

TELEVISION SURVEILLANCE AND CRIME PREVENTION: EVALUATING AN ATTEMPT TO CREATE DEFENSIBLE SPACE IN PUBLIC HOUSING¹

MICHAEL C. MUSHENO
Arizona State University

JAMES P. LEVINE
Brooklyn College, City University of New York

DENIS J. PALUMBO
University of Kansas

IN RECENT YEARS A STRATEGY OF CRIME PREVENTION HAS BEEN ARTICULATED based on the premise that the exercise of vigilance and control by private citizens over their environment is more effective than the activities of police in deterring crime. In this vein, Jacobs (1961) has argued that intense community utilization of sidewalks, parks, local shops, and other public places provides a regular stream of eyewitnesses who are capable of observing people in trouble and intimidating those contemplating crime. More recently, Newman (1972) has extended this idea and devised the term "defensible space" to symbolize the various physical aspects of urban housing complexes that presumably can enable residents to better engage in cooperative self-protection.

Most of the design strategies advocated by Newman relate to the construction of new buildings, such as proposals to eliminate "scissors" stairways and "blind" mailbox vestibules. However, some rather ingenious adaptations of modern electronic technology are suggested to modify existing housing projects in which faulty planning has created barriers that prevent tenants from naturally keeping watch on each other. The goal of the proposals is to provide residents with audio and/or visual coverage of particularly vulnerable areas, such as lobbies, through the imposition of closed-circuit television cameras (CCTV) and sound amplification equipment. It is hypothesized that such surveillance opportunities should deter crime, lessen tenant anxiety, and create the image of a safe environment (Newman, 1972:80).

The effectiveness of using electronic apparatus to render public housing more defensible has rarely been scrutinized. Assessments have been almost entirely impressionistic (Sagalyn et al., 1973:82), so the utility of

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this approach is highly problematic. Our research is an attempt to test whether this intuitively plausible but costly method of increasing tenants' surveillance capabilities and therefore deterring crime actually achieves the intended effect.

THE BRONXDALE EXPERIMENT

The system that we evaluated is a closed-circuit television monitoring system implemented in three buildings of the Bronxdale Houses, a New York City public housing project composed of 26 seven-story buildings, each containing 53 apartments. The cameras are located in the lobby and the elevators, and they transmit pictures continuously to every resident's television receiver on Channel 3, an unused frequency on the television spectrum. The top half of the screen telecasts the lobby and the bottom half shows the inside of the elevator viewed from above. Sounds emitted in these locations are also communicated to tenants' sets.

Although parts of the system were installed as early as 1973, the system did not become fully operational until August 1976 due to a variety of bureaucratic obstacles and construction delays. An on-site inspection of the facilities at that time revealed them to be in good working order. A demonstration of the reception in one apartment produced pictures sufficiently clean to enable the tenant to identify a neighbor as he picked up his mail in the lobby and rode the elevator upstairs. Voices were also faithfully reproduced, and a conversation between two people was quite audible.

Tenants were given a one-page instruction sheet printed in English and Spanish. They were urged to keep their sets tuned to Channel 3 at all times when they were not watching other programs and to report any irregularities to the housing authority police. The services of the project manager were offered if reception problems were encountered.

Thus, the system is a bona fide, full-scale endeavor to implement the precepts of defensible space theory. It is aimed at fortifying the two most vulnerable points in public housing developments, the elevators and lobbies, where 43 percent of all robberies take place (Newman, 1972: 182). The engineering and construction jobs were competently executed, and the equipment utilized was sophisticated. From a technical standpoint, the Bronxdale experiment is a showpiece.

METHODOLOGY

The model guiding our research is fairly straightforward. The dependent variables are actual victimization experiences and fear of crime. The independent variables are the presence or absence of electronic security devices and the extent to which residents take individual precautions to avoid crime. As to the latter, it may well be that both the objective risk

of crime and subjective anxieties about crime are more dependent on personal methods of self-protection, such as karate training or the use of dead-bolt locks, than on the operation of government programs.

We also hypothesized that several intervening variables might mediate between the independent and dependent variables, either lessening or magnifying the effect of the independent variables. Thus, the effectiveness of the television cameras may depend on how much they are actually used by the tenants, how much interaction takes place among the tenants, and by how much trust the tenants have in the police. If tenants relate to each other more, they may be more inclined to use the television monitors to keep watch on each others' comings and goings. On the other hand, if they have little regard for police, they may not report crime even if it shows up on their screens.

To evaluate the impact of the security system and test these hypotheses, we used a pretest-posttest control group design. We devised a criminal-victimization interview schedule and administered it to half of the residents (randomly selected) in each of the buildings designated to receive the video system before implementation of the program (May 1976). The survey gauges their exposure to crime on three levels: actual victimization, fear of crime, and restraints on their normal activities caused by the crime problem (e.g., shopping habits). To the maximum feasible extent we adopted the language in the victimization survey instruments developed by the Law Enforcement Assistance Administration (U.S. Department of Justice, 1974:41-62).²

The other half of the tenants were interviewed three months after the program went into effect (December 1976). In addition to being questioned about their crime experiences and attitudes, these respondents were also asked about their awareness of and participation in the program. Because awareness of the system is regarded as a prerequisite for program effectiveness, we delivered a letter to all tenants describing the system while it was being installed by the housing authority.

Residents of three units in the 26-building housing project that do not have the crime monitoring system were also interviewed on the same before and after basis in order to control for the following factors: (1) non-experimental variables potentially related to crime (e.g., changes in the project's population) that might well account for differences emerging from the pre- and postchange interview waves; and (2) other subsidiary crime fighting measures associated with defensible space. Thus, we chose the following control buildings: Building #7, most distant from experimental building; Building #12, building with management and housing authority police headquarters; Building #17, building with "active" tenant patrol.

We could not randomly assign tenants to control and experimental buildings since most of them were living at Bronxdale prior to the experi-

² We also consulted evaluations of housing security programs (U.S. Department of Housing and Urban Development, 1975). For a review of the strengths and weaknesses of victimization surveys, see Skogan (1975) and Levine (1976).

ment. However, it seems reasonable to assume that there is a random distribution resulting from the unsystematic assignment of new tenants to vacant apartments according to space availability and the haphazard method of selecting buildings to be given the electronic equipment. We did randomly assign tenants in all six buildings to two groups, one of which was interviewed before and the other after exposure to the experimental treatment, which was the introduction of the surveillance project. Thus it is likely that the characteristics of the four categories of respondents surveyed (preexperimental, precontrol, postexperimental and post-control) are fairly similar. This gives us some degree of confidence in presuming that the true impact of the experiment was being measured and results were not contaminated due to disparities in the composition of the various groups studied.

Interviewers were undergraduate students who were given a small stipend for expenses. While they were not professional interviewers, we taught them general field-interview techniques as well as how to conduct criminal-victimization surveys. A graduate assistant was trained to develop and execute a research validation system to make certain that students actually contacted and interviewed tenants assigned to them. Also, to control for potential instrumentation effect, we used a large number of interviewers, randomly assigning a small set of tenants to each interviewer. Last, because some tenants spoke only Spanish, a special group of bilingual students were hired to interview non-English-speaking tenants.

We were able to obtain 110 completed interviews, giving us a response rate of 34.5 percent. Resource limitations precluded call-backs if respondents were not at home the day when the interviews were conducted. Moreover, many of the tenants at Bronxdale were distrustful of the housing authority under whose auspices the survey was done and therefore refused to participate in the survey.

A comparison of the race and income distribution of our respondents with a breakdown of the entire tenant population at Bronxdale obtained from housing authority records suggests that the sample was representative even though it was small. Our sample was 56 percent black, 24 percent Puerto Rican, and 14 percent white, while the total project is 52 percent black, 35 percent Puerto Rican, and 12 percent white. Average gross family income for our sample was \$5,449 in contrast with a figure of \$6,215 for all tenants. Thus, since our sample is representative in socioeconomic characteristics, it is also likely to be representative with regard to the crime problem confronting all tenants.

Despite all of the precautions taken to design and execute a replicable study, we did experience certain environmental quagmires that prevented us from implementing a methodologically clean research design. First, because of the vagaries of government contracting procedures, implementation of the video system was delayed several times. On four occasions, we received final installation dates from the housing authority's contractor, only to have them rescind their promise at the last moment.

This required rescheduling of interviewing times and adjustments in wording of questions, creating a suboptimal survey methodology.

Another complication is that management personnel of public housing projects in New York City are constantly moving from one facility to another as a result of personnel policies concerning seniority and promotions. This flow of officials vitiates the potential for developing an integrated crime prevention policy, and it made it difficult for us to determine the degree of commitment to the success of the security project manifested by the bureaucracy.

FINDINGS

The Crime Problem at Bronxdale. Table 1 indicates that there is a significant crime problem at Bronxdale. While only a relatively small percentage of residents have been subject to serious crime, the incidence of crimes against the person is significantly greater there than in the entirety of New York City in 1972 or throughout the nation as a whole in 1974.

TABLE 1
Bronxdale Victimization Rates
Compared to New York City and National Rates

Type of Crime ^a	Annual Victimization Rates ^e		
	Bronxdale ^b	New York City ^c	United States ^d
Robbery	6.4	2.4	.7
Attempted robbery	2.7	.6	not available
Aggravated assault	1.8	.4	1.3
Simple assault	2.7	.6	1.4
Purse-snatching and pocket-picking	3.6	1.2	.3
Burglary	6.4	6.8	9.3
Attempted burglary	8.2	2.1	2.0
Observed vandalism	50.0	not available	not available
Number of respondents	110	10,229	65,000

^a The categories follow definitions used by the Law Enforcement Assistance Administration in their victimization surveys. See U.S. Department of Justice (1974:74-76).

^b The Bronxdale interviews asked respondents about crime experiences in late 1975 and 1976.

^c The crimes specified are for 1972. The source is: U.S. Department of Justice (1975:71,154).

^d The crimes specified are for 1974. The source is: U.S. Department of Justice (1976:11,24,46).

^e Victimization rates are the number of victimizations divided by the relevant population multiplied by 100 to give percentages.

Burglary is the only crime Bronxdale residents experienced at a lower rate than comparable citywide or national levels (which might be expected since public-housing tenants are unlikely to have as many valuable possessions as dwellers in private residences). While the city and national figures have no doubt jumped somewhat since the surveys were taken, the data provide a *prima facie* case for allocating government funds to Bronxdale for special programs to reduce crime.

Nevertheless, even the Bronxdale crime statistics suggest that the absolute risk to tenants is fairly small. The only exception is vandalism, which one-half of our respondents claimed to have witnessed. However, this crime is an attack on beauty or convenience rather than a serious threat to personal or household security. Thus, a case could be made that the TV monitoring system, which is very expensive, cannot be justified unless it is able to reduce crime significantly.

On the other hand, the system may be justified if it reduces fear of crimes. Table 2 shows that over half the respondents feel unsafe at Bronxdale at night and curtail their activities accordingly. Moreover, this feeling of insecurity has grown: 65 percent of the sample said their chance of being attacked or robbed has increased in the last few years.

Part of the reason for this high fear of crime may be the alarmist publicity of television, movies, and politicians. Also, the very fact that a crime prevention program is introduced may add to people's worries about crime. Indeed, simply asking people questions about crime may well increase their consciousness of the problem and cause them to express feelings that are more intense than they normally experience. Nonetheless, whatever the cause of these fears, it might be contended that reducing them is a legitimate goal of crime prevention programs even if the objective danger itself is unaffected.

TABLE 2
Fear of Crime at Bronxdale

	All Buildings	Control Buildings		Experimental Buildings	
		Pretest Group	Posttest Group	Pretest Group	Posttest Group
Percentage of respondents feeling unsafe at night	50.5	46.2	66.7	50.0	41.4
Percentage of respondents feeling unsafe during day	27.8	26.9	25.0	28.1	28.6
Percentage of respondents thinking of moving out due to crime	27.5	26.9	38.1	28.1	17.2
Percentage of respondents curtailing activities due to crime	53.2	57.7	47.6	50.0	55.2
Number of cases	108	26	21	32	29

The Impact of the Electronic Surveillance Equipment. Table 3 compares the crime incidence in the control buildings before and after the installation of the equipment in the experimental buildings. It shows that there were no major changes in crime levels caused by outside forces. For example, there was no sudden surge of crime brought about by climatic or economic factors that may have camouflaged the salutary effects of the special program. Some crimes increased and others decreased, but all of the changes were minor. In other words, no historic phenomena were operative that might confound the impact of the defensible-space experiment.

If the TV monitoring system is effective, we should expect a lower crime rate and reduced fear in the experimental buildings after the equipment was installed. The data in Table 3 show that, while a few crimes diminished in number, the decline was small. Moreover, while there were slight decreases in four of the eight crimes listed, there were slight increases in the other four. Altogether, the differences between preexperimental and postexperimental groups are trivial, implying that the closed-circuit television system failed to deter crime.

Nor did the program allay people's fear of crime. Table 2 shows that somewhat fewer people were afraid to go out at night and a smaller number said they were thinking of moving out of Bronxdale due to crime than was the case before the experiment. However, daytime fear remained constant, as did the degree to which people curtailed their activities as a means of coping with crime. There certainly was no striking change in residents' concern about crime, and the observed differences may very well have resulted from sampling error.

Explaining the Program's Failure. What accounts for the failure of the program to produce the anticipated results? First of all, it is possible

TABLE 3
Bronxdale Victimization Rates in Control and Experimental Buildings

Type of Crime	Percentage of Respondents Victimized in One Year Control Buildings		Experimental Buildings	
	Pretest Group	Posttest Group	Pretest Group	Posttest Group
Robbery	11.5	4.8	6.2	3.4
Attempted robbery	7.7	0.0	6.5	3.6
Aggravated assault	0.0	0.0	3.1	3.4
Simple assault	3.8	0.0	3.2	3.9
Purse-snatching and pocket-picking	3.8	4.8	6.5	4.2
Burglary	7.7	4.8	3.2	6.9
Attempted burglary	7.7	9.5	16.1	6.9
Observed vandalism	46.2	52.4	50.0	57.1
Number of cases	26	21	32	29

that the time gap between installation and measurement of effects was too small to enable its potential for deterrence to materialize. It takes time for people to accustom themselves to using this kind of system, and it takes even longer for the criminal element to learn that the risk of getting caught in the act is increased due to additional surveillance measures.

However, the survey data suggest that there is an underlying obstacle to success that may persist indefinitely. While 79 percent of the respondents in the experimental buildings said they were aware of the video equipment and 69 percent claimed that they had made use of the system by watching the designated channel on their own television sets, utilization was clearly quite intermittent, with only 14 percent of the people using the monitoring device at least once a day. Consequently, it seems that the chances are fairly slim that any one tenant living in the 53 apartments will be viewing at the precise moment when a crime is taking place. In light of the haphazard nature of the video surveillance, it is perhaps not surprising that not a single respondent had ever seen a crime in progress appear on his screen. The probability of detection therefore remains low and potential criminals may realize this.

Even if the equipment were used more extensively, we discovered certain sociological factors seemingly endemic to public housing projects that may undermine the effectiveness of closed-circuit monitors. A crucial requisite of success is a cooperative relationship between tenants and police, but in our study 45 percent of the respondents thought that the housing authority police were doing a poor job and only 18 percent gave them a good rating. This negative opinion of police no doubt dissuades some people from even attempting to help stop crime because of their cynicism about the ability or desire of the police to do anything if they are called.

Police authorities are partially to blame for this state of affairs. It was proposed that tenants be furnished with direct telephone access to officers on the premises (Newman, 1972:180), but this idea was vetoed, apparently because it would require more work for police and perhaps increase the danger to which they are exposed.³ As a result, tenants who witness crimes on their monitors must call the central New York Housing Authority police headquarters in Manhattan, which then relays the message back to Bronxdale. The delays caused by this roundabout communications process surely must frustrate tenants.

Another threat to the viability of the electronic surveillance is the vandalism that afflicts so many public housing projects, including Bronxdale. In fact, the video scanning system had been installed on a trial basis a few years ago only to have been destroyed by vandals. Although prodigious efforts have been made to prevent a recurrence, including the use of super-strength glass to encase the cameras and air-powered locks with antitampering alarms to guard them, we have learned that attempts are

³ We were informed of police resistance to this idea in an interview with Charles Josephs, the former manager of Bronxdale, conducted on August 3, 1976.

still being made to break the equipment. Periodically, these acts of destruction have made the system inoperative until repairs can be made. The constant turnover of tenants and the abnormally high number of bored youngsters in and around most housing projects may make this an irresolvable problem—wreaking havoc with plans to use technology for crime prevention.

Finally, many of our respondents as well as project personnel told us that the main crime at Bronxdale came from people living within the project itself. This problem of internal criminal activity is not really well integrated into the theory of defensible space, which is aimed primarily at protecting residents from outsiders. If one's neighbors are at the root of the crime problem, self-policing, with or without closed-circuit television, is a much more precarious activity. Almost one-third of the respondents (32.7 percent) said they might refrain from reporting crimes that they witnessed at Bronxdale, and the most frequent reason given was fear of retaliation. The repercussions of being an informer can be severe both physically and psychologically and cause many tenants simply to mind their own business and avoid getting involved unless they or their families are personally under attack. Tenant passivity in the face of crime may be a more rational means of self-protection than intervention.

CONCLUSIONS

Both the survey results and our impressions of the monitoring system gleaned from several site visits and regular discussions with key personnel lead us to be pessimistic about the potential of closed-circuit television as a crime deterrent in public housing. Even if the video surveillance equipment operates smoothly with sustained tenant participation, it probably will not significantly increase the probability that a criminal will be observed in the act and subsequently arrested.

Moreover, certain characteristics of public housing conspire to keep such programs running below optimal levels. First, there is a running battle with vandals, whose destructive behavior can put even the most safeguarded equipment out of commission periodically. Second, there is a decided lack of enthusiasm about such programs on the part of some administrators and most housing police, who are reluctant to take on the additional burdens and responsibilities that the programs create for them. Finally, internal crime represents a significant aspect of the crime problem in public housing, and there is a resistance among tenants to informing on fellow residents.

When the high cost of closed-circuit television systems is compared with the lack of demonstrable benefits, the payoff from this kind of program appears quite meager. Even if future research should demonstrate a moderately greater impact than we discovered, it is questionable whether the investment of government funds is worthwhile. The Bronxdale security program costs approximately \$1.5 million, which represents an ex-

penditure of about \$10,000 per apartment in the three affected buildings. To extend video surveillance to a large part of the public housing population would require astronomical sums, and, in view of the dubious effectiveness of this method of crime prevention, we think these additional expenditures would be a squandering of public funds.

These findings indicate that the theory of defensible space may have little relevance to crime-prevention policy making in public housing. While our research in no way tested the efficacy of designing new buildings in a security-oriented manner, the fiscal crises facing many cities like New York makes the construction of many additional public housing units unlikely in the foreseeable future. Newman (1972:182) himself acknowledges that for many housing complexes already in existence physical redesign is unfeasible, and the use of electronic equipment is the only recourse. Since our research suggests that the latter approach has severe limitations, it is not at all clear whether there are any effective means for enabling tenants living in vulnerable structures to engage in joint self-defense. Individual methods of self-protection and the exercise of greater caution in one's personal life may be the only protection possible for tenants living in such environments.

Whether defensible space is a defensible theory remains unresolved by this research. It may well be that other settings are more conducive to programs that rely on community vigilance as a primary means of warding off crime. Also, other alterations of the physical environment may work better than utilizing tenant-monitored television surveillance. Until positive impacts from such efforts have been carefully measured, we think skepticism is in order concerning reliance on a watchful citizenry as a means of controlling crime.

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