Closed-Circuit Television: Its Role in Reducing Burglaries and the Fear of Crime in Sheltered Accommodation for the Elderly

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This article discusses an initiative that used closed-circuit television (CCTV) systems to protect elderly people from burglary. The cameras were installed in "sheltered accommodation." These are buildings specifically designed for the elderly who, the police had found, were particularly vulnerable. They were easily deceived into admitting burglars onto the premises, allowing them to bypass existing security systems. They were also poor witnesses, who failed to identify burglars when they were caught. The police were convinced that many of the burglars committing these offenses had previous convictions and would therefore be deterred by the presence of cameras. The CCTV system aimed at deterrence, through the use of dummy cameras and warning notices, and at offender detection, through the use of concealed cameras. During the period of the evaluation, recorded burglary rates and levels of fear reduced significantly and there were several arrests in which film was used in evidence.

Keywords: CCTV; burglary; fear of crime; elderly people; sheltered housing.

The Crime Prevention Effectiveness of CCTV

Evidence of the effectiveness of closed-circuit television (CCTV) systems in reducing crime is limited. The few evaluations that have been carried out have arrived at different conclusions about its effectiveness.

One study of the impact of the installation of CCTV in four railway stations on the London Underground, for instance, suggests that it can be effective in reducing levels of theft from the person (Mayhew *et al.*, 1979). These proved to be

> nearly four times lower during the period of CCTV compared to the period before police patrols began. This reduction was significantly greater than

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> that at the fifteen other stations in the southern sector not subject to CCTV surveillance where theft offenses were about 1.4 times lower ($p < .001$).

On the other hand, a more recent study of a similar initiative taken in central London (Oxford Circus) found no evidence that the installation of cameras had reduced offenses of theft, assault, or robbery in the area. It is relevant to note in connection with the initiative to be described below the importance attached in the report to the visibility of the system and its effect on perceived and actual risks of apprehension (Webb and Laycock, 1992).

The available evidence suggests that the introduction of CCTV in car parks can reduce levels of car crime (Poyner, 1991). There have been several recent projects of this kind in cities in the United Kingdom and these have generally led to reductions in various categories of car crime. However, it is again worth noting in the light of the present initiative that the mechanisms through which these outcomes were produced are not understood.

Evidence of the effect of CCTV systems in commercial settings is again inconclusive. One study found that the introduction of CCTV in a supermarket was associated with an immediate and dramatic reduction in losses; for example, cash losses from cash registers dropped from £500 to £20 per week *{Burrows,* 1991). By comparison, another study of the effect of the installation on CCTV in three small businesses found no noticeable improvement (Tilley, 1993b).

Evaluations of the effect of CCTV on domestic burglary are more difficult to find. A recent review (Poyner, 1993) examined two schemes and, in view of the limited evidence available, was duly cautious in concluding that CCTV surveillance was a "doubtful measure" to adopt in response to this offense.

The available literature on this subject clearly needs to be developed. The results of the few evaluations carried out to date are inclusive, and in several instances, they arrive at opposite conclusions about the impact of CCTV systems on levels of crime. The important question, raised by several of these works, concerns the processes through which CCTV systems can impact crime. This issue also requires further investigation. What mechanism is CCTV aimed at firing? Is the intention to deter offenders, detect offenders, or both? As Tilley (1993a) rightly pointed out, the way CCTV is implemented will influence these and other mechanisms. If CCTV is to have an effectiveness that is more than just transitory, the increased risks perceived by offenders of being caught must be grounded in an increase in the real risk of being apprehended.

There is also a clear need for monitoring and evaluation of CCTV systems once they have been installed. As Burrows (1991) maintains,

> the case for monitoring and evaluating crime prevention measures is largely self-evident: without this discipline there is no way of developing initiatives to full effect, of tuning them to respond to inevitable adjustments in criminal methods—or indeed justifying their continuation.

The CCTV project discussed in this paper was introduced by the Merseyside Police Force, England. It was aimed at reducing actual levels of burglary and the fear of this offense on the part of elderly citizens. During the evaluation period, the project was successful on both counts and the paper discusses how these reductions were accomplished.

Background to the Project

The CCTV systems were introduced to protect housing specifically designed for elderly people. These premises, referred to in the United Kingdom as sheltered accommodation, are normally grouped on one site. They typically have a warden in residence on the complex, who can be summoned for assistance through an emergency call system (Butler *et al,* 1983). All the 15 housing schemes that were the focus of the initiative generally conform to this description. They vary in size, accommodating between 20 and 60 people in single- and multioccupancy apartments. Four of the 15 units are owned and maintained by the local municipality (Sefton Metropolitan Borough Council) and the remaining 11 by five private housing associations.

Prior to the installation of the CCTV system, the level of security in each sheltered unit varied, but most had a door entry system whereby people wishing to enter the premises had to communicate through an intercom system and be allowed access by someone inside the building.

Rationale for the Project

The project was financed from the Urban Crime Fund Initiative, which was a central government initiative, located in three police forces in England. It provided the Merseyside Police Authority with £3,375,000 and the Authority contributed a further £1,125,000.

Each police division and local municipality in the Merseyside area was invited to compete for funding by submitting proposals for crime prevention initiatives. In their bid for funding, the sergeant and constable

who designed this CCTV project focused on the vulnerability of elderly people. They explained how CCTV would cut down on the number of burglaries by serving as a general deterrent and by assisting in the apprehension and identification of any offenders who were undeterred and attempted to bypass the visible cameras.

Their experience confirmed that sheltered accommodation units presented criminals with "easy targets." Even in cases where crime prevention measures, such as access control, had been installed, elderly residents were easily persuaded to bypass them and allow intruders onto the premises.

When burglaries occurred in the housing schemes, they increased residents' feelings of vulnerability. These events were found to damage the quality of life of residents further because of the blaming that was observed to take place after someone had been "duped" into allowing an offender onto the premises.

According to the police, many of the offenders caught for this type of offense in the past had previous convictions for similar offenses. As long as accurate descriptions were obtainable from witnesses, identification was easier because the offenders were already known to the police. Unfortunately, elderly residents made poor witnesses. They were frequently unable, and sometimes too frightened, positively to identify offenders once they had been caught. This meant that there was invariably insufficient evidence to charge them.

Installation of CCTV Systems

Between May and November 1992, CCTV camera systems were installed in 15 housing schemes and signs were prominently displayed at the entrances to the premises advertising their presence. The total cost of the project amounted to £45,000 (approximately £3000 per unit) and was met from the Urban Crime Fund.

For preventive purposes, between one and five dummy cameras were situated in strategic positions where they were most likely to be seen by potential offenders (e.g., in the front entrance halls). The apprehension potential of this initiative was provided by one or more concealed cameras. These covert cameras were positioned in such a way that any offender attempting to avoid being filmed by one of the visible, dummy cameras (e.g., by covering the face) would be caught on film by one of the covert ones. These were concealed in fixtures and fittings, filming through a 3 mm lens aperture and linked to a 24-hour video recording system kept in the warden's office or flat,

The technical specifications of the CCTV systems were as follows:

1. A charged coupled device (CCD) color camera(s) with low light application fitted with a pinhole lens to F3.5 for covert surveillance.
2- A time-lapse video cassette recorder with an on-screen time and date generator to display on the tape and monitor. The equipment had the capability to record for 24 hours and a special input facility to trigger the recorder from time-lapse into real time by an external switch to be activated on opening the controlled door to the premises.
3. A 14-inch color monitor.
4. Two (or more) internal dummy cameras.
5. CCTV warning signs sited internally and externally at strategic locations.

It was not intended that the monitors would be observed constantly. If an incident occurred, the tapes would be available for viewing purposes. The officers estimated the maintenance costs of the system to be low (approximately £50 per year, or $75 at present exchange rates). At the time of writing, these costs are now being met by the owners of the properties (i.e., the housing associations and Sefton Metropolitan Borough Council).

The project managers constantly monitored the crime situation in each housing scheme and, where this was appropriate, the CCTV system was modified or extended when burglaries or attempts were committed after installation. For example, at one housing scheme, offenders entered and exited the premises by kicking in a rear door panel. An additional "overt" camera was sited covering the rear of premises to prevent a repetition of this type of offense.

The Mechanisms through Which CCTV Was Designed to Impact on the Problem

The CCTV system installed in each of the 15 schemes was intended to impact on the problem identified by the officers through several mechanisms:

1. The high visibility of the signs advertising the fact that CCTV cameras were operating inside the premises and, in some instances, the fact that the cameras could be seen as one approached the entrances were intended to deter the offenders who typically committed such offenses. Because they were known to the police, it was held that they feared the identification potential of the cameras.

2. The concealed cameras would film those who were undeterred by the visible cameras. In some cases, this would provide further evidence of criminal intent by capturing attempts to disguise identity. When intruders were caught on the camera in this way, the case would be investigated by CID officers.
3. Because the operation of the cameras was outside the control of residents, burglars could not manipulate them as a means of bypassing the system as they had done with other security measures.
4. The hoped-for reduction in the level of crime committed against these premises and their residents, together with the reassurance given by the presence of the cameras, would reduce residents' fear of crime and feelings of vulnerability.

An Evaluation of the Effects of the CCTV

It was a condition of the contract between the evaluators and the Merseyside Police Authority that the evaluation should be completed and reported by June 1993. This meant that it was not possible to assess the longer-term effects of the CCTV initiative and to investigate any halo effects that might have dissipated with time.

For evaluation purposes, a comparison was, therefore, undertaken of two time periods. The preimplementation period refers to the period between June 1, 1991, and May 31, 1992. The postimplementation period relates to the time between CCTV installation and the end ofthe evaluation period (March31,1993).

As systems were installed in different housing schemes on a rolling installation program, i.e., at different times, the postimplementation period varied from site to site (see *Table 1).* For this reason, the number of burglaries were compared on an offense per month basis.[1]

The Incidence of Burglary

Comparison of levels of recorded burglary and attempted burglary on an offense per month basis for the pre- and postimplementation periods revealed a decrease of 79%: from 4.25 offenses to 0.9 offenses per month. In 13 of the 15 schemes, no offenses of burglary were recorded for the period after CCTV was installed. One scheme had no burglaries in either period, and in another, there was a slight increase after camera installation.

Table 1. Length of Postimplementation Period

Scheme	Time between Installation and March 31, 1993 (in Months)
Schemes 1-4	10
Schemes 5-10	9
Schemes 11 and 12	8
Scheme 13	6
Schemes 14 and 15	5

The result of a Wilcoxon matched-pairs signed-ranks test shows that burglaries in the postimplementation period were *significantly lower* than they were during the preimplementation period *(P* = .0019).

Arrests and Convictions

Thirteen people were arrested and charged in connection with offenses of burglary and attempted burglary committed against the targeted schemes during the preimplementation period. In the postimplementation period, three people were arrested and charged. This represents a 32% improvement in the arrest rate (number of arrests as a percentage of the number of offenses) from 25% to 33% *(Table 2).*

Evidence against the three people arrested after camera installation was provided by the covert camera. They all pleaded guilty. One was sentenced to 42 months imprisonment; the second case was adjourned for reports. The third individual had the offense taken into consideration.

The improvement in the arrest rate supports the project managers' claim that the video recordings increase the probability of detection. Although the number of cases is small, the guilty pleas entered by these defendants suggest that the videotape evidence was difficult to contest.

CCTV, Victimization, and Fear of Crime

Preimplementation and postimplementation surveys were carried out to find out what happened to levels of fear after the cameras were installed. The postimplementation survey took place 6 months after the preimplementation interviews. In both surveys, resi-

'Because ofthe variations in the length ofthe postimplementation period and the time restriction on the evaluation, it was not possible to investigate the effect of any seasonal variations in burglary rates. However, this would appear to be an unlikely explanation of the observed reductions given the fact that the postimplementation period for most of the schemes covered many of the same months as the preimplementation period.

Table 2. Burglaries Committed and Arrests Made

Time Period	Preimplementation	Postimplementation
No. offenses	51	9
No. arrests	13	3

dents were asked about their own direct experience of burglary and attempted burglary (i.e., offenses that had been committed against their own home). They were also asked about their indirect experience of such crimes (i.e., their knowledge of offenses committed against other tenants' homes and the communal areas of the scheme) and about how easy it was for strangers to enter their housing scheme without permission. Other questions asked about residents' fear that people could burgle their homes, enter the building pretending to be officials or relatives, and the likelihood of such incidents occurring.

The preimplementation survey revealed several key findings:

1. Most residents (89%) had experienced at least one kind of victimization (whether direct or indirect) over the previous 12 months. Fifty-five percent had been exposed to two or more different types of victimization.
2. Twelve percent of respondents had personally experienced a burglary during the previous 12 months.
3. Fear levels were generally high (e.g., 47% of respondents were "very" or "fairly" worried about bogus officials gaining entry to the building).
4. Levels of worry about their own flat being burgled were significantly associated with residents' experience of victimization (chi-square = 16.39, df 4, significance = .0025). The proportion of respondents who expressed worry about their flat being burgled steadily increased with the number of different types of victimization to which they had been exposed.
5. Most respondents (74%) believed that it was "easy" for a stranger to gain access to their housing scheme without permission. In most cases (53%), the reason given was that other residents made it easy for the burglars by admitting them into the building. They activated the door entry system without checking to see if callers had a legitimate reason to be on the premises or they allowed themselves to be followed in through the front door. Also, 32% stated that strangers could get in because doors were left unlocked or insecure.

After the installation of CCTV, most residents were less worried about becoming a victim of burglary and believed it was less likely to happen to them. Prior to installation, almost half the sample (46%) stated they were either "very" or "fairly" worried about someone breaking into their flat. When they were interviewed after the cameras had been installed, nearly three-quarters (74%) of residents interviewed were *less worried* about someone breaking into their home; 75% estimated that this was *less likely* to occur.

The majority of residents (56%) stated that it was *more difficult* for strangers to enter the building without permission once the cameras had been installed. When asked to indicate why they considered that entry was harder, the majority (74%) mentioned the CCTV camera, many referring specifically to its deterrent effect and the fact that people knew they were "being watched":

"The camera puts people off trying to get in."
"The camera is an excellent deterrent."
"People know there is a video camera in operation."

Conclusions and Discussion

The evaluation of this CCTV project found convincing evidence that the initiative had achieved its primary objectives. After installation of the CCTV systems, there was a significant decline in the number of burglaries. Feelings of vulnerability and fear were also reduced. Most residents thought it was more difficult for strangers to gain access to the premises after the system had been installed. The majority were less worried about becoming a victim of crime and they considered that this was less likely to occur. Many also expressed feelings of increased safety and security, which they attributed directly to the CCTV system.

Ideally, the effects of the initiative would have been monitored over a longer period of time to examine whether burglars found other ways of entering the premises, any halo effects that dissipated with time, and the adaptive measures of the project managers and how successful they were in arresting any increases. The evidence does, however, suggest that CCTV cameras can have a deterrent effect on burglary, provided that the conditions noted earlier are satisfied. The presence of cameras was obvious to anyone approaching the buildings and some persistent offenders were arrested.

The scheme also confirms the importance attached in previous literature to on-going evaluation and monitoring of such initiatives. These and other project management skills also proved to be of crucial importance to the success or failure of other projects introduced as part of the Merseyside Urban Crime Fund Initiative. It will be of assistance to future project managers to note the mechanisms through which the project out-

comes were achieved (Tilley, 1993a) and the options the project managers still have available should crime start to increase in any of the targeted schemes:

1. The CCTV systems reduced crime in the schemes by deterring potential offenders who would be concerned about being filmed and recognized. The signs advertising the fact that the premises were protected by CCTV obviously played a crucial role in this respect. The system did not make access to the premises more difficult for offenders and the signs were as relevant as the CCTV system itself in deterring would-be offenders. Laycock (1986) made a similar discovery in connection with property marking and the labels announcing that property is marked.
2. The CCTV systems reduced crime in the sheltered accommodation schemes by increasing the probability that known offenders who entered the premises would be identified and apprehended. They were then more likely to be convicted because of the quality of the evidence produced through the cameras.
3. There was some evidence from the postimplementation interviews that the CCTV systems reduced crime in the schemes by making residents more security conscious.
4. Strong evidence exists to support the argument that the CCTV system affected fear directly through the reassurance the presence of the cameras offered, and indirectly, by bringing down the amount of burglary in the schemes (see *Figure 1).*
5. The CCTV system also reduced fear on those occasions when the video recordings were used to prove to residents that apparently suspicious and anxiety-provoking incidents were, in fact, quite innocent occurrences. Examples were found where reported "prowlers" and "suspicious strangers" in the building proved to be legitimate visitors to the premises. Had the tapes not been available to establish the identity of the people in question, residents and staff would have been left with the impression that an undetected intruder had been loose on the premises.
6. The introduction of the CCTV initiative reduced crime because the wardens and the police were conscious of the need for formative evaluation. As a result of this ongoing monitoring, additional cameras were introduced or originals were re-sited after burglaries. Burglars had successfully entered the premises, thereby revealing weaknesses in the system to vigilant crime prevention officers.

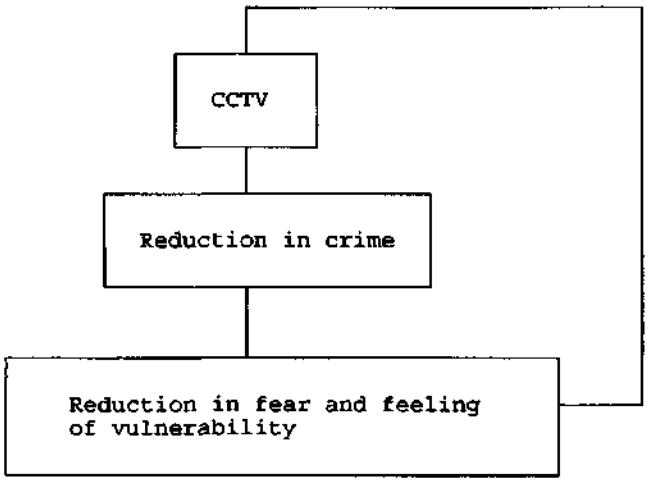

Figure 1. Direct and indirect effects of CCTV on levels of fear.

Context

The operation of the mechanisms fired by the installation of the CCTV systems and their impact are mediated by the context within which they are introduced (Tilley, 1993a). The project managers are confident that the only change in the housing scheme context, relevant to burglary prevention, was the introduction of the CCTV systems.

It was explicitly recognized from the start that the system would assist only in the apprehension of known criminals who could be identified from the tapes. The system was not designed to detect offenders in the act; the tapes were examined after an incident had occurred. The apprehension capabilities of the system depended ultimately on the quality of the criminal intelligence system and the follow-up enquiries of the CID.

Publicity about the scheme was confined to the notices announcing the presence of the CCTV system and the visible presence of the cameras themselves. Project managers deliberately avoided press coverage that would have revealed the "covert" element of the scheme.

Future Strategies

The absence of press publicity for some months after system installation suggests an option for the project managers should the notorious "life-cycle phenomenon" present itself and burglary start to increase (Berry and Carter, 1992). Giving publicity to the scheme, to reinforce the message that the risks of breaking into premises are high, may prove to be neces-

sary at intervals to stem such increases. A further deterrent could be provided by announcing the presence of the hidden cameras.

Results from the survey relating, in particular, to three of the accommodation schemes where residents were critical of aspects of the physical security have been fed back to the project managers. In these cases, further investigation may reveal the need for the introduction of other security measures.

As proved to be the case with other initiatives (e.g., the Kirkholt Burglary Prevention Project) (Forrester *et al.,* 1988), systematic planning and implementation, close monitoring, and continuous system adaptation obviously played a key role in accounting for the success of this project. The scheme is now being extended to other sheltered accommodation units in the local authority area.

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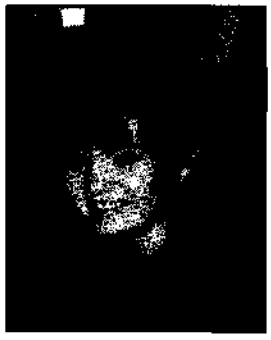

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