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# Burglary Reduction and the Myth of Displacement

Jerry Ratcliffe

*Burglary remains a significant crime problem across Australia. While the Australian Institute of Criminology is keen to encourage burglary reduction initiatives, it often encounters the view that targeted operations simply displace crime to another area. This perception of total crime displacement is common, but has no strong evidential basis. While some studies have measured a modest degree of displacement in some types of crime, they are rarely significant in relation to the benefits accrued from a successful crime reduction campaign.*

*This paper reviews the existing body of knowledge about spatial displacement in regard to burglary initiatives. It examines the results of a study undertaken to explore the displacement impact of Operation Anchorage, a burglary reduction initiative undertaken by the Australian Federal Police (AFP) in Canberra in 2001. An unusual aspect of the operation was the flexibility accorded to operational commanders; this paper describes a methodology for assessing displacement under these circumstances.*

*The results indicate that no significant spatial displacement took place during the first weeks of Operation Anchorage, yet the AFP was able to reduce burglary by a considerable amount. The implications for broader policy are that crime reduction initiatives can be successful without merely moving crime into another place, and that additional diffusion of crime prevention benefits can add value to a carefully considered crime reduction campaign.*

**Adam Graycar**
**Director**

## Targeted Crime Prevention

Crime prevention is becoming more sophisticated. This is not only because of the growing appeal of situational crime prevention, but also the drive to make the crime prevention dollar go further. Focused crime reduction initiatives can involve targeting particular types of crime and offending (situational) or the identification of crime hotspots (spatial) through the use of crime mapping with a geographical information system (GIS).

Any targeted crime reduction strategy can receive criticism by the very nature of being targeted: some areas will receive crime prevention benefits and other will not. This is most often levelled at spatially targeted initiatives. A common criticism is that crime will move from the targeted area to other areas; that is, it will be displaced. However there is little substance to these claims. Eck (1998) notes: "concern about displacement is usually based more on pessimism than empirical fact." These criticisms, however unfounded, can have a negative effect on crime reduction motivations. Town (2002) reports on an encounter with this attitude in local authority officers in 1996, quoting one as saying in relation to burglary: "What's the point? They'll get in anyway, and even if they don't, they'll just go somewhere else." This commonly perceived view of targeted crime prevention is also documented among police officers by Barr and Pease (1990) and in the author's personal experience both in Australia and overseas.

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A potential positive impact of crime prevention initiatives is a spread of crime reduction beyond the area of focus. This diffusion of prevention benefits can extend to other types of crime or to other spatial areas (Clarke & Weisburd 1994). For example, a burglary reduction initiative in a target area may also result in lower levels of burglary in surrounding areas. Similarly, it may lead to a reduction in local vehicle crime. The latter may be achieved by the arrest of offenders who are responsible for local burglaries and auto crime.

Another potential side effect is displacement. Hakim and Rengert (1981, p. 11) list five types of potential displacement:

- spatial displacement, where crime moves from one site to another;
- temporal displacement, where crime moves from one time to another;
- target displacement, where crime is directed away from one target to another;
- tactical displacement, where one *modus operandi* is replaced by another; and
- "type of crime" displacement, where one type of crime is replaced by another.

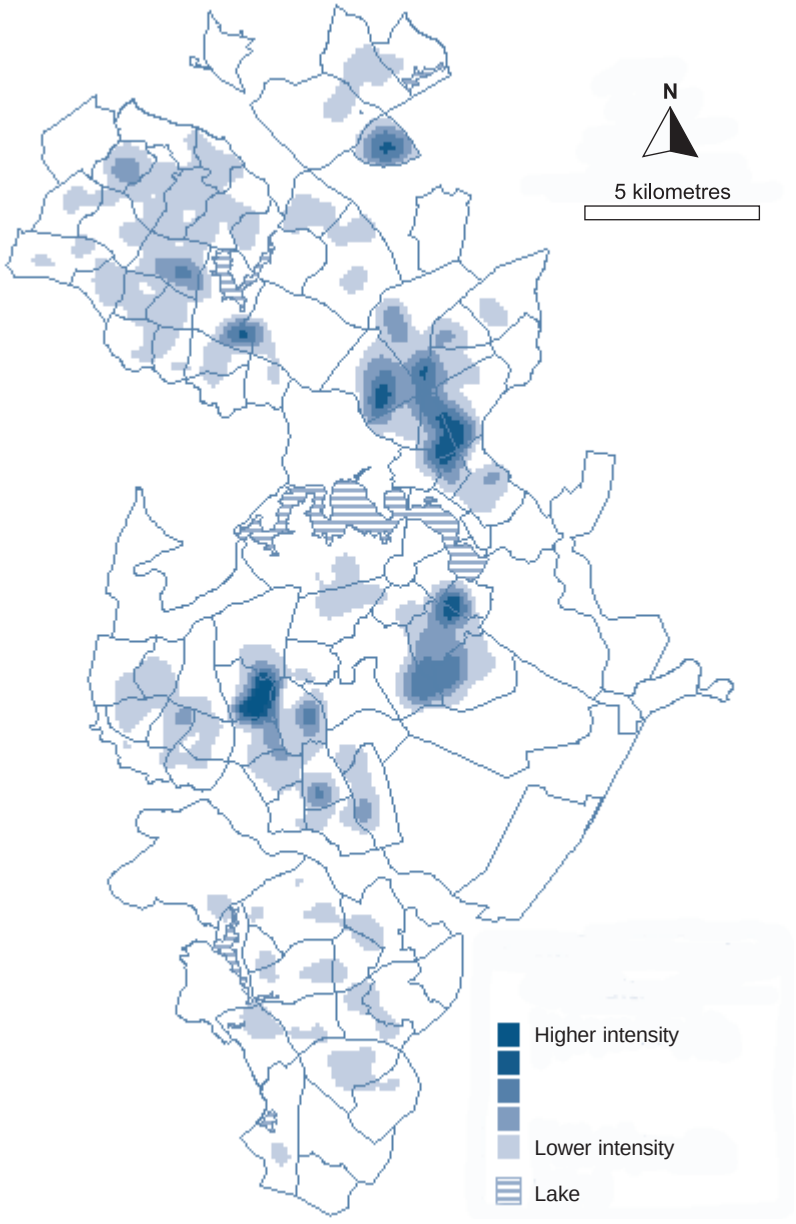
Most of the concerns regarding displacement are voiced with regard to spatial displacement, and this is the topic examined here.

In an extensive review of the literature regarding a variety of crime types over 55 separate studies, Hesseling (1994) found that researchers presented some evidence of displacement in 33 studies. In 22 studies there was no evidence of any displacement, and indeed in a number of the articles there was some indication of a diffusion of benefits beyond the scope of the crime prevention initiative. With regard to overall displacement, where any existed, the increase in crime was modest in comparison to the benefits in the target area, resulting in a net crime prevention gain. Importantly, no evidence was presented for "total displacement"—the complete transposition of the target area crime level on to other areas.

The possibility of displacement has been extensively studied in relation to burglary reduction programs. Such programs are often popular, as burglary is an area of broad public concern (Town 2002) and burglary hotspots are often fairly well defined in a spatial sense (see Figure 1). In regard to burglary, little evidence exists for extensive displacement. In Hesseling's research (1994) he focused on 12 burglary studies, determining that 50 per cent showed no evidence of any form of displacement. The remaining research that did indicate some form of displacement as a result of a burglary reduction initiative found that geographical diffusion from the target area to a nearby region was the predominant form of displacement. Again, Hesseling found that no researchers provided evidence for total displacement.

One further consideration of the diffusion of crime prevention benefits scenario is directly related to police crackdowns. Sherman (1990) reviewed a

**Figure 1:** *Canberra residential burglary intensity for 2000*




Note: Hotspots are shown as areas of increasing crime intensity, where there are greater numbers of incidents. Outlined regions indicate suburbs. These hotspots may have moved or reduced as a result of Operation Anchorage, changes in urban housing policy and other factors.

Source: PROMIS database, Australian Federal Police, 2000

number of police crackdown studies and identified in some the possibility of continued lower levels of crime even when a police crackdown had finished. Although police can rarely impact on the root causes of crime (Hesseling 1994), this residual deterrence decay is thought to be caused when the criminal milieu have either been temporarily incapacitated through arrest, or are still wary of the increased law enforcement activity and have failed to notice that the police operation has stopped. Residual deterrence decay is an occasional positive outcome of a police crackdown, where the crime reduction operation gets further value at no further cost. Spatial dynamics of a police crackdown are examined in detail below.

## Operation Anchorage: A Displacement Study

The Australia Federal Police (AFP) is responsible for policing Canberra. In response to rising burglary figures, the AFP initiated Operation Anchorage in February 2001. This program ran until July of the same year and involved a concerted effort by 10 per cent of the police service to reduce burglary across the city. Strategies employed included the use of surveillance teams, targeting known prolific offenders, traffic enforcement in high-burglary areas, and extensive use of intelligence analysis to focus efforts.

No particular area was pre-designated for attention. Adaptable management practices were combined with repeated re-assessment of the city's burglary situation through crime analysis. This allowed the investigators to adapt to changes across the city and shift focus when arrests were made. Inevitably their attention was concentrated in certain areas of the city that were burglary hotspots (see Figure 1). Burglary does not occur randomly across space; both burglary opportunities and the availability of offenders have particular hotspots in any urban environment.

**Table 1:** *Burglaries during the four studied periods*

| Period | Time span | Burglaries |
|---|---|---|
| 1 | Twelve to nine weeks prior to Operation Anchorage | 584 |
| 2 | Eight to five weeks prior to Operation Anchorage | 556 |
| 3 | Four weeks to one week prior to Operation Anchorage | 661 |
| 4 | First four weeks of Operation Anchorage | 386 |

Source: PROMIS database, Australian Federal Police 2000–2001

Without a defined implementation area it becomes more problematic to measure any displacement, should any exist. While police attention was focused in certain areas, the Operation Anchorage teams were able to work in any part of the city. This study therefore examined city-wide burglary patterns across four contiguous 28-day periods:

- Period 1 was from 12 weeks to nine weeks (inclusive) prior to Operation Anchorage;
- Period 2 was from eight to five weeks before;
- Period 3 was the four weeks immediately preceding Operation Anchorage; and
- Period 4 was the first four weeks of the operational period of Anchorage.

Burglaries across Canberra were geocoded within a GIS. Geocoding is the computational process of plotting a crime site on a map. The success rate of the geocoding for this study was in excess of 97 per cent, where an acceptable minimum is 85 per cent (Ratcliffe 2001b).

Table 1 shows the total number of burglaries in each period. It appears on the basis of the first four weeks that Operation Anchorage had a considerable impact on burglary in the city. With this clear reduction in burglary, however, it is still possible that some offending was displaced to different parts of the city. To test for any such displacement in the reduced burglary figures, the following methodology was employed.

In line with the approach of Bailey and Gatrell (1995, p. 119), a computer program was written to generate 100 random point locations within the city boundary. The nearest neighbour distance was calculated from each random point to the closest burglary incident in each period (1 to 4). Edge effects were corrected for by the exclusion of any random point where the city boundary was found to be closer than any of the four nearest neighbour points. Any removed random points were replaced with a new randomly generated location.

This type of analysis results in a table of 100 rows. In each row the nearest neighbour distance from a random point to the closest point in each of the four time periods is represented in four columns. The four-by-100 table of nearest neighbour distances was compared using a Spearman rank correlation coefficient (Spearman's rho). Because there were far fewer burglaries in the last time period, nearest neighbour distances could theoretically be greater, due to the lower number of points. The use of Spearman's rho, a non-parametric statistical test, is advantageous under these circumstances because it compares the rank order of cases within each time period. The differences in the number of actual burglaries across the time periods is therefore not a factor and the test allows for the reduction in the number of burglaries during Period 4 (the first four weeks of Operation Anchorage).

A potential criticism of the nearest neighbour / random point method is that an unusual random point distribution might favour one particular burglary pattern. A randomly generated location may, for example, happen to be sited a few metres from the only burglary incident in a low-burglary area of the city. A solution to this problem is to repeat the analysis a number of times and on each repeat—or

realisation—generate a different group of random points. In this manner (a process termed Monte Carlo simulation) variations in the correlations between the four individual pairs of point distributions are ironed out over numerous realisations. Table 2 shows the results of the correlation analysis between the sets. In each realisation of the Monte Carlo process, 100 random points were generated, and there were 100 realisations. After each realisation, the Spearman rho coefficient was calculated and the table shows the mean Spearman rho value (n=100) and standard deviation (figure shown in brackets). All correlations are significant to at least p=0.01 within three standard deviations of the mean.

The results show that the three periods prior to Operation Anchorage were positively correlated and statistically significant to $p<0.025$ on every realisation. The study results also show that the first four weeks of Operation Anchorage (Period 4) were similarly correlated (positive and significant) with each of the three periods prior to the initiative. This suggests that the AFP were successful in reducing the level of burglary in Canberra (Table 1 and Figure 2) and that their activities did not appear to significantly displace burglary to other areas. The overall pattern of burglary in the city did not demonstrate evidence of significant change beyond the dramatic reduction apparent in Table 1 and Figure 2. The reduced pattern of offences remained focused in certain high-crime areas, but was significantly reduced during the first weeks of Operation Anchorage.

## Explaining the Lack of Displacement

The rationale for the nearest-neighbour / Monte Carlo approach employed in this paper is that burglary crime patterns are generally expected to remain stable. Any random point in high-crime areas will have small

**Table 2:** *Correlation matrix for Periods 1 to 4 (mean of 100 realisations of the Monte Carlo process shown, with standard deviations indicated in brackets)*

| | Period 1 | Period 2 | Period 3 | Period 4 |
|---|---|---|---|---|
| Period 1 | 1.000 (n / a) | 0.562 (0.080) | 0.574 (0.080) | 0.543 (0.076) |
| Period 2 | – | 1.000 (n / a) | 0.542 (0.081) | 0.532 (0.073) |
| Period 3 | – | – | 1.000 (n / a) | 0.525 (0.081) |

Source: PROMIS database, Australian Federal Police, 2000–2001

nearest-neighbour distances on the whole. In low-crime areas with a lower density of burglaries we would expect to find generally larger nearest-neighbour distances. Between time periods there will be some variation; however, general patterns are expected to persist.

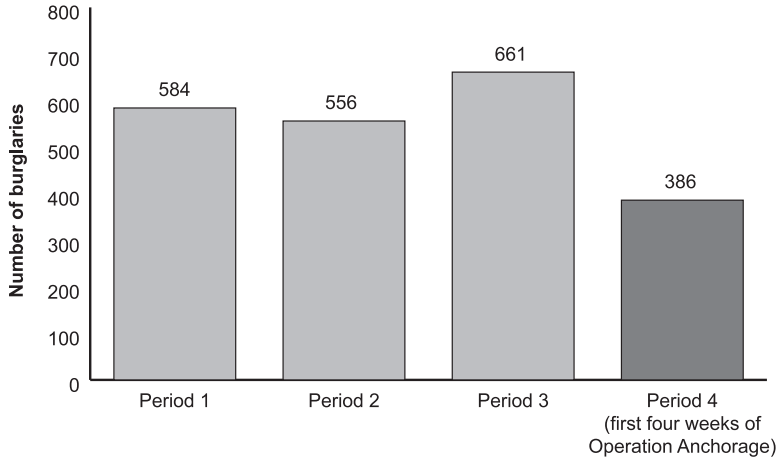
Why do patterns persist? Opportunities to commit burglaries are neither uniformly nor randomly distributed across the urban environment, but are clustered into hotspots of criminal activity. There are many reasons why hotspots exist. Some are purely structural. In areas of a city zoned for commercial business, residential burglaries are not possible, and the reverse also holds true. The few non-dwelling burglaries that occur in residential areas happen at shops and schools that support the residential communities. In urban areas with strict zoning regulations, commercial burglaries tend to be clustered by geography, notwithstanding any other factors.

Residential burglaries have larger areas of possibility and, again, urban geography is one factor. Consider a burglar touring a neighbourhood on foot, seeking a burglary opportunity: the density of inner-city and low-income housing would present more opportunities than the spacious low-density housing of more affluent suburbs. There are simply more potential targets for every kilometre walked in some areas than others.

Burglary opportunities are not only clustered due to density factors but also due to situational factors. Routine activities theory (Cohen & Felson 1979; Felson 1994) tells us that a suitable target, a motivated offender and the absence of a capable guardian are all prerequisites for the commission of a crime. However, these three components are not evenly or randomly distributed over space and time, nor are all targets "suitable", all offenders "motivated" and all guardians "capable".

In looking at the three components, it should first be noted that the supply of suitable targets is limited. In more affluent areas, dwelling owners may be prepared and able to spend money on alarms, locks and more sophisticated crime prevention devices which are beyond the

**Figure 2:** *Number of burglaries in the four studied periods*




Source: PROMIS database, Australian Federal Police, 2000–2001

means of less well-off homeowners and tenants. In lower-income areas the housing stock may be older and infrequently maintained, thereby offering easier entry opportunities to the offender. In some cases these factors can be ameliorated through situational crime prevention and architectural adaptations as advocated by proponents of crime prevention through environmental design (CPTED). Making structural changes to high-crime areas does fall outside the scope of most police services, though they can make suggestions to local housing or crime prevention agencies. Residents of less affluent areas often lack the resources or political influence to drive through these improvements, leaving low-income housing vulnerable to burglary.

The supply of motivated offenders is also limited. Studies have shown that a small number of offenders are responsible for a significant amount of crime in an area (Weatherburn 2001). By concentrating on known recidivist offenders early in the campaign, the AFP in Canberra was able to arrest a number of this limited stock of offenders and discourage others. This initial crackdown on recidivist offenders will have had a considerable impact on the number of motivated offenders. This may explain both the initial reduction in the number of burglaries (see Figure 2), and the lack of offenders able or willing to explore burglary opportunities in other areas; hence the lack of displacement in the remaining burglary crimes.

Finally the availability of capable guardians to inhibit crime has situational and spatial dimensions. In lower-income areas it may be necessary for every adult in the home to work full time, leaving a property or group of houses unattended during the day. More affluent areas, or areas with a high proportion of pre-school children may have more people around during the middle of the day—the peak time for residential burglary (Ratcliffe 2001a). These people provide surveillance, or a guardianship role, for nearby houses.

Given the focus of police activity in some areas, why don't offenders move their activities to another part of the city? Certainly it is possible that offenders believed that the police efforts during Operation Anchorage were evenly spread city-wide rather than being intelligence-led and geographically focused. This belief may have precluded their seeking burglary targets elsewhere.

A key component of routine activities theory is that offender target selection is based on opportunities being presented to the offender through the daily activities of their lives. Many burglars take advantage of opportunities they stumble across while legitimately engaged in other activities, such as visiting friends, going to work, or attending school (Wiles & Costello 2000). In a previous study it was found that half of all arrested residential burglars were under 18 years of age, and a quarter were under 16. One-third of all arrested offenders had travelled less than 1,500 metres from their home to commit the offence (Ratcliffe 2001a).

The distance decay principle tells us that offenders commit crimes near their homes with proportionally fewer offences occurring the greater the distance from home base (Rengert, Piquero & Jones 1999; Rossmo 2000; van Koppen & De Keijser 1997). If offenders commit crimes near home, and in areas where their routine daily activities take them, then there may be limited enthusiasm to offend in:

- unknown areas outside the offenders' normal domain;
- areas where they may stand out; and
- areas where they do not know the layout, the escape routes or the level of police activity.

In this manner, offenders demonstrate a spatial awareness bias (Cater & Jones 1992).

## Conclusion

This study of the interaction of burglary patterns and police activity in Canberra has found that a reduction in burglary due to police activity was not accompanied by any evidence of significant spatial displacement of burglary to other geographical areas. An unusual aspect of the study is that the spatial displacement hypothesis was tested using a methodology that allowed for a lack of distinct boundary in the area of police activity. The lack of displacement in the findings is believed to be due to a combination of factors. First, the removal of prolific offenders early in the initiative was combined with a focus on specific individuals that upset the "business plan" of key offenders. Second, the opportunity structures in non-targeted areas did not change. Low-crime areas were such because they did not present sufficient opportunities to a large number of offenders familiar and comfortable in the surroundings. Displacement did not occur because these "low-offender knowledge/low-opportunity" areas were still "low-offender knowledge/low-opportunity" areas even after the police initiative had started.

It must be recognised that restrictions on data availability precluded the possibility of a longer evaluation of the burglary patterns. It may be the case that offenders waited a few weeks into Operation Anchorage and then moved their activities to other areas after assessing police tactics. It is hoped that a future paper in this series will examine the longer-term implications of Operation Anchorage, and the possibility of residential deterrence decay.

The threat of geographical displacement is a factor to be considered with situational crime prevention policies that do not "aim to alter the root causes of crime" (Hesseling 1994, p. 198)—an aim usually outside the scope of a police service. No evidence

for geographical displacement was found in this study. Where there has been some recorded shift in criminal behaviour, it has almost never been found to be total displacement (that is, a complete shift in criminal activity resulting in no overall reduction). Although it has not been possible to examine displacement to other crime types due to the availability of data, the AFP reported a decrease in other crime types during Operation Anchorage (Commander Ben McDevitt, personal communication, 2001). With regard to non-geographical displacement, Hesseling noted that where displacement occurred it:

> …took the form of different tactics, targets, times or places, but offenders continued to commit the same offences. (1994, p. 217)

Significant concerns about displacement appear therefore to be unfounded, yet are commonly voiced by the public, the media and criminal justice professionals. The evidence would suggest that these fears, while not totally unfounded, should certainly not be heeded as a reason to resist a crime prevention initiative. Indeed there appears to be more evidence for a diffusion of crime prevention benefits than for any spatial displacement.

With the pressure being placed on the crime prevention dollar around the world, evaluation of police crackdowns and operations is vital to maintain a body of knowledge in regard to law enforcement effectiveness and to maintain a police corporate memory of strategies that work. This "strategic leadership memory", where management knowledge related to successful policing techniques and their implementation would be stored, is essential in times of fiscal responsibility. This could be used in future to identify unpromising tactics based on past experiences and to retain the best management practices for broader dissemination and project development.

As this paper has shown, carefully considered, accurately targeted, theoretically sound and evidentially based crime prevention initiatives can be successful without increasing the risk to surrounding areas.

## Note

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