapped convictions for property and violent crimes by area. The twentieth-century tradition of such study is often associated with the pioneering work of Clifford Shaw and his colleagues in Chicago (see Shaw et al. 1929).

Urban-rural differences have consistently been shown in such studies. Enormous differences exist within city areas, with "zones of transition" and "interstitial areas" being terms used to characterize those inner-city areas with high rates of crime. The terms are used to represent the transitory nature of populations there and the areas' intermediate position between the central business district and more stable residential areas. Uneven distribution appears to be a characteristic of crime, however small the geographical unit chosen. Ramsay (1982, p. 23) notes that "this is well recognized by police forces, which have traditionally divided up their areas of responsibility into different beats of varying dimensions. Similarly, manpower is concentrated more in some places or beats than other, quieter spots."

Classification of housing types (associated with area "type") yields massive differences in rates of residential crime (Hough and Mayhew 1985; Hope and Hough 1988). Even within a city-center area, settings for crime are not distributed evenly. In two English cities, it was found that 15 percent of all public houses (pubs) accounted for 42 percent of all disorder associated with licensed premises (Ramsay 1986). In a study of burglary of schools, "some 38 schools (64 percent) had less than five burglaries between 1977 and 1978 including 11 schools (19 percent) which had no burglaries at all. In contrast, 19 percent had 10 or more burglaries each during this two year period. The most victimized school had 24 burglaries" (Hope 1982, p. 8).

Differences between areas in rates of crime do seem to hold up in victimization surveys down to the smallest analyzable level. For instance, Sparks, Genn, and Dodd (1977) showed differences in level of victimization in three areas of London. Kinsey (1984) did the same in Merseyside. Jones, McLean, and Young (1986) showed similar differences within a single London borough (Islington).

In the United States, analyses of official (Uniform Crime Reports) and victimization (National Crime Survey) data show that family struc-

ture, mobility, and opportunity factors had their strongest effect on personal criminal victimization rates in a specific area. Poverty and income inequality were found to be related to official rates of property crime. Property (but not violent) crime rates were positively associated with the percentage of divorced and black people in an area (Sampson 1985). Hakim et al. (1979) and Hakim and Rengert (1981) identify crime spillover between adjacent areas in response to changes in police expenditure, thus suggesting (but not conclusively demonstrating) crime deflection across administrative boundaries.

In their review, Brantingham and Brantingham (1981, p. 10) conclude that "spatial variance in crime remains a fundamental fact requiring explanation." Although somewhat less studied, as it is across space so it is across time, even for short periods. Some evidence exists for offenses of public disorder, where incidents cluster around midnight and late afternoon/early evening (Ramsay 1982).

Time distribution of burglaries is similarly nonrandom by time of day or by day of the week (Scarr 1973; Maguire 1982; Rengert and Wasilchick 1985; Forrester, Chatterton, and Pease 1988; Nee and Taylor 1988), with times of low occupancy consistently overrepresented. Rengert and Wasilchick (1985) structure their analysis of burglaries around the dimension of time and the movements of burglars over time. The type of property taken also varies by day, with cash being taken proportionately more often in midweek (Forrester, Chatterton, and Pease 1988) and luxury goods on weekends. Studies in the United States and Canada have shown that residential burglaries also vary with the phase of the moon (Purpura 1979; Polvi et al. 1989). Offenses of theft from shops (Ekblom 1987*b*) also cluster around particular times of the working day. Murders and other serious offenses of violence are found to be concentrated around particular times (Walmsley 1986). In short, when it has been possible to identify offense time, that time is scarcely ever distributed evenly across the range of the possible. The only exception of which we are aware is the distribution of the times of rape in Minneapolis (Sherman 1989).

Although the distribution of crimes in both space and time is scarcely ever found to be random, caution is required when working with aggregate data. Spatially, it is often difficult to identify meaningful entities to which data may be aggregated. As a result, arbitrary statistical or administrative boundaries are used. This leads to the possible misinterpretation of figures, as it becomes impossible to discern whether crimes are highly clustered in a small part of the unit of analysis or

spread more evenly across it. Further, highly clustered crimes may disappear, statistically, if clusters fall on administrative boundaries so that crimes within the cluster are shared between more than one statistical zone. For both of these reasons, it is more likely that real clusters will be missed than that imaginary ones will be invented. Also because the clusters in victimization surveys can be noticed, however small the unit of analysis, one can be confident of the reality of crime clustering. As for the time dimension, many geographers have recognized that the character of a location and its relationship with other locations varies over time (Lynch 1972; Parkes and Thrift 1980).

B. Individual Differences in Crime Victimization

Some people are victimized more than others. Sparks, Genn, and Dodd (1977) were the first researchers in the United Kingdom seriously to address the issue. National crime surveys, wherever conducted since 1977, have confirmed the same patterns of victimization by age, sex, and social status (Gottfredson 1984). Pease (1988), in a reanalysis of British Crime Survey data, also showed that those groups that suffer most crime are also those that suffer the most serious crime, as rated by victims. It has been demonstrated that the incidence of second or subsequent burglary victimizations is well in excess of the statistically expected rate (Forrester, Chatterton, and Pease 1988). Canadian research has shown that this is especially marked during the month immediately after a burglary, when the observed rate of a second victimization is some twelve times the rate that would be expected if the burglaries were to be regarded as independent events (Polvi, Looman, and Pease 1989). Some automobile models are especially likely to be stolen (Burrows, Ekblom, and Heal 1979). Some shops are especially vulnerable to shop theft (Ekblom 1986). Women vary by age and marital status in their chances of receiving obscene telephone calls (Pease 1985).

Table 1 summarizes data about inequality in victimization gleaned from the British Crime Surveys of 1982 and 1984. It depicts the observed and, assuming a natural random distribution, the expected numbers of people victimized twice or three times in a given type of crime. The observed rate of multiple victimization is several times higher than would be expected for each type of crime. Of course, these differences could be a function of area inhabited, age, and lifestyle (see Gottfredson 1984). Thissen and Wainer (1983) report a preliminary technical study, using National Crime Survey data, setting out to model the probability of becoming a crime victim. Their data show nonindependence of vic-

TABLE 1

Rates of Multiple Victimization:
British Crime Surveys, 1982 and 1984

Offense	*N*	No. of Victimizations			
		2		3	
		Observed	Expected	Observed	Expected
Domestic burglary with loss	21,073	50	8	10	0
Theft from person	21,883	31	4	6	0
Violence	21,834	91	14	43	0
Theft of motor vehicle	15,789	56	12	7	0
Theft from motor vehicle	15,722	270	138	80	7
Criminal damage to motor vehicle	15,634	466	256	156	17
Theft of pedal cycle	9,545	34	10	4	1

SOURCE.—Hough and Mayhew (1983, 1985).
NOTE.—Unweighted data.

timization experience across crime categories. Sparks (1981) distinguishes five possible reasons for disproportionate multiple victimization. They are:

1. *Precipitation.* "A victim who precipitates an offender action does or says something that works on the emotions or passions of the offender to such an extent that he makes the offender act as he does" (p. 772).

2. *Vulnerability.* "Some people . . . are less than normally capable of preventing crimes against themselves. . . . Thus, the very young and the elderly are physically less able to resist violent attack, as are some adult females. The mentally defective, immigrants, and the uneducated or inexperienced are especially vulnerable to deception and fraud" (p. 773).

3. *Opportunity.* This is "of course a logically necessary condition for crime" (p. 774). People with a car, a boat, and a checkbook provide opportunities for car theft, boat theft, and check fraud.

4. *Attractiveness.* "Plainly some targets are more attractive than others from a criminal's point of view. Thus, persons who look affluent are better prospects for robbery than persons who look impoverished;

expensive houses full of durable consumer goods are more attractive to a burglar than tenements in a slum. . . . Some varieties of attractiveness cannot logically be concealed. How do you make a Lamborghini look less like a Lamborghini, for example, by letting it get very dirty or painting it a hideous shade of chartreuse?" (p. 775).

5. *Impunity.* "Some persons are selected as victims precisely because they are believed to have limited access to the usual machinery of social control. Thus, homosexuals are said to be frequent victims of blackmail and extortion because they are thought to be reluctant to notify the police. Similarly criminals, ex-criminals, neighborhood paranoiacs, and members of minority groups may be chosen as victims because they are thought to be unable or unwilling to call the police" (pp. 775–76).

Whatever their origin, there is a case for looking at policy options for the multiple victim. If there is a choice to be made for priorities in crime deflection, there is a case for prior victimization to confer such priority.

C. Measuring Inequality in Victimization

We have contended that the appropriate principle for examination is not whether complete crime displacement occurs, but, if we were to make an explicit policy that accepted the inevitability of a certain level of crime, how we would choose to have crime distributed across time, place, and victims. Such apparently intolerable policy decisions are already taken by certain police forces. For example, a point-scoring system is used to assess the solvability of crimes, and only those offenses that exceed a certain threshold have manpower allotted to them by certain English forces (Leppard 1989). If part of the force's jurisdiction comprises a difficult-to-police area where public cooperation is poor, it would, under this scheme, have fewer, if any, resources deployed within it. Such effectively unpoliced "no-go" areas are reputed to exist in British cities. The police have, in effect, decided that these are areas where a higher-than-average level of criminal activity should be allowed to continue. This decision implies a knowledge of the present distribution of crime.

Ekblom (1988) discusses strategies for the collection and analysis of data on reported crime. In his diagram (see fig. 1), the analysis and interpretation of data lead naturally to devising and implementing preventive strategies. Our approach can provide a rationale for breaking out of the reactive cycle that such a process often implies and could lead

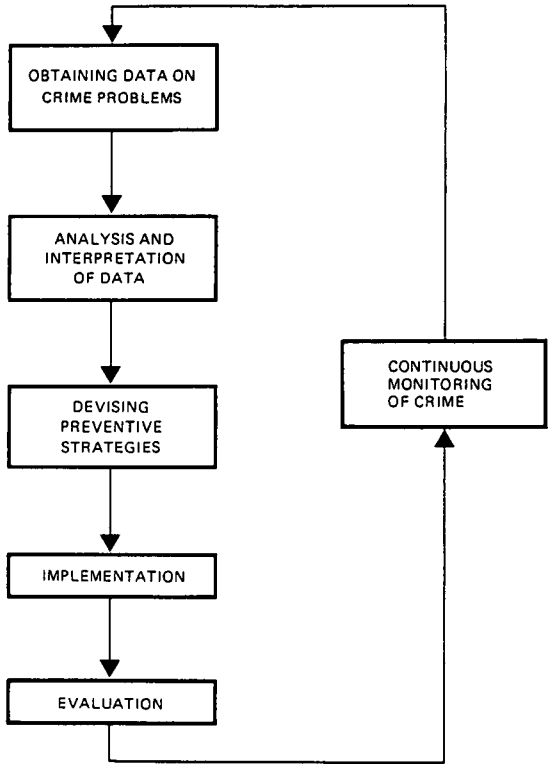

FIG. 1.—The preventive process (after Ekblom 1988)

to a proactive approach. The probabilities of particular crimes taking place in particular locations at particular times would be known on the basis of previous experience. In addition, an explicit policy would exist that would concede that the reduction of crime levels to zero was unlikely to be achieved and that would establish acceptable levels for particular crimes in particular areas. Such policies are implicit in most policing, but in our view an explicit philosophical and technical framework is required to understand the extent to which such policies are adopted and to formulate future policy.

The emergence of powerful desktop microcomputers, with the capacity to store data bases of several million characters and with good graphics facilities for the presentation of data in the form of statistical diagrams or maps, has revolutionized the possibilities for the collection and analysis of crime data. For example, the arrival of "desktop-mapping" programs that are designed for use with standard microbased

data-base software has made automated crime analysis at precinct level routinely possible.

The geographical aspects of such analysis, however, are unsophisticated. Crimes are located by the computer on a base map that is analogous to the pin map on the wall. The main advantage of the computerized system is the possibility of selecting types of crime or time periods and replotting the points on the map. This ability can reveal spatial or temporal patterns that were not anticipated. However, it is more usual to shade areas of the map, corresponding to some operational unit, such as a beat or a precinct. Different levels of shading correspond to aggregated crime levels over some fixed period of time.

Typically the data for such a system are kept in a simple computer data-base file including coded data for offense characteristics such as nature of offense (crime category); location of offense (both site details, e.g., car park or stairway, and locational details, such as the intersection of Fifth Avenue and Thirty-second Street, may be recorded); timing (time, date, day of the week); method (modus operandi); target (e.g., person, car, property); victim (age, sex, home address, etc.); circumstances (lighting, crowding, potential intervenors); success (attempted or completed); cost (amount, to whom); offender (age, sex, home address, etc.); and find location (location where goods or vehicle have been found) (after Ekblom 1988).

Within that selected list of variables, there are a number of geographical references. In addition to the location of the crime, the home locations of both victim and offender and the location where the goods, vehicle, or even body were found may be recorded. These characteristics of the individual crime must be assigned some spatial framework in order to allow us to analyze the geography that underlies the observed patterns of crime and to explore whether spatial and temporal displacements are taking place.

Such a structure was suggested by Berry (1964) who proposed a geographic data matrix. This three-dimensional matrix comprised rows, each of which represents a distinct "place"; columns, which contain attributes of that place; and slices, which reflect the passage of time (fig. 2). Each individual cell within this matrix would contain a single geographic "fact," or item of data. Berry proceeded to use this matrix to demonstrate the range of methods geographers use to analyze spatial relations. Purely descriptive traditional studies concentrated on a limited time period, during which all other characteristics of a place were considered to remain constant and so were limited to a number of

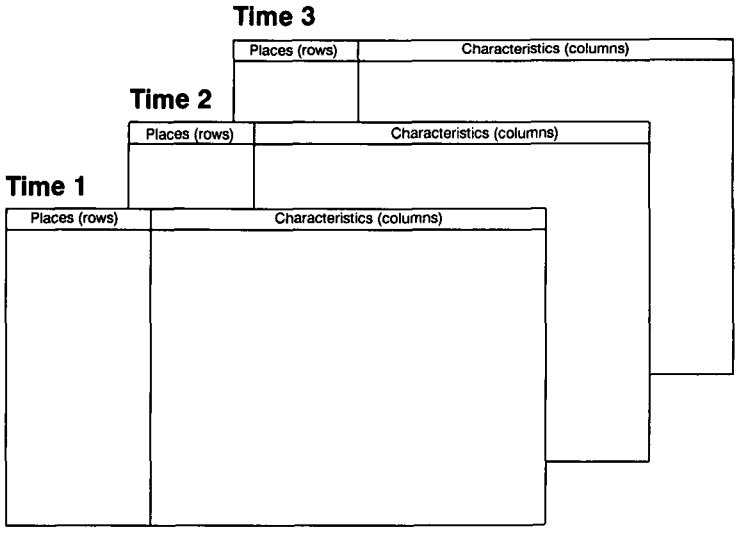

FIG. 2.—The geographic data matrix (after Berry 1964)

adjacent rows in the matrix. In crime-pattern analysis this might correspond to a weekly summary of reported crime by city precinct. Each row in the matrix would correspond to a precinct, each column a crime type, and each cell entry the number of occurrences of the crime in the time period. The principal object of interest here is the geographical reporting unit, the beat, block, or precinct. Repeated returns or crimes over time, in this form, provide the third dimension of time. Such an approach is essentially descriptive rather than analytical and serves mainly to compare one area with another.

The matrix lends itself also to systematic studies. Such studies concern a limited time span but concentrate on a small number of columns (characteristics of place). In the case of crime, a single crime type would be the focus of attention, and its prevalence in each place would constitute one of the columns. This would be treated as the dependent variable. Additional columns would contain further characteristics of the places that might help to explain variation in the prevalence of the given crime. These independent variables might be any characteristics, such as the nature and vulnerability of the population or the physical nature of the places, that could predispose them to the occurrence of that particular crime. Such an analysis lends itself to "ecological" explanations of crime. Where a series of explanatory variables are found to vary with the incidence of a particular crime type, it can be concluded that

those variables *may* account for that type of crime. Such explanations have to be treated with caution, however, as they include no evidence for the relation being a causal one, and it is possible to commit an "ecological fallacy" by attributing a relation that exists at an areal level to individuals. For example, a correlation between the proportion of the population of a set of areas who are members of ethnic minorities and the mugging rates does not tell us whether members of those minorities are the perpetrators, the victims, or even the innocent bystanders in an area where mugging is prevalent.

One avenue of geographical analysis proposed by Berry (1964) worth exploring is the impact that events at one place and time could have on other places later. This approach has been important in such fields as the study of the spread of innovations and other information (Hagerstrand 1952) and in epidemiology where the diffusion of infectious diseases has been investigated (Haggett, Cliff, and Frey 1977). It is equally appropriate to use for looking at movements in criminal activity as long as it is consistent with our liberalized view of the displacement issue.

A problem with Berry's matrix is that place is undefined. As a result, any arbitrary spatial unit for which data are collected is considered to be a place, and it is assumed that the definition of these entities is independent of the phenomenon under study. This will never be the case for official criminal statistics (but could be for victimization data) because statistics will be collected by police districts or other spatial units, making it difficult to discriminate between the characteristics of the "place" and the actions of the police force.

Ideally, for our purposes, an information system would be required that would allow the vulnerability of different people and environment groupings to be plotted. A common device is that of a surface that can be presented as a contour map. One can think of such a surface for all crime or for particular types of crime. Locations with a high number of reported crimes appear as high points. If action were successfully directed at such a high spot, it would be reduced in height. Myopic crime control would look only at high spots. More balanced crime control would consider the surface as a whole. An implausible ideal would be to pull the plug and reduce the surface uniformly to zero. If that is not feasible (as it never is), the question is raised, Which is more desirable, a surface with a few high peaks of vulnerability surrounded by low foothills of relatively safe environments or a plateau of relatively uniform vulnerability?

IV. A Conceptual Model for the Distribution of Crime

Figure 3 represents a way of thinking about crime inequality and the response to it in the form of a triangle. The apex of the triangle represents the ideal state of no crime (uniform surface at zero). The base of the triangle represents the conflict between two possible aims if only the distribution, but not the extent, of crime could be controlled (i.e., total displacement). The left corner represents the socially equitable state of equal exposure to crime victimization (the plateau), in which each citizen is equally likely to become a victim of any type of crime. The right corner represents the "crime-fuse situation" (the high peaks and low foothills). This last term is the only one that is not self-explanatory, although the concept underlying it will be from the discussion of the surface. The term is used as an analogy to an electrical circuit, in which a deliberately weak point, the fuse, is included so that a power surge will have quite minor consequences. Similarly, one can choose to concentrate the crime in particular areas, limiting the number of areas that have to be controlled and making an obvious starting point for inquiries once an event has occurred.

If a state of no crime is the goal, measures are taken against the crime whenever and wherever it occurs independently of victim or location. This objective is the naive crime-prevention goal of political rhetoric. It is, however, difficult to think of an instance where, in practice, all cases of an offense type are attacked with equal enthusiasm.

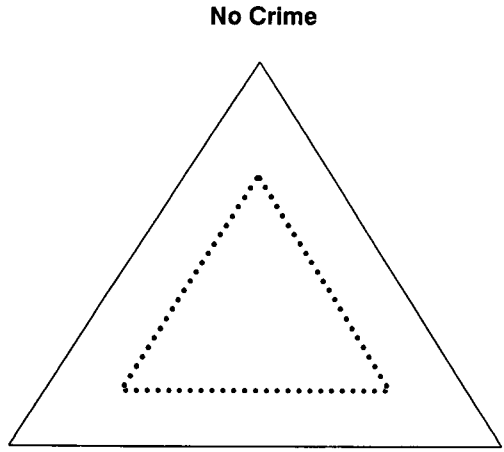

FIG. 3.—Schematic representation of crime inequality

If equal "access" to victimization is taken to be the aim, enforcement emphasis is concentrated on those areas or victim groups suffering disproportionately. In its pure form, this approach would not concern itself with the lightly victimized. In practice, effort would be concentrated on the inner cities and on young males.

Fuses are contentious, but they are practiced. If crime is concentrated in particular areas or at particular times, it is easier to control and to clear and possibly less upsetting to those who know which times and places to avoid. Entrapment is consistent with fuse thinking, even where no offenders are caught. A fuse philosophy would tacitly accept the existence of a place where, for instance, prostitution is rife on the basis that, while women living in such places are subject to much sexual harrassment, the net effect is preferable to what it would be if all women had equal exposure to this kind of victimization. Both men and women at least know the places to avoid. Fuse thinking would not seek to deny licenses to drink from unruly pubs on the grounds that you know where to look for suspected people, while people in other pubs take their ease in relative peace and quiet.

Within the larger triangle is included another with dotted lines. This can be thought of as the realistically achievable range of crime states. Actions may be taken to move crime toward or away from the "fuse" or equal opportunity states. Movement toward equal opportunity would consist in offering protections toward the most highly victimized individuals, times, or places. Movement toward fuses would involve offering protections to those who have not yet been victimized. Movement toward no crime would involve the removal of opportunities irrespective of prior victimization experience.

In fact it would be better to think of the picture as a pyramid. Each section of the pyramid represents one type of crime, but movement of the type of crime currently under consideration would affect the state of affairs for other types of crime. For instance, reduction of domestic burglary would likely involve an increase in criminal damage, if only to the extent reflecting the unsuccessful attempt to force entry.

A massive range of social and physical factors moves victimization experience toward fuse situations. With respect to individual victims, Sparks (1981) lists five factors which we mentioned earlier. Supplementing these are economic factors. Those who can afford to move to areas of low victimization turn those who remain into fuses. Women who can afford private transport thereby make those who cannot into fuses. The whole pattern of crime is a result of forces that pull toward

either the fuse or the equal exposure position. In essence, when we direct policy toward preventing an observed distribution of crime, we are not interfering with a state of nature but are instead injecting policy choices into a situation where the pattern is already determined.

While the fact of unequal victimization is a commonplace of criminology research, its measurement has not been seriously undertaken in any general way; still less have its implications for crime-prevention strategy been considered. This is not true of social geography where the measurement of inequalities between areas is commonplace in order to help devise compensatory policies.

Two measures are generally used. The first is the location quotient, an index measuring the over- or underrepresentation of some phenomenon in each of a number of areas. Perhaps the easiest way to understand the location quotient is to think of it as the number by which the rate of crimes in a particular area would have to be divided in order to bring it to the overall average crime rate for the region being studied. For example, if the national annual rate for auto theft is one in a hundred, a town where one car in fifty was stolen every year would have a location quotient of two. That means the chance of having your car stolen in that town is twice the national average. Or, put another way, the auto theft rate in that town would have to be halved in order to bring it to the national average.

Mathematically the quotient is very easy to calculate:

$$Q = \frac{Xi/Yi}{X/Y},$$

where, for example,

Q = location quotient;
Xi = total number of households burgled in area i;
X = total number of households burgled in all areas under consideration;
Yi = total number of households in area i; and
Y = total number of households in all areas under consideration.

The location quotient is calculated for each area and varies between zero (no burglaries in that area), less than one (a lower than average proportion of burglaries in that area), and through one (exactly the expected number of burglaries if they are equally distributed). Values greater than one reflect an overrepresentation of burglary in the area.

The location quotient allows us to assess the vulnerability of individual areas to a particular crime and is potentially useful in the plotting of our vulnerability surface independently of the absolute number of victims. This is of interest if we are concerned with policies for the adjustment of these vulnerabilities as it relates the propensity of a particular social environment to generate an excess, or to enjoy an underrepresentation, of a particular crime.

However, if we wish to try to calibrate our triangle using empirical data, a summary measure or index is needed that will place each type of crime on the equal distribution–fuse axis. The Gini coefficient is an index of concentration that measures the degree to which a distribution deviates from being equal. It is calculated using the following formula:

$$G = \frac{1}{2} \sum_{i=1}^{N} \frac{100\ Xi}{X} - \frac{100\ Yi}{Y},$$

where, for example,

G = Gini coefficient;
N = total number of areas;
Xi = total number of households burgled in area i;
X = total number of households burgled in all areas under consideration;
Yi = total number of housholds in area i; and
Y = total number of households in all areas under consideration.

A Gini coefficient value of zero corresponds to perfect equality of distribution, a value of 100 perfect inequality (all of that crime type concentrated in one region). Values between zero and 100 measure the degree of concentration of a crime.

The vertical axis of our conceptual triangle can be calibrated by a measure of the prevalence of a given crime. This is calculated as the number of actual victims of a given crime type divided by the number of potential victims of that crime type.

Crime statistics for small areas suffer from serious inconsistencies, as discussed above. Ideally an information system could be devised that would enable us to complete a small subset of the Berry geographic matrix for crime. However, such systems do not yet exist. Large-scale victimization surveys do exist; one such survey is the British Crime Survey, which was carried out in 1982 and 1984 (Hough and Mayhew

1983, 1985). This is a large sample survey that has accumulated, over those two years, some 22,000 responses from members of the general public. The sample is spatially stratified and adjusted for the actual populations living in different types of areas. Although geographical areas are not identified, two variables give us a reasonable surrogate for different types of neighborhood in the British context. These are residential pattern (whether a household lives in owner-occupied, public-sector rented, or privately rented accommodation) and area type, which separates rural, suburban, urban, and inner-city environments.

In Britain, residence patterns are a very strong social-status indicator. The public housing system, run by local government (authorities are known as councils reflecting their elected status, hence such housing is known as council housing), though declining in size still accounts for some 35 percent of British households. Potential council tenants are subjected to stringent needs tests, and council housing is generally perceived to be low-income and low-status housing. The present government in Britain has, since 1979, encouraged a rapid run down of the local authority sector by giving tenants a right to buy their rented properties at a substantial discount. The effect of this has been to remove much of the more desirable public rented housing from local authority control, leaving the larger, less popular housing estates in public hands. In urban areas, large concentrations of council property are associated with areas of low income, unskilled workers, high unemployment, and low car ownership. In the British preoccupation with class, knowing whether a person owns their house, albeit with a large mortgage, is the first, and possibly the most vital clue to their social position. As a result, housing areas are increasingly segregated by status, with council housing and some privately rented property occupying the bottom rungs of the ladder.

The classic Burgess and Park (see Burgess 1927) model of city structure, which differentiates the central business district from the transitional inner-city zone through the zone of workers' housing to the better-off suburban and commuter areas, remains a useful descriptive tool for British cities. Cities are socially differentiated, and, with the exception of London's West End, social status generally increases with distance from the center. Thus the inner city, urban, suburban, rural classification used in the British Crime Survey offers another useful correlate for the types and the social status of neighborhoods in which the victims live. The combination of these two variables, residential

pattern and position on the urban-rural continuum, accounts for much of the social variability that one would expect to find between different places.

It is possible to calculate location quotients, Gini coefficients, and prevalence rates from the crime surveys, and such an analysis gives a useful insight into the potential for, and the possible effects of, distributing crimes more equally, or, conversely, concentrating them in a small number of fuse areas.

We have calculated an overall propensity rate and a Gini coefficient for each of thirty-nine types of crime, dividing crimes against the person from crimes against property. A remarkable result of this analysis is that there is a relatively high correlation between prevalence and concentration for both types of crime. When concentration is plotted against prevalence, a negative J-shaped distribution is obtained in the case of both personal and property crimes. For crimes against property, the correlation coefficient between prevalence and concentration is $-.48$, rising to $-.74$ when a logarithmic transformation is applied to the prevalence scores. (This has the effect of straightening out the J-shaped curve.) A higher correlation between prevalence and concentration is found for crimes against the person, $-.67$ and $-.95$, respectively. If both categories of crime are amalgamated, the correlations are $-.55$ and $-.85$, respectively.

How can we interpret these findings? First we must assure ourselves of the nature of the relation. Prevalence is clearly the independent variable, as it would be a tortuous argument to say that the concentration of crime (a pattern that emerges only after the crimes are committed) accounts for the frequency with which crimes are committed. The second question we need to ask is whether these observations are simply a statement of an obvious relation between prevalence and concentration. At the extremes, the observed relationship is self-evident. The very rare crime will inevitably appear concentrated because it is committed insufficiently frequently to be distributed equally through space, while a universal crime will inevitably appear to be equally distributed because every possible victim or perpetrator will be involved. For example, if Fort Knox were to be broken into, the crime would inevitably appear to be totally concentrated because the opportunity to perpetrate that crime exists in only one place, and a successful robbery would probably be a unique event. If, on the other hand, one were to take the opposite extreme, and

probably unfair, proposition that nobody fills in a tax return honestly, then tax evasion would have a prevalence of 100 percent and would be completely evenly distributed.

However, between those extremes, once the prevalence rate exceeds some threshold, crimes are free to be concentrated or distributed more equally; yet the relations still hold. Over 90 percent of the variation in concentration of crimes against the person is explained by the log of the prevalence. Rare and usually more serious crime is concentrated in a small number of areas—our fuses standing above a plateau of less serious, more evenly distributed crimes. Bearing in mind that this analysis is based on a victim survey and crimes are attributed to the home area of the victim rather than the location where the crime was committed, it appears plausible that many of the recorded crimes against the person resulted from a victim venturing into a hostile environment. This hypothesis is supported by an examination of the distribution of crimes against property. In this case, many crimes against fixed property, such as houses, are concentrated, while the plateau is of crimes related to motor vehicles and other movable property. It appears that the issue in both of these cases is not the displacement of criminal activity to more likely target areas but the very reverse. Victims make themselves vulnerable by venturing from their relatively safe home environments into areas where they become highly vulnerable to crimes against their person or their property.

The consistent pattern that emerges from our analysis is the existence of highly criminalized fuse areas. These usually run-down inner-city areas contain a highly victimized population and present a dangerous environment to the stranger. The "flight from the cities" and the increasing wariness of visitors leads to a displacement of crime toward the local, already highly victimized, population. The standard response to the public outcry about the state of affairs in such areas is often to increase police activity substantially, usually temporarily.

To summarize, we have been at pains to specify how geographic information systems have the capacity to measure crime distribution in ways that succinctly identify the extent and nature of inequality in crime victimization. They thus provide the basis for the understanding and measurement of what constitutes benign and malign displacement in spatial terms. The value position that we take is that crime victimization should not exacerbate inequalities of other origin. On that basis, other things being equal, crime deflection that makes for a more equal spread of victimization is benign. Taken together with earlier conclu-

sions, we would articulate a prescription for the proper measurement of displacement/deflection which incorporates the following elements. For the most serious crimes, deflection is not an issue. It can never be a reason for failing to try to prevent such crimes. For crime-prevention attempts generally, malign displacement would be measured as an increase in offending of equal or greater seriousness against more highly victimized groups or areas. It would, however, be measured only as offenses of greater seriousness outside these areas. In other words, displacement of crime of the same level of seriousness is malign only if it serves to exacerbate inequalities in victimization. It is benign if it serves to equalize them.

Such a formulation would serve to make the assessment of displacement/deflection distinctly different from that currently encountered. However, in its simple form set out above, it will generate anomalies. For instance, since young males are a heavily victimized group, it would take displacement to be benign which transfers crime from young male victims to old female victims, although the impact of victimization is very much greater in the latter group. A more sophisticated version of the approach, in effect a simple extension of it, would involve the measurement of inequality in victimization weighted by its anticipated seriousness. The elements in the assessment of deflection set out above would be unaffected, merely being based on a more sophisticated variant of the notion of victimization.

V. Conclusions

Displacement has been addressed in much of the literature as the degree of successful search for alternative criminal opportunities by individuals thwarted in their pursuit of one type of crime or victim. Our argument is that displacement, which we prefer to call deflection to draw attention to the initially prevented crime, can be seen in a much broader framework where the distribution of crimes and their victims is the end result of a series of choices taken by society as a whole. The prevalent choice of allowing both crime and its victims to become spatially concentrated is not the only choice available. Actions can be taken that will displace crime not only temporally, spatially, and tactically, and to new targets or types of crime as suggested at the beginning of this essay, but also from those currently likely to commit crimes to other potential criminals. Thus conceived, displacement/deflection becomes an issue less concerned with how crime can be prevented than one of how we are prepared to see crime distributed across space and

different groups in society, although we are by no means of the opinion that all deflected crime occurs somewhere else. Once it has been accepted that present patterns of crime can be viewed as a response to the distribution of criminal opportunities and that all such opportunities cannot be eliminated, we must decide whether to continue to share the burden of victimization unequally as at present, or more equally where an acceptable degree of risk is borne by the whole population.

Explicit policies of crime redistribution are clearly difficult for politicians to promote publicly. They address the fears and prejudices of the individual voter who is more likely to be concerned that his risk of being a victim is being increased than with any concept of social equity. Even if that increase is a marginal one, leaving his probability of becoming a victim very low, the individual can imagine only one of two possibilities: he is safe or a crime is committed against him. He is unlikely to be impressed by the aggregate patterns on which our approach is based. For the politician, the Holy Grail of prevention by apprehending criminals and hardening targets is, therefore, taken as the organizing principle for most crime-control programs because it is most likely to appeal to the individual voter's self-interest. If the displacing or deflecting effect of most such actions were to be recognized by politicians whose social conscience extended beyond their own constituencies, a different type of policy might emerge.

Both in Britain and in the United States, cities bear witness to a long-standing preference for relatively extreme versions of the fuse philosophy. Deprived inner-city areas suffer from a very high degree of criminal activity of most types. Such activity can be tolerated by the rest of society for a variety of reasons. It is easy to blame the plight of unsuccessful members of society, both as perpetrators and victims of crime, on their own shortcomings. The problem is localized in an alien culture, and the rest of society feels safer as a result. The police are seen as a valiant army fighting against insuperable odds. Their role in society is enhanced because of their undoubted heroism, while their relative lack of success is excusable because of the size of the task. By contrast, those living outside the fuse areas feel safe and usually are safe.

Let us assume that unlimited resources were made available to apply the whole spectrum of remedies favored by politicians of right or left to the fuse areas. Such remedies might include routine deterrent sentences, massively increasing policing, or martial law, the effective organization of protection for property and individuals through to

wealth creation and income-enhancement programs to offer potential criminals an alternative way of life. Even after such a program, would a consensus be arrived at that the elimination of highly criminalized fuse areas was a desirable solution to the worst excesses of the crime problem? The elimination of fuse areas is only likely to prove attractive if two conditions are satisfied; the fuse areas must be perceived to impinge on personal quality of life or civic pride, and it must be presumed by most citizens that the elimination of fuse areas would not materially detract from their own quality of life. For instance, areas of active drug dealing may be seen to attract your own children and may cause the inconvenience of avoiding fuse areas while traveling on foot. So long as you do not believe that people will be dealing on *your* street if moved on, elimination of the fuse may be favored. We contend that the circumstances under which both conditions are satisfied are likely to be rare and may be limited to drug-related crime and prostitution. With these exceptions, we believe that society may have a vested interest in containing most activity within a limited geographical, temporal, and opportunity space. Most attempts to alter the opportunity surface would threaten that interest.

Crime displacement or deflection is an idea that is valuable not only for the planning of specific short-term strategies, but because it illuminates the choices that have been made which lead to the present pattern of crime. Alternative choices exist, but the will to exercise them probably does not.

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