Crime in Public View

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Foreword

It has been said that crime might be prevented by encouraging people to intervene more frequently when they see crimes being committed; and indeed that crime might also be prevented by increasing the chances of witnessing such crimes in the first place. The authors of this report, however, argue that the opportunities for increasing the impact of surveillance by the public are limited, although something might be achieved by increasing the likelihood of crime being seen by those members of the public—residents and employees—most predisposed to intervene.

These arguments are presented in the first chapter. The empirical studies reported in the second and third chapters examine, respectively, aspects of surveillance by residents and employers. The findings of the first study suggest that surveillance by householders affords only minimal protection to telephone kiosks, and that there is limited scope for exploiting the effect further. The results of the second study, which examines—in four London Underground stations—the consequence of introducing closed circuit television operated by railway staff, indicate that crime may have been reduced by this means, although the possibility that some thefts were displaced to nearby stations cannot be ruled out.

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Chapter 1: Surveillance and the public

People usually try not to be seen when committing crimes. Thus burglars avoid occupied houses and crimes which occur in public space tend to be committed surreptitiously (pickpocketing and shoplifting), when the victim is in some isolated spot (robbery), or when no-one is about (vandalism and autocrime). Some crimes, such as bank robbery or bag-snatching, have to be committed in full public view, but these rely for their success on elements of surprise, a show of force or even disguise. And drink, temper or other precipitating factors of the kind determine the issue elsewhere, for instance in relation to assaults. By and large, however, offenders seem to be deterred by the actual or potential presence of other people.

As many offenders will recognise that there is only a small chance of being seen by a policeman or some other person in an official security role, it seems that the presence of the public itself may provide much of the deterrent effect. The important practical question which arises from this—one which so far has received little consideration from criminologists—is whether the fear of being seen by the public can be manipulated in the interests of preventing crime. In the course of undertaking the two research studies reported in the subsequent chapters of this volume, it became clear that a number of rather complex issues are involved and the present chapter takes the opportunity of discussing these in greater detail.

The surveillance effect
Any assessment of the potential for reducing crime through making more deliberate use of surveillance by the public demands a clear understanding of the process by which surveillance achieves its effect. This understanding is hampered by a general lack of research, though our knowledge about some aspects is greater than about others. In particular, rather more is known about the actual risks of intervention than about how these are perceived by the offender.\(^1\) Clearly there is some relationship between actual and perceived risks—for example, the deterrent effect of new measures, such as closed circuit

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\(^1\) Reppetto's (1974) study of burglary is relevant. This showed that the most common reason given by 97 convicted burglars for avoiding a particular target was that there were 'too many people around'—over a third of the sample said this; over a fifth also said that the possibility of neighbours watching deterred them. The study also confirmed that burglars selected areas for offending where they felt least conspicuous—race being a particularly important factor.
television in shops, has been found to be quite short-lived unless they are seen to result in intervention (see Chapter 3). But it is not known what weight offenders place upon the different risks attached to committing crime—for example, how much they fear the serious but more remote consequences of conviction and sentence, in comparison with the more immediate risks of being seen (i.e., being shouted at, pursued, or even assaulted). Nor is it known how much thought offenders give to the consequences of being seen as compared to the chances of being seen, which they can more immediately assess.

The situation is further complicated by its dynamic aspects. The chances of being seen are constantly changing and can be minimised if the offender carefully chooses his moment. Moreover, the consequences of being seen will presumably depend not just on the nature of the offences, but also on the point at which suspicious behaviour is witnessed: someone seen trying the doorhandle of a car will have less to fear than someone seen actually removing property from it.

Whatever the offender may fear, however, the available evidence suggests that the chances of witnesses behaving in ways which will have serious consequences for him are often small. First, people frequently fail to notice crime taking place. In one study (Gelfand et al., 1973), 'shoplifting' incidents were staged in direct view of shoppers, but only 28% of those whose attention was attracted noticed the theft. Second, and perhaps more important, even if an observer becomes suspicious he may have difficulty in deciding whether an offence is being committed: a stranger may be unable to tell whether a man entering a house in slightly suspicious circumstances is an intruder or someone with a right to be there. Also, the incident may be interpreted as something other than crime. In the often-quoted murder of Kitty Genovese in New York in 1964, many of the 38 inactive witnesses said that they thought the incident was 'a lovers' quarrel!' (Rosenthal, 1964). Third, a number of studies under the 'bystander intervention' heading also show that immediate witnesses to criminal incidents appear surprisingly reluctant to challenge offenders or to provide direct help to victims (cf. Latané and Darley, 1970). Explanations offered for this include the fear of personal injury, the inconvenience of becoming involved, and feelings that victims may not welcome interference. Fourth, the likelihood of a witness summoning the police, especially in regard to minor offences, may also not be great. He may feel that the police would arrive too late to take effective action and he may have difficulty in contacting them—in many cases he will need to find a public telephone and even if he is at home, he may be among the 46% of householders in this country who do not have a private telephone. In addition, he may be embarrassed about reporting an offender (such as a neighbour's child) who is known to him, or he may fear retaliation for reporting crime—for instance, from vandals. Finally, given the well-established unreliability of witnesses in identifying criminal suspects (see, for example, Home Office, 1976; Clifford and Bull, 1978), the risk may be small of a witness subsequently recognising an offender if he sees him again by chance or, more usually, if an identification is required by the police.
Given that the chances of intervention from members of the public seem generally to be quite low, the fact that offenders avoid being seen requires some explanation. In the absence of relevant research, it is once again necessary to speculate—and there are a number of possibilities. First, it may be that offenders, especially inexperienced ones, are deterred from committing crime when the public is around because they considerably over-estimate the chances of intervention. Second, it may be that even a small perceived risk of intervention is a sufficient deterrent in most cases. Third, it may be that offenders have a reasonably good idea of the chances of intervention from various classes of witness and are generally unwilling to run even a small risk of being seen by those who are most likely to take effective action.

The third explanation is the one preferred here and, given this, various suggestions are considered to increase the chances of intervention by those groups of witnesses who would appear to be the most effective. It needs to be said, however, that our choice of explanation is not based on any firm knowledge of offenders' perceptions and that if, in the light of further research, the alternative explanations emerge as more plausible, then the general argument of this chapter would need to be revised. In particular—and this is a point returned to later—further thought would be needed about the merits of improving the chances of being seen by members of the general public even though they appear unlikely to take effective action.

With this point in mind, it is suggested here that offenders avoid being seen in particular by those who will be familiar with, and are committed to defending the property, persons or environment under threat. Such witnesses will be likely to recognise suspicious behaviour and interpret it correctly. They will also be prepared to take action and will be able to judge best what to do in the circumstances. Who these witnesses are will depend on the situation, but it is possible to distinguish three main groups. The first of these are the police and security personnel, such as store detectives, who have an explicit law enforcement function and who are trained to carry it out. This group falls outside the scope of the present discussion, though it is worth noting that the deterrent role of the police in particular will be limited by the fact that they rarely catch the offender in the act.

A second group, who pose a threat to burglars and others committing offences in residential settings, are members of the public in the capacity of 'residents' (defined here to include all those occupying residential premises who are of an age to respond to criminal incidents). Such people will defend their own 'territory' and, to the extent that they are familiar with the neighbourhood at large, may also offer effective surveillance beyond the confines of their own or their immediate neighbours' property.

A third, more heterogeneous group, consists of people working in 'public' places such as bus conductors, car park attendants, receptionists, caretakers in schools or housing estates, and shop owners, managers or assistants. These people, conveniently referred to as 'employees' in the remainder of this dis-
cussion, have a general responsibility for the security of the property, as well as for supervising public behaviour, in the places where they work. Some employees will themselves commit a proportion of the crime occurring in the places where they work, but even they may still perform a ‘policing’ function with regard to the general public.

Even if residents and employees are most likely to deter those considering committing a crime, this is not to say that offenders totally disregard other witnesses, but rather that they pose a smaller threat. Nor will offenders always be able to tell whether the person likely to see them will be a resident or employee and they may exaggerate the risks involved through being uncertain as to who will see them.

If offenders fear being seen not so much by the public at large, but by those categories of witness who stand in some special relationship to the persons or property under threat, what implications does this hold for crime prevention? One is that preventive measures directed at the public at large may have limited benefits. Though it may sometimes be possible to create conditions under which crime is generally more visible—through improved street lighting for instance—the public may still have difficulties in deciding whether a crime is being committed and in deciding what to do. Moreover, they may have no increased commitment to take action and, consequently, may be no more feared by offenders than it is assumed they are at present. With this said, however, it is possible that schemes to reward the public for information or action leading to an arrest may help in certain circumstances (they have been used in attempting to prevent vandalism on building sites). Also, a greater number of public telephones in high-risk areas may make it easier for police help to be called. The chief difficulties here are that the kiosks themselves might be subject to vandalism and—more important—that response-time studies (e.g., Bertram and Vargo, 1976) suggest that even victims of crime delay on average some 20 minutes before calling the police—often to seek advice or comfort from friends or relations. This suggests that making it easier to summon help may have its greatest effect in raising the level of reported crime rather than in leading to more apprehensions.

While measures directed at the public at large may not stand much chance of success, the present assumption that offenders are most deterred by the possibility of being seen by such witnesses as residents and employees suggests that measures which attempt to capitalise on this should, in principle, have greater potential. The remainder of this discussion is concerned, therefore, with assessing strategies focused on these categories of witness.

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1 It needs to be said, however, that there are many classes of employee—office workers, for instance—who have a minimal surveillance value, except perhaps in relation to crime committed by their fellows.

2 In the more rigorous evaluations (e.g., Wright et al., 1974 and LEAA Newsletter, 1977), street lighting has not been found to have any consistent effect on the level of crime. Though it is a popular measure—perhaps because it reduces the fear of crime—there may often be insufficient people on the streets for upgraded lighting to matter much. It may also have only limited benefits for residents, most of whom are behind closed curtains when it is dark.
Improving surveillance by residents

Measures which increase the capacity of residents to exercise surveillance need to be considered in relation to the risk of residential crime. In the United States at least, this risk seems at first sight quite high enough to justify action. National Crime Survey data, for instance (NCJISS, 1977), show that in 1975 the average risk of a household being burgled was 1:11, and taking into account other crimes which occur in a residential setting (i.e. crimes of violence, vehicle theft and theft from the person which take place in or near the home) the risk over the year rises to 1:4. For Great Britain, the absence of large-scale victimisation surveys make it difficult to calculate equivalent risks, though the average risk of burglary per household may be in the region of 1:35.¹

While risk rates even of the sort experienced by householders in this country may appear high, turned on their head they show that on average a household will experience a residential crime only once in the course of many years—for instance, once every 35 years in the case of burglary. Certainly, this hides the fact that some householders will be at disproportionately greater risk, though where this is so (for instance, in some areas of poor council housing) better surveillance may have the least chance of competing with the powerful criminogenic forces at work. There are other qualifications too. On the basis of American evidence, 'household thefts' (whether reported to the police or not) may account for about half the total of 'residential crimes', but since these are committed by someone with a right to be on the premises (a guest, delivery man etc.) there may be little that can be done to reduce these crimes through improved surveillance. Secondly, residential crime comprises many different types of incidents, not all of which will be serious. It is difficult to take account of the psychological distress caused, but those burglaries where only small losses of property or cash are involved might not always be regarded as very serious offences—and nearly half the household burglaries known to the police in England and Wales in 1977 involved losses to the value of under £25 (Criminal Statistics, 1977). Finally, and this may be most important of all, while even average risks (and certainly local ones) may appear serious, the actual number of occurrences is small viewed against the enormous number of opportunities for residential crime that occur during each of the twenty-four hours of the day for each day of the year.

Thus, it appears quite arguable that except for some particularly hard-hit locations, the day-to-day risk of residential crime in most places is such as to impose strict limits of cost (and indeed effort) on what can be done to improve surveillance by residents. This point has relevance for all the measures discussed below, but it has perhaps greatest force in relation to proposals (usually associated with Jane Jacobs, 1961) for creating a sense of local community

¹ This assumes that twice as many burglaries occur as are reported to the police—which is the American figure. A victim survey by Sparks et al. (1977) suggests that the reporting rate may be lower in this country—which would make the burglary risk higher than 1:35. Sparks' reporting rate may be low, however, because the survey was conducted in London.
through neighbourhood planning and to those of Oscar Newman (1972) for increasing ‘defensible space’ on housing estates.

*City planning and architecture*

As is well-known, Jane Jacobs has argued that crime flourishes when people do not know their neighbours, when they stay behind their doors, and when they have no sense of identity with the neighbourhood in which they live. In order to foster the development of local communities and to increase the number of residents interacting upon the streets, she advocates accommodating people at high densities, reducing open spaces such as parks, greatly widening sidewalks, and placing shops and services in streets formerly reserved for housing.

Though attractive, these ideas are not very practicable in this country or elsewhere in that they might involve large-scale changes in the way that towns and cities are laid out, and may go against well-attested planning principles of low housing densities and zoning of land use. Equally problematic is that her prescriptions may produce high levels of activity on the streets but not a sense of community; and activity alone does not necessarily impede crime. Luedtke and Associates (1970), Letkemann (1973), Pabian and Baxter (1975) and Duffala (1976) all found levels of pedestrian and vehicle traffic to be negatively related to the incidence of certain crimes though, in most cases, the effect of activity is not easily singled out from other situational factors which also affect target vulnerability (such as, in the case of shops, how far their interiors are screened from the view of passers-by by window layout and parked cars). Moreover, other studies have claimed that activity may have no effect on crime (Wilcox, 1974; Reppetto, 1974) or, especially in more socially disorganised areas, that it may even encourage crime by providing ‘cover’ for strangers to circulate (cf. Angel, 1968; Suttles, 1968; Brantingham and Brantingham, 1975). The study of telephone kiosk vandalism reported in Chapter 2 of this volume showed that heavy kiosk use, far from creating a surveillance effect, was associated in most areas with heavy vandalism, possibly because a proportion of all users will damage the kiosk. It would appear, then, that the relationship between levels of social activity and crime will vary with different types of crime and may depend as much on the nature of the activity as the area in which it takes place.

Jane Jacobs' 'planning' approach to increasing surveillance opportunities for residents can be distinguished from the 'architectural' approach of Oscar Newman who has recommended that housing estates should be designed to give residents a better view of vulnerable areas and at the same time an increased sense of territoriality. Newman's 'defensible space' ideas have enjoyed considerable support among lay public and architects alike, but it is questionable again whether they can be applied on any wide scale. Newman himself suggests that modifying existing buildings is often less realistic an option than installing more security hardware and employing security personnel, while even for new buildings there is little chance that defensible space
would over-ride other possibly conflicting considerations such as cost, or a desire on the part of residents for privacy.

Moreover, it is not clear how far defensible space designs reduce crime. Newman's (1972) original work which claimed that crime and vandalism were much higher on housing estates lacking in defensible space has been subject to methodological criticisms (e.g. Bottoms, 1974) and he himself (e.g. Newman, 1975) has modified his thesis to accord greater weight to social factors, particularly the social 'mix' of the people on the estates. Furthermore, where housing projects have been modified along defensible space lines, the benefit gained has not always been great. Nor have results from a number of studies looking at defensible space features of the environment in terms of levels of crime shown design to have other than a weak effect.

Thus, studies recently undertaken of crime (Mawby, 1977a) and vandalism (Wilson, 1978) on housing estates in this country suggest that defensible space in this context affords only some small protection from victimisation. This was also the conclusion of Mawby's (1977b) study of telephone kiosk vandalism and of the one reported in Chapter 2 of this volume. In the latter, defensible space (defined as the number of domestic windows overlooking each telephone kiosk) gave at best only marginal protection from vandalism. A point often neglected is that many people are away from their homes for much of the day. Even when at home, they may spend little time looking out of the window and, where the offender is careful to make no noise, defensible space designs may confer little protection from crime.

Community surveillance
It is the degree of effort required from local residents rather than the costs which may impose limits on the value of 'community surveillance' schemes such as have emerged in certain American cities. One main group of these are crime reporting projects, which include 'block watches', and other programmes which stress co-operative surveillance amongst neighbours. Citizen patrols, another main group, are usually focused on specific neighbourhood areas or groups of buildings, and consist of motorised patrols or rotas of people who check unfamiliar cars in the area, make sure that residents' doors are locked, screen people who enter protected buildings and so forth.

1 For instance, an evaluation (Kohn et al., 1975) of defensible space modifications initiated by Newman to two row-housing developments in New York showed some positive gains were made—though these were greatest at the project (Clason Point Gardens) where tenants were involved in the renewal programme. However, defensible space changes carried out with tenant participation to low-rise apartment blocks in Liverpool were not thought successful (Hunter, 1978). Further results are awaited from projects mounted under the National Institute of Law Enforcement and Criminal Justice 'Crime Prevention Through Environmental Design' programme (see Nation's Cities, 1977), though it is questionable whether the effect of defensible space solutions will be separable from those of other techniques incorporated into the projects. Most of these applications are based on existing environmental settings, and it may be that where defensible space principles are deliberately maximised in new designs their value will be greater. A new project for the elderly in Toronto (see Goldberg and Michelson, 1978) suggests that the design was only marginally successful, though the evaluation was limited.
Though they may reduce fear of crime, there is little evidence that these schemes bring about actual reductions in crime rates (cf. Washnis, 1976; Cirel et al., 1977; Yin et al., 1977). There also appear to be difficulties in recruiting enough people who are willing, for acceptable reasons, to give their time to exercising vigilance on behalf of others, and more particularly, difficulties in maintaining enthusiasm. This is seemingly because individuals encounter so few incidents of crime that the effort required begins to seem disproportionate to results. The even smaller risks of crime in this country may be the strongest reason why organised community surveillance stands little chance of flourishing here, and indeed it is telling that one isolated vandal patrol disbanded after only a few weeks during which not so much as a single vandal was glimpsed at work.

Surveillance aids
Most other measures designed to extend the surveillance capacity of residents, such as fitting a burglar alarm, are intended to keep intruders out of the house, rather than to prevent crime, such as vandalism, which may occur in the surrounding area. Though good empirical evidence of their effectiveness is lacking, these measures—and perhaps others which give an impression of occupancy through systems which switch lights on-and-off and draw curtains—probably afford a degree of protection to individual households. Nor do most of them cost a great deal of money. Looked at, however, from the point of view of policy-makers and the police, who are concerned to reduce overall levels of residential crime, the measures may have rather more limited value. Easy opportunities undoubtedly contribute to the occurrence of break-ins and theft, but many of these are committed by fairly determined individuals who will continue to seek out the best chances. The majority of householders currently attend rather little to securing their own property (in London, for instance, nearly a third of the burglaries reported to the police were through open doors and windows), and there is little reason to think that in future surveillance devices will be installed by sufficient numbers to reduce the ample opportunities for displacement of offending from more to less protected dwellings. This argument has support from previous research (Mayhew et al., 1976) into the policy, instituted in 1971, of fitting steering column locks to all new vehicles imported to or manufactured in this country. The locks were found to confer additional protection on the cars fitted with them, but even when the proportion of these was quite substantial (some 40% of the total) the numbers of unprotected cars was quite sufficient to allow levels of autocrime to continue rising.

Improving surveillance by 'employees'
It has been argued above that, despite the fact that offenders fear being seen by residents, the risk of residential crime will impose limits of cost and effort on what can be done to increase the surveillance opportunities of residents. In principle, the risk of crime in shops, buses, underground stations and parks may be such that people employed in busy public places will have far greater potential for witnessing crime, and measures to extend their surveillance
capabilities might therefore be correspondingly more viable. (It is worth saying that residents' surveillance will to some degree extend to public areas around their homes, but will not cover most public targets where the risk of crime is undoubtedly highest. In the context of some other Home Office Research Unit work, for instance, it has been conservatively estimated that an average shop in this country can expect one shoplifting offence every three days, a figure which contrasts starkly with the risk of residential crime. In relation to vandalism, too, Sturman (1978) showed that rates of damage to shops were 85 times higher than to private dwellings, and to schools 480 times higher.) As well as the risk of crime in public places being higher than in residential settings, much of this 'public' crime—shoplifting, purse-snatching, vandalism—might be sufficiently opportunistic in character not to be displaced to less well-protected settings.

The crime prevention role of employees is a topic which has not featured greatly in the criminological literature. One study of burglary in Toronto (Waller, 1976) found that high-income apartment blocks with doormen were particularly well-protected against victimisation—a finding which is echoed in Reppetto's (1974) study of burglary in Boston. In another context, a Home Office Research Unit study of vandalism to double-deck buses (Mayhew et al., 1976) showed that the degree to which passengers could be supervised by the crew had a very marked effect on rates of vandalism, damage being much worse on one-man operated buses and in the rear top deck where passengers could be least well observed. The Lambeth Inner Area study of vandalism on housing estates (Department of the Environment, 1977) showed that estates with resident caretakers had fewer problems of vandalism, while a recent police study in Exeter suggested that car parks on ground level with attendants in control had the lowest rates of car park crime in the area (Sunday Times, 9 April 1978). British Rail also claim to have virtually eliminated hooliganism on trains by football club supporters through a variety of measures including the simple expedient of allowing club stewards to travel free of charge in order to supervise supporters while on the train. Finally, the Post Office report that pay-phones located in such places as public houses and laundrettes which are presumably given some supervision by the management and employees of these establishments, suffer very much less vandalism than ordinary public telephone kiosks.

Although this is quite persuasive evidence, how far it might serve as the basis for any fresh policy initiatives is not entirely clear. While the risk of crime in many public places may be high, it may still be high enough only in a small minority of settings to justify the more deliberate use of surveillance by employees. Moreover, there may be comparatively few settings where the potential for this has not already been exploited. While acknowledging this, however, there is probably some scope for local police to persuade more recalcitrant managements to take responsibility for preventing crime in the property or the facilities under their control and in this way to relieve the police and the rate-payers of an unfair burden.
The measures possible will vary with the nature of the setting, but it is likely that more can often be done to make the surveillance role more explicit to employees, to train them better to carry it out, and even to provide financial incentives to take on additional duties. The chief difficulty here is that many employees will be unsuited to additional or more explicit surveillance duties or may be reluctant to carry these out because they are found distasteful or even frightening. (School caretakers in this country are at present arguing that they do not wish to be held responsible for ‘policing’ functions.) Where the financial or social costs of crime are sufficiently high, more might also be done to facilitate surveillance through design. Supermarkets, for instance, are sometimes designed so that assistants can watch customers more easily, while the new subway system in Washington DC (see Nation's Cities, 1977) has been designed to maximise the visibility of passengers. It can be made easier, too, for police help to be summoned (not even all school caretakers have telephones or bus crews two-way radios). It may also be cost-effective sometimes—solely in terms of crime prevention—to employ such people as play-leaders on housing estates, though the difficulties should be recognised of finding people to cope with a range of different-aged children and willing to work the unsocial hours involved.

Apart from these measures, there is probably also scope for using surveillance aids in some situations. Burglar alarms, for instance, are a convenient way of ‘buying’ additional surveillance, though notoriously high false alarm rates tend to make them heavy on manning costs and have resulted in some resistance on the part of the police to alarms directly linked to police stations. Moreover, one well-planned study of the effectiveness of commercial burglar alarms (Cedar Rapids Police Department, 1971) which assessed an experimental programme in which 350 silent alarms were installed in business premises in the locality, showed that alarms did not decrease burglary where they were installed, though they did improve the chance of the offender being apprehended. CCTV may be a powerful deterrent if staff can be suitably organised to provide sufficiently continuous viewing and if they are able to communicate with those nearer to the offender (cf. Home Office, 1973). Chapter 3, which reports a study of the effectiveness of CCTV operated by station staff in the London Underground system, shows that the system substantially reduced crime in those stations where cameras were installed, albeit at a high cost per deterred crime, and possibly with some displacement of theft offences.

Summary and conclusions
Most offenders avoid committing crime in public view, and this chapter has examined the question of whether greater use could be made of this fear of being seen in order to reduce crime levels. The paradox is that the consequences of being seen by members of the public are rarely serious for offenders and it was suggested that they usually try to avoid being seen because they fear the minority of witnesses who will take effective action. Two groups of these were identified under the broad labels of ‘residents’ and ‘employees’.
It was argued that measures to increase the offender's fear of being seen would, in principle, have greatest effect if they involved these two groups. Several considerations suggest, however, that it may be optimistic to expect a great deal, especially from residents. The fashionable solutions of Jane Jacobs and Oscar Newman, for instance, may not be able to compete with other less manipulable determinants of residential crime, while implementing their suggestions may in any case pose serious practical problems. Moreover, while the public in the capacity of householders may be more likely to intervene, they may still not be sufficiently effective witnesses to make an improvement in their surveillance opportunities worthwhile. The chance of witnessing crime in progress is still by and large too small for residents to spend much time looking out for it (even if they are at home to do so), and current attitudes towards security do little to suggest that surveillance equipment would be widely enough used to prevent displacement.

Measures to extend the surveillance capabilities of employees, at least in the higher risk settings, seemed more viable. Thus, there may be benefit in training employees to undertake a more directed surveillance role and in facilitating this through the judicious design of the places in which they work. There may be occasional benefit, too, in providing them with surveillance aids, this being illustrated by the study reported in Chapter 3 of the installation of CCTV for the use of station staff in the London Underground system.

Much of the argument above relies on intuitive and commonsense notions about the behaviour of witnesses and offenders, and it may have to be modified in the light of further research. The two studies reported in the subsequent chapters of this volume bear on only two of the many issues which have been identified as needing to be examined. In particular, more information is needed (from interview studies) about offenders' perceptions of the risks involved in being seen, in various circumstances, and by different onlookers. This information may serve as a counterweight to knowledge about the actual risks of intervention and redress the tendency—somewhat inevitable in the present state of knowledge—to exaggerate the rational risk-taking elements of offending. At the same time, such information may modify the assumption made here that members of the public not acting in the capacity of residents or employees have relatively little deterrent value. If this is so, then it is apparent that the usefulness of measures to increase the chances of being seen by the general public and to increase their ability to take effective action will need to be reassessed.

Nonetheless, the discussion as it stands has made it clear that surveillance by the public comprises a wide range of activities in a number of different situations. It encompasses, for example, some of the responsibilities that come with paid employment, as well as the organised pursuits of resident groups who take on the task of crime prevention in their neighbourhood. Because of this, generalisations about surveillance by the public are difficult, and a better understanding of it might be achieved by relating it to specific types of crime and to the many other situational factors with which it interacts to determine
patterns and levels of offending. It may be in fact, as suggested by the study of telephone box vandalism, that surveillance is not an important explanatory variable for all categories of crime.

These considerations might be taken into account in work to evaluate the surveillance options which the chapter has identified. This work, in turn, should accept the fact that surveillance techniques share some of the usual problems of crime prevention methods which attempt to reduce opportunities for crime (cf. Mayhew et al., 1976; Clarke, 1977): namely, that they do not tackle whatever underlying factors may motivate people to crime; that they can appear negatively 'defensive'; and that they cannot always guarantee that crime is not merely displaced in time, place or method. This said, however, enlisting the support of the public in their capacity of residents and employees has the advantage of bringing home to them that the responsibility for controlling crime does not lie entirely with the police.
Chapter 2: Natural surveillance and vandalism to telephone kiosks

Telephone kiosks, like many other public facilities, are notoriously vulnerable to vandalism. Some kiosks suffer more than others, however, and it is reasonable to ask, following Oscar Newman (see Chapter 1), whether the differing degrees of damage they sustain are influenced not just by the broader social characteristics of the neighbourhoods in which they are located, but also by the amount of ‘natural’ surveillance they receive from members of the public. This was the question investigated in the present study.

During the course of the present work, Mawby (1977b) reported the results of a similar but smaller-scale study of vandalism to 27 telephone kiosks in residential areas of Sheffield. The strongest relationship he found was between vandalism and kiosk use: kiosks for which takings were highest were the most heavily vandalised, a finding which also held for the total number of kiosks in the Sheffield area. When kiosk use was controlled for, a weak relationship was found between vandalism and ‘defensible space’ in that of the 27 kiosks studied in detail, those on the least public roads and not near public amenities were the most vulnerable. There was no tendency, however, for areas of high-rise developments (generally seen as low on ‘defensible space’) to experience more kiosk vandalism than other areas. A further finding was that council housing areas had more kiosk vandalism than areas of privately-rented or owner-occupied accommodation, this being particularly true of council areas which experienced high rates of indictable crime known to the police.

There are three respects in which the present study can be seen as developing the work of Mawby. First, it is based on a much larger number of kiosks (217) which has made it easier to study the effect of the numerous variables related to vandalism. Second, it includes all the kiosks in one London borough and therefore covers a much wider range of settings than the residential ones Mawby examined. Third, and most important, Mawby’s principal measure of ‘defensibility’ (the ‘publicness’ of the road in which a kiosk was situated), though admittedly showing some relationship with vandalism, is open to criticism. His emphasis on public visibility neglects the territorial component of defensible space, though he makes the reasonable point that it is not clear how far territorial responsibility can be induced in respect of public amenities. In addition, his measures of public visibility—the ‘busyness’ of the street and the proximity of the kiosk to public amenities (shops, parks, schools etc.)—assumes that the busier a place is, the more surveillance will thereby be afforded to a kiosk. As argued in Chapter 1, however, more people do not
necessarily mean more effective surveillance unless they are in some way ‘committed’ observers; and indeed more people may mean more potential offenders. Moreover, the number of people passing a kiosk, on foot or in cars, may not in fact be high or constant enough to deter potential vandals, who in any case can easily watch out for possible witnesses.¹

The measure of surveillance chosen for the present study was the number of domestic windows in a given radius overlooking the kiosk. This measure probably includes some component of territoriality as residents are more likely to feel responsible for public property which they constantly overlook. (Presumably territorial feelings will be even stronger where they make regular use of the kiosk, but this was something that could not be measured for the present study.) There are also some other theoretical advantages over the measures of public visibility used by Mawby. Those who may be watching from behind their windows cannot necessarily be seen and one might suppose therefore that they pose a continuous threat to the potential vandal. And this threat is likely to be particularly strong during the evenings and weekends when vandalism may most often occur. Moreover, even if nearby residents cannot actually see what is happening inside a kiosk, the vandal may not know this, or be prepared to risk it. The passers-by Mawby took account of may in any case be in no better a position especially if they are in cars rather than on foot.

Method
The sample consisted of 217 telephone kiosks in the London Borough of Greenwich, virtually all the kiosks in the borough (a few were omitted from analysis because of incomplete information). An analysis of data from the 1971 Census showed Greenwich to be typical of London boroughs on a range of census variables.

Four main sets of data were collected: the amount of vandalism sustained by each of the 217 kiosks in a twelve-month period; the social characteristics of the population living in the vicinity of each kiosk; the degree to which each of these kiosks was used; and the degree to which they were overlooked by residential dwellings.

Information about vandalism
Information about vandalism derives from records of visits made in the financial year 1973/74 by Post Office engineers to each kiosk in Greenwich to repair damage resulting from vandalism.² These visits were made either in response to calls from the public that the kiosk was out of order or in need of

¹ In the pilot work for the present study it was found that two measures of defensibility which are akin to those of Mawby—land usage in the area surrounding the kiosk and levels of vehicle and pedestrian traffic passing the kiosk—were not related to vandalism. The latter measure is particularly inconvenient to take in any case as several observations are desirable over different times of the day and week.

² Other service work is separately recorded. Although it may be that some damage recorded as vandalism was in fact wear and tear, the nature of the repairs carried out (for instance, unlocking objects from coin slots) suggested deliberate rather than accidental damage. Furthermore, Post Office personnel offered assurances that vandalism in kiosks is easily recognised.
repair, or in response to directions from Post Office personnel concerned with routine inspection. In the main, repairs were to the telephone instrument or to the coin box mechanism, the result usually of petty incidents of damage which nevertheless often upset the proper functioning of the telephone service. (At present, steel covers on cash compartments have made the theft of takings—at one time the cause of much kiosk damage—extremely difficult. Damage to the compartments is still committed, however, presumably by those who continue to try and break into them or by those who perhaps feel frustrated by the difficulty of doing so.)

While the data about vandalism are probably adequate for present purposes and appear to have been reliably kept,¹ the records relate to the number of times an engineer is called out and may not have been a good indication of the number of individual incidents of damage a particular kiosk sustained. For example, in heavily-hit kiosks there may have been a policy of repairing a number of separate incidents of vandalism during the course of one visit. This would have tended to produce a negative correlation between call-outs and repair costs. In fact, the correlation between the number of call-outs and the costs of repair was positive and therefore in subsequent analyses call-outs in preference to costs were used.

Social characteristics

1971 Census data for Greenwich were used to characterise the small areas of population surrounding each kiosk from which it was assumed that vandals would be drawn. Data were collected at enumeration district (ED) level,² and comprised information on a range of variables (for instance, social class, type of tenure and the age structure of the population) which evidence suggests are associated with criminal behaviour (see, for example, Wallis and Maliphant, 1967; Baldwin and Bottoms, 1975; Herbert, 1977).

For the purpose of examining the composition of local populations, data were collated on the main EDs (usually two or three in number) falling within a radius of 220 yards of each kiosk. (Nearly all kiosks were surrounded by some dwellings in the given radius, though a very small number were not.) The radius was decided upon because kiosks in urban areas are situated about a quarter of a mile apart, and because it seemed reasonable to suppose that kiosks are vandalised by those who live in the immediate vicinity. Probably juveniles are the most heavily involved, kiosk vandalism seeming to be one of the ‘tough’ activities that is an extension of their outdoor play.³ Baldwin and Bottoms (1975) found that three-quarters of young offenders operated within

¹ A split-half reliability test showed that there was a close association between the number of vandalism incidents to each kiosk in the six ‘even’ months of the twelve-month period compared to the six ‘odd’ months. In other words, the recording of vandalism over the year in question seemed fairly consistent.

² An enumeration district is the smallest areal unit for which census data are collated. The average number of households per ED in Greenwich was 165.

³ A self-report study of vandalism (Gladstone, 1978) by schoolboys in the 11–16 age group showed that telephone kiosk vandalism is one of the most common offences they said they committed.
a mile of their homes, while Suttles (1968) found that two-thirds of juveniles who committed malicious damage offences did so within two blocks of their home.

**Kiosk usage**
As the easiest measure of kiosk use, information was obtained from the Post Office about cash takings during the financial year 1973/74 for 209 of the 217 kiosks.

**Information about surveillance**
The measure of surveillance used was the number of domestic windows (i.e. windows in residential properties) in a radius of 30 yards which overlooked a kiosk. (In the case of tall buildings, only windows on the first three floors were counted.) This was easy to record and reliable, serving as a measure of the amount of potential surveillance offered to kiosks by householders from within their homes.

**Results**

**Vandalism**
The mean number of vandalism incidents to Greenwich kiosks over the twelve-month period was 4.7 (sd = 3.2), which compares with a national average for the same period of 2.2 incidents, a London average of 3.6, and a higher figure of 6.7 for the 27 kiosks in Sheffield studied by Mawby. (For Sheffield overall, Mawby found an average of 2.9 incidents repaired per kiosk.) In the worst cases, some 6% of Greenwich kiosks sustained more than 10 incidents in the period, while for 4% of the kiosks no reports of vandalism were made at all.

**Social factors**
Analysis of vandalism rates in terms of census variables showed that the amount of vandalism to individual kiosks was significantly related, in ways not expected, to the characteristics of the population from which vandals were likely to be drawn. (Most of the census variables associated with vandalism were themselves interrelated.) For example, vandalism rose as the average number of persons per household rose, and as the number of unemployed and one-parent families increased; it was more prevalent in lower social class areas and where there was a high turnover of population; and it rose together with the proportion of boys in the population aged 5–14 at the time of the Census.¹

The strongest factor, however, which discriminated between high and low vandalism rates was tenure type: the more that kiosks were surrounded by council housing, the more vandalism they suffered (p<.001). One explanation which suggests itself relates to the proportion of boys living in the close vicinity

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¹ Mawby looked at boys aged 10–14 at the time of the 1971 Census in the nine residential areas in which his 27 kiosks were sited. Perhaps because of his small overall sample, the fact that his age range was small, or the fact that he looked at much wider surrounding areas, his results were inconsistent with ours in showing that the proportion of juveniles in the area had little effect on levels of damage.
of kiosks. For 'council' areas (defined as those where 50% or more of the dwellings in the enumeration districts surrounding the kiosk were council-owned) the mean proportion of boys aged 5 – 14 at the time of the Census was 8.3% of the population. For 'non-council' areas (those where less than 50% of the dwellings were council-owned) the mean proportion of boys was significantly lower at 6.8% (p < .001). However, despite this difference, rates of vandalism in non-council areas with unusually high boy densities suggested it was the presence of 'council' boys specifically which led to kiosk damage: a sample of 60 kiosks surrounded by very little council housing (on average 14% of the housing in the area) but with a high mean proportion of boys (8.2%) living in the vicinity, sustained on average 4.1 incidents of vandalism in the period compared to 6.4 for the 'council' kiosks themselves (p < .001). This result may simply reflect a greater inclination to commit vandalism on the part of boys living in council areas, though it may also mean that council boys (particularly those living in flats) are more often out on the street than boys elsewhere.

Usage
Unlike Mawby's study, the present result revealed no strong effect whereby, for the sample of kiosks as a whole, vandalism increased as kiosk use increased. At the same time, looking at the council and non-council sectors separately (average takings per kiosk were similar in both sectors), there was a significant positive relationship (p < .02) between use and vandalism for non-council kiosks, although this did not apply to kiosks in council areas. In other words, for areas with little or no council housing, heavy use was associated with vandalism. The explanation for this may be that while a relatively constant proportion of its users may damage a kiosk, in council areas this effect is masked by the fact that council boys may be attracted to, and may damage, a kiosk on occasions other than where they are using it. Alternatively it may be that in non-council areas the busy kiosks are likely to be in the more interesting and busy places which may attract the vandal.

Surveillance
With regard to surveillance, analysis of the sample as a whole, not controlling for population differences in the immediately surrounding areas, showed no straightforward effect whereby kiosk vandalism fell with increasing numbers of overlooking windows. However, a deterrent effect of windows became clearer when account was taken of the fact that kiosks in predominantly council housing areas suffered on average more vandalism than kiosks elsewhere, i.e. when the 'window effect' was examined separately in relation to council areas and to non-council areas. Table 2:1 shows that in non-council areas, kiosks which were overlooked by relatively many domestic windows suffered less (though marginally less) vandalism than kiosks overlooked by relatively few windows.¹ There was a similar result for kiosks in council areas but, perhaps because of small numbers, it was statistically less significant.²

¹ t = 2.04; p < 0.025; one-tailed test.
² t = 1.56; p < 0.07; one-tailed test.
Table 2:1
Kiosk vandalism and the effect of overlooking windows

<table>
<thead>
<tr>
<th></th>
<th>Non-council areas</th>
<th>Council areas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average number of vandal incidents per kiosk</td>
<td>Average number of vandal incidents per kiosk</td>
</tr>
<tr>
<td>Less than median number of windows</td>
<td>4.3 (n = 76)</td>
<td>7.1 (n = 36)</td>
</tr>
<tr>
<td>More than median number of windows</td>
<td>3.5 (n = 72)</td>
<td>5.6 (n = 33)</td>
</tr>
<tr>
<td>All kiosks</td>
<td>3.9 (n = 148)</td>
<td>6.4 (n = 69)</td>
</tr>
</tbody>
</table>

NB: Kiosks in each of the two sectors are divided into two similarly-sized groups according to the number of windows which overlooked them. The split was made at the median number of windows: 19 in the case of kiosks in non-council areas, 23 in the case of the more overlooked kiosks in council areas. (See text for definition of 'council' and 'non-council' areas.)

The results suggest, then, that kiosk vandals are to some extent deterred by the actual or potential surveillance offered by those who are looking, or might look out of domestic windows. This 'window effect' was not a strong one, and this may be partly because the variance in surveillance has already been reduced by the Post Office who aim to site kiosks to avoid highly secluded areas with little natural oversight.

Implications
The type of 'natural' surveillance by people from within their homes which was measured in this study was shown to have only a small effect on the level of kiosk vandalism. This may reflect the fact that those inside their home pay little attention to public targets when the chance of vandalism—perhaps not considered a serious offence—is still relatively infrequent. Another possible explanation is that people may in fact spend rather little time looking out of their windows and as long as little noise is being made vandals may be relatively safe from being seen.

On the face of it, therefore, the results of the study do not support Newman's (1972) contention that residents can provide a useful function in 'policing' areas outside their homes. To some degree, this may be because telephone kiosks are not often situated in the sort of private or semi-private areas over which offenders think that residents, as Newman claims, adopt proprietary attitudes. Nevertheless, to the extent that public amenities are not usually located in residents' immediate domain, the present results suggest that casual surveillance of such targets by people from within their homes—at least with respect to minor deviance—may not have a great deal of crime prevention pay-off.

The results also appear to suggest that kiosk vandalism is more strongly related to certain characteristics of the population living near individual kiosks than to physical factors pertaining to their siting, and in this respect they are consistent with Newman's later (1976) work which showed that the social make-up of
local estate inhabitants contributed more to levels of crime and vandalism than housing design. More closely still, they echo a recent Home Office Research Unit study of vandalism on Inner London council estates (Wilson, 1978), which showed that the 'defensibility' of the environment mattered relatively little when blocks housed large numbers of boys. However, in the context of the present study at least, the pre-eminence of the social correlates of vandalism should be qualified: first, only one 'physical' factor (the degree to which kiosks were overlooked by domestic windows) was compared with a number of social variables of known explanatory importance; and second, given Post Office siting policy, surveillance was measured on a limited range.

In practical terms, the results of the present study suggest that, taking into account other considerations of convenience and visibility, there is little scope for recommending that more care is taken in siting kiosks as near to domestic properties as possible. A corollary of this is that other 'natural' surveillance (from vehicle traffic, shoppers, etc.) which the Post Office tries to maximise may give no more protection against vandalism than the minimal level provided by overlooking windows. This is likely to be at least as good a 'natural' deterrent as anything similar, as is confirmed by the relatively slight effect of siting in busy areas which Mawby found. Nevertheless, to the extent that this study shows that kiosks in council areas, which characteristically house high densities of boys, are particularly prone to damage, these may merit special consideration. It may be that some very high-risk kiosks should be resisted to more overlooked locations. Or—as occasionally happens already with persistently vandalised targets—they may need removing altogether. This usually leads to complaints from users, though in fact they may not be greatly inconvenienced as persistently vandalised kiosks are often left out of order. Furthermore, loss of income to the Post Office is likely to be offset by the savings made in not having to carry out constant repairs.

In view of the fact that there seems little scope for reducing damage through re-siting kiosks, there appears considerable merit in the Post Office's attempts to make kiosks more 'vandal proof'. Notable success has already been achieved in reducing theft by the introduction of steel covers for cash compartments (cash losses in 1976/77 were 4% of the figure for 1971/72). Other 'target hardening' measures such as shatter-proof handsets, recessed dials and reinforced cables may, where they have been used, also have kept in check some of the more serious damage to the telephone mechanism. Moreover, the petty vandalism to the kiosk structure and to directories and notice boards that is currently a problem may be reduced when recent design improvements are more widely introduced. While damage incidents have continued to rise (nationally there were 19% more incidents in 1976/77 than four years before), the target-hardening policy which the Post Office has adopted may well have kept vandalism levels below what they might otherwise have been—between 1972 and 1976 police figures for criminal damage (to all kinds of property but only involving sums of more than £20) rose by 122%,1

1 Some of this increase would be accounted for by the effect of inflation.
In more general terms, the present results also endorse the provision of alternative telephone facilities less vulnerable to vandalism. For some time, the Post Office has been encouraging the installation of rented call boxes (RCBs) for public use in premises such as pubs, shops and laundrettes. Experience suggests that such units sustain minimal damage compared to kiosks, no doubt because they are located in places subject to surveillance by personnel with direct responsibility for the facilities. However, RCBs do not meet the sort of twenty-four hour need served by the 77,000 kiosks now in existence in the United Kingdom, and their merits need to be carefully weighed against the inconvenience and cost of vandalism: the public is usually portrayed as highly concerned about the inconvenience and occasional danger that arises from persistent vandalism in some localities, though the Post Office itself claims that not more than one kiosk in a thousand is out of order on account of vandalism at any one time. Also, it is a point worth bearing in mind that the £1.07m national cost of kiosk vandalism in 1976/77 represented only 1.8% of kiosk income (Post Office Report and Accounts, 1976-77). It seems rather questionable whether these figures would support any more rigorous a policy whereby kiosks are taken out of action when RCB facilities increase.
Chapter 3: The impact of closed circuit television on crime in the London Underground

In Chapter 1 it was suggested that more use might be made of the surveillance role of certain employees who already have a responsibility for the security of their employer's property and for exercising some supervision over public behaviour. One approach which has already enjoyed some popularity in shops has been to provide employees with closed circuit television (CCTV). Such equipment extends the area which can be covered and in theory increases the chances of an arrest. Evidence about the value of CCTV used in this way is not substantial, a little more being known about its usefulness to the police (Hancox and Morgan, 1975). Costs are a severe limitation, of course, and effectiveness, even discounting the possibility of displacement, cannot be taken for granted. For instance, where crime is relatively infrequent the level of vigilance required from those manning a CCTV system may be unrealistic (Young, 1974). There may also be problems in controllers getting a quick enough reaction from other staff or being able to communicate a good enough description of the offender (cf. Home Office, 1973).

The present study assesses the effect—on theft and robbery offences—of equipping staff in the London Underground with CCTV. Some attention was paid in the evaluation to the costs of the system as well as to possible displacement effects. The opportunity for the study was provided by the installation in November 1975 of CCTV in four Underground stations, which were among a number that were particularly vulnerable to what are commonly known as 'muggings'. These comprised attacks on passengers (involving varying degrees of force) for their personal property, committed characteristically by groups of male youths. As the installation of CCTV came after a year's special policing measures in the same vicinity, account also had to be taken of these in assessing the effectiveness of CCTV itself.

The data
The data used in the study came from statistical records of the London Transport (LT) division of the British Transport Police (BTP). With minor exceptions, these offences cover all offences reported on Underground stations and trains. The data analysed refer to all incidents of robbery, assault

1 Twenty-nine of the 276 London Underground stations in operation when the study took place were policed by other divisions of the BTP. Offences committed at these stations are not included.
with intent to rob, and theft from the person committed between October 1973 and November 1976. The term ‘mugging’ (which has no definition in law) is most commonly used to refer to robbery or assault with intent to rob. However, particularly in press and popular usage (Hall et al., 1978), it often embraces offences which are probably recorded as theft but which (as in the case of bag-snatching) might involve a measure of force. A distinction is maintained between theft and robbery in the discussion below, not least because despite concern about the supposed problem of violent ‘mugging’, it serves to show the extent to which the small number of serious offences of robbery are outweighed by the number of thefts.

This said, however, there is little way of knowing how complete a record of offences committed in the Underground is contained in BTP statistics. Inevitably, a proportion of offences will not be reported by victims at all, particularly thefts which are likely to involve less trauma; moreover, though the presence of station staff may facilitate reporting, thefts may not be discovered by passengers until they have left the Underground system. Apart from these omissions (which are probably constant over time), there is some likelihood that for other reasons BTP records underestimate the extent of crime which is reported. A substantial proportion of crime in BTP records is not notified directly by the complainant but is transmitted to the BTP after complaints made to LT staff and police officers of civil forces. Experience suggests that both parties sometimes fail to pass on crime complaints (cf. Crump and Newing, 1974). Furthermore, it seems that where the BTP have difficulty in contacting complainants (as in the case of tourists) to complete and verify details of alleged offences reported to station personnel, these offences are sometimes left unrecorded. The proportion of offences ‘lost’ in these two ways, however, may be small and is likely again to be fairly constant over the time period analysed. Possibly more theft offences than robberies are omitted from BTP records, one reason being that some of the former might find their way into the records of the civil police if the passenger cannot be certain that the loss occurred in the Underground itself.

Distribution of offences
In comparison with theft, robbery occurs very infrequently on the Underground, although it has become relatively more common since 1974 (see Table 3:1).

Although the number of offences on the Underground varies somewhat from year to year, in terms of the very considerable number of users, the risk of being a victim of robbery or theft on the system as a whole is extremely small. Comparing journey figures for 1972 with the average annual offence figures for 1973-76, it appears that only one robbery occurred for each 8.4 million

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1 These are referred to throughout as robbery and theft. A person may be found guilty of robbery if either immediately before or at the time of committing an act of theft he subjects another to force or to the threat of force (Section 8, Theft Act 1968). Theft from the person technically involves no force.
Table 3:1
Number of thefts and robberies in the London Underground system; 1973-1976

<table>
<thead>
<tr>
<th>Year</th>
<th>Robberies</th>
<th>Thefts</th>
<th>Ratio (R:T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>70</td>
<td>3569</td>
<td>1:51</td>
</tr>
<tr>
<td>1974</td>
<td>74</td>
<td>6105</td>
<td>1:82</td>
</tr>
<tr>
<td>1975</td>
<td>121</td>
<td>5081</td>
<td>1:42</td>
</tr>
<tr>
<td>1976</td>
<td>109</td>
<td>3487</td>
<td>1:32</td>
</tr>
</tbody>
</table>

journeys made. With regard to theft offences, one offence occurred for each 173,000 journeys made.¹

Although in general theft and robbery offences occur with the greatest frequency at those stations dealing with the heaviest passenger traffic,² user levels alone do not explain all the variation in risk figures for theft; certain highly-used stations located in office areas (e.g. Bank/Monument, Liverpool Street) have relatively low levels of theft, while theft levels are high at some stations dealing with fewer passengers but located in shopping or tourist areas (e.g. Knightsbridge, Gloucester Road).

The risk of robbery and to a lesser extent theft was disproportionately high in the southern sector of the system (particularly at stations close to the Stockwell interchange) which first attracted attention in 1972 on account of 'muggings' (see Baxter and Nuttall, 1975). As Table 3:2 shows, during 1974-75, the 19 stations (8% of all stations for which data were available) south of the Thames on the Northern, Victoria and Bakerloo lines accounted for 74 reported offences of robbery (38% of the total).³ Theft figures also reflect this pattern but much less markedly: 12% of all thefts were committed in the same area. While it may be that stations in the southern sector were genuinely riskier with regard to robbery offences, it is also possible that the attention paid by the media to 'muggings' in this locality resulted in certain marginal offences being inflated in seriousness and defined as robbery. Nevertheless, the vulnerability of southern sector stations with regard to offences against passengers is clear.

Crime prevention measures
The concentration of offences in the southern sector led in the first place to the setting up of special police patrols in station areas. These began at the end of 1974. The information available about these patrols is incomplete. Broadly

¹ 'Journeys' refer to journey stages taken; 'user' levels (see Table 3:2) to passenger traffic entering, leaving or interchanging at individual stations.

² Over all stations, the correlation between the estimated annual user level (1972 figures) and the theft rate for 1974 was high (r = 0.85).

³ The BTP practice is followed of allocating offences committed between stations to the next station in the direction of travel.
Table 3:2
Risk of robbery and theft in the London Underground system

<table>
<thead>
<tr>
<th>Stations</th>
<th>Annual uses 1972 (000,000s)</th>
<th>Thefts (annual average 1974–1975)</th>
<th>Robberies (annual average 1974–1975)</th>
<th>Risk of theft per million users</th>
<th>Risk of robbery per million users</th>
</tr>
</thead>
<tbody>
<tr>
<td>All southern sector stations (n = 19)</td>
<td>111.3</td>
<td>651</td>
<td>37</td>
<td>5.8</td>
<td>0.33</td>
</tr>
<tr>
<td>All other stations (n = 228)</td>
<td>1462.9</td>
<td>4942</td>
<td>60.5</td>
<td>3.4</td>
<td>0.04</td>
</tr>
<tr>
<td>All stations (n = 247)</td>
<td>1574.2</td>
<td>5593</td>
<td>97.3</td>
<td>3.6</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Speaking, police effort was concentrated in the vicinity of Stockwell on Friday and Saturday evenings, high-risk times for 'muggings' to occur. It fell into three stages. For an initial period, between the end of September and the beginning of November 1974, the patrols involved both the Metropolitan Police and British Transport Police CID officers. Following this, plainclothes CID officers from the BTP policed the area alone. At the end of March 1975 the CID patrols were replaced by uniformed squads from the BTP which operated until the beginning of December 1975. There is, however, no detailed record of which particular stations were subject to police vigilance, of the numbers of police involved, or of further patrols, additional to those mentioned above, conducted by civil police forces at this time. Because of this, there is some difficulty in interpreting how effective the special patrols were.

As Table 3:3 indicates, the number of thefts recorded in the southern sector during the main period of heightened police activity was 27% less than in the preceding period of normal policing, a fall that was significantly more marked (p < 0.001) than that recorded at other Underground stations. There was a marked increase in robberies in the southern area over the same period; this

Table 3:3
The effects of special policing

<table>
<thead>
<tr>
<th></th>
<th>Theft</th>
<th>Robbery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 months before special policing</td>
<td>12 months during special policing</td>
</tr>
<tr>
<td>All southern sector stations (n = 19)</td>
<td>778</td>
<td>571</td>
</tr>
<tr>
<td>Other stations (n = 228)</td>
<td>4884</td>
<td>4490</td>
</tr>
<tr>
<td>All stations (n = 247)</td>
<td>5662</td>
<td>5061</td>
</tr>
</tbody>
</table>

NB: To enable comparison to be made with the figures in Table 3:4, the 'before special policing' figures in this table refer to crimes recorded in the 12 month period October 1973-September 1974. As the police activity continued for 14 months, the 'during special policing' figures represent 12/14 of actual reported crime.
was of greater magnitude than a similar increase at other stations, though the difference was not significant.

Three explanations of these results suggest themselves. First, with regard to the more statistically pronounced trends in relation to thefts, it is possible that the decrease at southern sector stations was the result simply of an atypically high level of theft at these stations prior to special policing (i.e. a regression to the mean effect). A second explanation is that the conflicting trends in relation to robbery and theft are largely spurious: one might assume that the distinction between the two offences is so unreliable that they can only legitimately be considered together. (Doing this, the combined offences fell by 23% in the southern stations during police activity and by 8% elsewhere (p<.01.).

Thirdly – and this is a more convincing explanation – it is likely that police action, while effective in deterring thefts committed largely as opportunities present themselves, often in crowds, has considerably less effect on more serious offences involving premeditation and usually taking place in situations where it is clear that the police are not present. This explanation is supported by other research (Chaiken et al., 1974) which showed that additional night patrols in the New York system were more effective in reducing minor crimes than serious offences. In any event, the evidence in this case suggests that the pattern of robbery offences was unaffected by the police initiatives. The presence of the police may even have elicited a higher reporting rate from the public – one which did not apply to thefts because losses are not always discovered in the Underground or its close vicinity.

The installation of CCTV

Special police patrols operating in the southern sector of the Underground were removed at the end of the first week of December 1975. This decision was taken following the installation of a CCTV monitor control at Stockwell which began to operate on 24 November 1975; the CCTV provided the facility to view from the Stockwell control, station areas at Stockwell, Clapham North, Clapham Common and – a matter of weeks later – at Brixton. The units installed at these stations combined fixed cameras fitted with 35mm lenses with microphones. They were mounted externally at vantage points in each station and provided a view of all principal station areas – platforms, ticket halls, interchange concourses, areas at the foot and head of escalators, together with other high-risk points for crime or vandalism. Where necessary wide-angle lenses were fitted. The cameras were quite conspicuous to passengers and notices were also posted in the stations informing the public that CCTV was in operation.

Signals from the equipment are relayed to four 12'' monitor screens1 and speakers at Stockwell, which are continually manned during passenger traffic

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1There are now eight monitor screens (arranged in two banks of four) in the Stockwell control room; of the additional four, three provide surveillance of South Wimbledon, Balham, and Tooting Broadway stations. The fourth monitor provides the facility to playback pictures video-recorded by the others.
hours. The controller can either elect to observe a scene of his choice on these monitors or may switch them to scan all station areas automatically at seven second intervals. The controller has several means of dealing with an incident: contact may be made with station staff or the nearest police room; public address announcements may be made to any station areas selected; and – in the case of incidents on the Victoria line – contact may be made through the line controller, with train drivers. A further feature of the crime control measures taken in the four stations at this time was the installation of alarms in all ticket collectors’ boxes; when pressed these operate sirens on the top of the boxes and hold the camera on the collector’s box until such time as the Stockwell operator cancels the signal.

The method used to evaluate the effectiveness of the CCTV installations was to compare the distribution of reported cases of theft and robbery between the four stations subject to surveillance and other stations in the Underground, particularly the remaining stations in the southern sector, during the first year of complete CCTV operation (December 1975 – November 1976) and an earlier one-year period before the commencement of police patrols at the end of September 1974.

Results
At those stations subject to CCTV surveillance, recorded thefts were nearly four times lower during the period of CCTV compared to the period before police patrols began (see Table 3:4). This reduction was significantly greater than that at the 15 other stations in the southern sector not subject to CCTV surveillance where theft offences were about 1.4 times lower (p<.001). It was also greater than the slightly more pronounced fall at the remaining Underground stations (p<.001). With regard to robbery, the decrease in the small number of such offences at the four stations with CCTV was significantly different from the doubling of robbery offences at the stations.

Table 3:4
The effects of CCTV

<table>
<thead>
<tr>
<th></th>
<th>Theft</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 months before special policing and CCTV</td>
<td>First 12 months of CCTV</td>
<td>12 months before special policing and CCTV</td>
</tr>
<tr>
<td>Stations with CCTV (n = 4)</td>
<td>243</td>
<td>66</td>
<td>9</td>
</tr>
<tr>
<td>Other southern sector stations (n = 15)</td>
<td>535</td>
<td>393</td>
<td>13</td>
</tr>
<tr>
<td>Other stations (n = 228)</td>
<td>4884</td>
<td>2962</td>
<td>43</td>
</tr>
</tbody>
</table>

NB: The periods compared here comprise the 12 months directly before the introduction of special policing patrols (October 1973 – September 1974; as in Table 3:3), and the 12 months directly following the start of CCTV operations (December 1975 – November 1976).
not in the southern sector (p<.05), though it was not significantly different from the slight increase in these offences at the other southern sector stations. Taken together these results suggest therefore that CCTV reduced the incidence of both theft and robbery in the four stations where it was installed.

Some attempt was made to consider whether any displacement of offences occurred as a result of the CCTV installations. Temporal displacement was unlikely because the CCTV system operated at all times, but some geographical displacement of offences could not be ruled out, either to locales outside the Underground, or to stations within the system not covered by CCTV. There was little possibility of knowing whether any incidents were displaced outside, as such offences were likely to be 'lost' in the greater volume of street offences. However, comparison of crime levels between stations subject to CCTV and other nearby stations in the southern sector provides evidence that is consistent with (though not proof of) some displacement of theft offences. Comparison of the first twelve months of CCTV operations with an equivalent period before special police patrols (see Table 3:4) shows that at the fifteen southern sector stations not subject to CCTV thefts fell by 27%, while in other stations of the Underground they fell by 39%—a significant difference (p<.01).

Moreover, closer examination of the pattern of thefts in the southern sector shows that the eight stations furthest away from those with CCTV (to which it might be assumed crime was least likely to be displaced) experienced a drop in thefts (45%) similar to that outside the southern sector. In contrast, at the seven nearer stations (which admittedly had higher levels of crime, more akin to those at stations where CCTV was installed) the drop in thefts was less pronounced at 24%.

Whether or not some thefts were displaced by the CCTV installations, the number of robbery offences is too small to conclude much about any displacement of robbery. In fact, though, the increase in robbery in the southern sector stations without CCTV was less than that at other stations, which does not suggest that displacement occurred.

Conclusions
This analysis of the effects of equipping station staff with a CCTV system in four relatively high-risk stations in the London Underground suggests that CCTV was useful, at least in the first year of its operation, in reducing the number of thefts and robbery offences at target stations. There is some evidence consistent with the fact that some theft offences might have been displaced to nearby stations, though it cannot be taken as definite proof that displacement occurred. If it did, it may have nullified up to 85% of the savings in theft offences apparently produced by the CCTV installations.

The usefulness of CCTV at the stations where it was installed supports London Transport’s view that the cameras have proved effective in combatting vandalism and theft. (Their value for transport operations has been the main factor in the decision to extend CCTV to six central Underground stations, but
the anticipated crime prevention benefits have not been ignored.) It would seem that the publicity given to the installations, particularly at the stations where they were located, the visibility of the cameras, and the fact that station users were able to see that monitor controllers could communicate to other staff, all acted as a deterrent to potential thieves. It also seems possible, though there is no evidence available to test this, that a deterrent effect was further realised by improved arrest rates. It is possible, though again untestable, that the installation of alarms in ticket collectors' boxes was additionally useful in preventing crime. There is no reason to think, however, that the change in crime at the four stations studied would have been greatly different had CCTV been the only preventive measure introduced. A caveat that must be made is that the effectiveness of the system might have resulted to some extent from its novelty and that as time goes on offenders may discover that CCTV is less to be feared than they had imagined. This implies that effectiveness should continue to be monitored.

The study has been useful, therefore, in providing some further evidence of the value of CCTV as a surveillance aid for employees. The present results are in line with informal opinion that CCTV in the new Metro system in Washington has been a valuable part of the security measures which were incorporated into the design of the system (see Nation's Cities, 1977), though it should be said that detailed information about the part CCTV plays there is not yet available. They also appear to confirm a point which has emerged from retailers' experience with CCTV (Home Office, 1973): namely, the need for sophisticated equipment and communication systems which can be seen to result in action. In this case, camera coverage was extensive and several means were provided of establishing contact with the police or other station personnel. However, whether simpler equipment (perhaps even 'imitation' cameras) can operate as a less costly deterrent to crime, at least in certain circumstances, is a question which cannot be satisfactorily answered at present.

Although this study included an assessment of the effectiveness of extra policing in relation to Underground crime, as well as that of CCTV, it is difficult to draw any conclusions about the relative merits of the two strategies. This is because there is not enough information about the policing measures to decide how any effects were produced. In any case, the result of police action in apparently 'increasing' robbery (theft declined significantly) is particularly difficult to interpret.

Assessing the cost-effectiveness of the two strategies is problematic also, not least because there is virtually no information available on the police resources used. With regard to the CCTV system, installation and operating costs in the first year are known (the four installations studied cost London Transport £128,000 at 1975 prices). Thus, taking crime figures for the first year only,

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1 This includes the cost of the Stockwell control rooms. To incorporate the facilities necessary to extend surveillance to South Wimbledon, Balham and Tooting Broadway stations, and to videorecord events, raised the final cost of the 'Stockwell system' to £200,000.
and assuming that theft and robbery would have followed the trend at other southern stations not covered by CCTV, the cost per prevented theft was about £1140 (discounting any possibly displaced thefts), and per prevented robbery £31,450. (Other assumptions can be made. If theft and robbery had followed the trend for stations outside the souther sector, the cost per prevented theft was £1570 and £10,270 per prevented robbery.) It would be dangerous, however, to place much weight on these figures, the uncertainty of displacement apart. The costs of the system will be written off over a number of years and might be offset by a number of benefits other than reduced robbery and theft offences: as mentioned earlier, London Transport view the installations as useful for crowd control, as a means of reducing vandalism (which it is claimed is now at a lower level), reducing assaults on staff, and promoting a greater willingness on the part of the public to use a 'safer' Underground system. In addition, the reduced rate of robberies and thefts might have led to some saving of police time and of other costs associated with bringing offenders to justice.
References


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