



Diffusion of Benefits: Evaluating a Policing Operation

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As part of the Australian Institute of Criminology's commitment to building an evidence base on the effects of Australian policing initiatives this paper explores the impact of a targeted policing operation to reduce property crime. By comparing property crime data for the ACT and surrounding areas of NSW, the paper finds no evidence for displacement, either spatially or by crime type following a significant burglary reduction strategy conducted in the ACT in 2001. This paper suggests that there was a diffusion of benefits as car crime and burglary in the surrounding parts of NSW (outside the intervention area) saw significant reductions. However, it is important to note that crime reduction and prevention activity can have unintended, negative consequences not measured in this analysis and that there may be other important factors not accounted for. As a consequence these results may not automatically translate to other initiatives. This paper highlights the need for on-going evaluations of crime reduction initiatives to further our understanding of both the possible displacement and the diffusion of benefits from police operations.

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Introduction

While police operations that seek to defeat a particular type of crime problem can appear narrowly focused, artificially focusing on one type of offending or area, there is often an unexplored benefit to this type of police work. A diffusion of crime prevention benefits can see the advantages gained through concentrated police activity spread beyond the realm of the crime type or spatial limit of the operation, resulting in essence, in a positive displacement effect. This type of 'free policing', where gain is achieved in unexpected areas, is rarely a consideration in law enforcement planning for a number of reasons:

1. the concept of diffusion of benefits is not well-known within law enforcement;
2. the benefits are not guaranteed before the operation starts; and
3. there is always the risk of crime displacement as opposed to a free policing benefit.

There are good reasons, however, to bring this type of policing advantage to the fore. Potential gains in crime reduction beyond a geographical or crime-type activity can help to justify operational expense, achieve political approval, and increase public support. They can also help a police force by deflecting criticism if the original target of the operation has no measurable effect on the targeted crime type, as originally envisaged. Reductions elsewhere, which can be theoretically tied to the operation, can reduce public and internal criticism as well as having tangible benefits in reducing other crime types.

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This paper briefly outlines the effects of a sustained and targeted police operation on burglary in the Australian Capital Territory (ACT) in 2001. It then goes on to discuss the main types of 'free policing' associated with a diffusion of crime control benefits, before analysing burglary and vehicle crime data for the ACT and the surrounding parts of NSW to empirically test whether diffusion benefits were observed.

A sustained and targeted police operation

Operation Anchorage was an intelligence-led policing operation (see Ratcliffe 2001, 2002; Makkai et al. 2004) conducted in the ACT over a four-month period in 2001. The operation was a force wide operation including patrols and specialist investigations along with a wide range of support, intelligence and forensics personnel (see Makkai, Ratcliffe, Veraar & Collins 2004 for further details). The aim of the operation was a 20 per cent reduction in burglary on the previous year. There was a significant weight placed on targeting recidivist offenders, surveillance, patrolling of burglary hotspots, and thorough and rapid investigation of offences, all coordinated by an intelligence cell.

Understanding the temporal pattern of the ACT burglary frequency requires an appreciation of the benefits and limits of targeted police operations. Although not formally called a 'crackdown' the operation had many of the hallmarks of such an activity. Crackdowns have been defined as 'sudden increases in officer presence, sanctions, and threats of apprehension either for specific offences or for all offences in specific places' (Sherman 1990:1). Policing has long employed crackdowns on various types of crime, and at different places, as a crime reduction tactic, although they remain controversial. There are a number of reasons why crackdowns are still

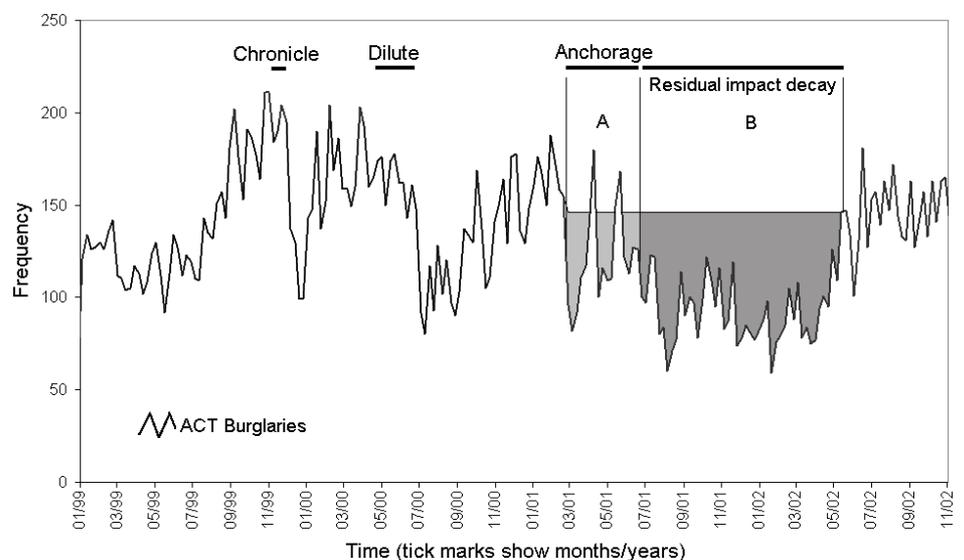
common. They have clear political capital for law enforcement and local government. The police are seen to be responding to societal problems, crackdowns are highly visible activities that tend to be 'media-friendly', and crackdowns provide 'evidence' that local police are 'doing something about crime'. From an administrative point of view they are fairly easily administered, having a distinct start, end point and operational focus. This can be planned in advance from a resource and budgetary perspective.

Of the 18 police crackdown studies reported by Sherman (1990), 15 demonstrated an *initial deterrence effect*, where the police operation produced a noticeable initial drop in crime. This can be seen in the case of the ACT Policing initiative. The light grey area marked A in Figure 1 shows the frequency of recorded burglaries during the operational phase. The shaded area indicates the average number of burglaries prevented as a result of Operation Anchorage compared to the average from the six months prior to Anchorage.

Evaluation of any crackdown tends to be a secondary concern, in that more immediate policing concerns are handled by a crackdown: visible arrests and media impact. The actual impact on crime levels in the aftermath of the operation is often a lesser priority. Sherman (1990) found a number of cases that displayed *initial deterrence decay*, where the benefit of the crackdown dissipated soon after the initial deterrence effect and sometimes during the police operation. There was no *initial deterrence decay* with Anchorage as shown by the residual impact delay (B) in Figure 1. Sherman only found six studies that reported on operation crime levels, but five of those studies demonstrated a *residual deterrence effect* where the crime rate remained low for a period after the police operation. Through monitoring the ACT recorded burglary rate it was possible to empirically demonstrate a *residual deterrence decay* effect from the policing operation.

While the Sherman (1990) paper cited residual deterrence as a positive benefit from a police crackdown it is unclear if

Figure 1: Weekly frequency of recorded burglaries, ACT



Source: Australian Institute of Criminology, AFP ACT recorded crime, January 1999–November 2002 [computer file]

the extended period of low offences in the ACT after Operation Anchorage, followed by an expected slow decay of those benefits (*residual deterrence decay*, to use Sherman's term), is due to deterrence, incapacitation of recidivist offenders, or some other facet of the operation. The term residual deterrence may however be a little misleading. Deterrence suggests that offender perception of an increased risk of capture is sufficient to drive down crime rates, even when the risk of apprehension has returned to a pre-Operation level that was able to sustain higher offending rates. It is more realistic to use the term *residual impact* to cover the possibilities of both deterrence in the offender population that is not incarcerated, and the incapacitation of recidivist offenders held in custody. In the case of Operation Anchorage, the residual impact period was estimated based on a continuation of the mean of the six months prior to the Operation, a more conservative estimate than a continuation of the predicted level from the time series analysis. The residual impact of Operation Anchorage resulted in reduced burglary levels for 45 weeks after the operation, preventing 2,445 burglaries. All of this at a time when the police Operation had ended.

Diffusion of crime control benefits

A significant criticism of police crackdowns is the possibility of displacement effects. There have been six types of displacement identified in the literature — temporal, spatial, tactical, target, crime type and perpetrator (see Barr & Pease 1990). Displacement is often used as the reason for not investing resources and effort into crime prevention activities, particularly police activities. As a result it is a critical issue for policy makers (see Barr & Pease 1990). More recently criminologists have been empirically testing the displacement theory and some have argued that although displacement is a real possibility, there is also the possibility of the

displacement effect being *benign* or even a *diffusion* of benefits. A benign effect is where displacement occurs but there is a net social gain either through a reduction in concern about crime or no increase in the seriousness of the crime being committed (Barr & Pease 1990). One definition of diffusion of crime control benefits refers to 'the spread of the beneficial influence of an intervention beyond the places which are directly targeted, the individuals who are the target of control, the crimes which are the focus of intervention or the time periods in which an intervention is brought' (Clarke & Weisburd 1994: 168).

Theoretically there are two different types of diffusion of crime prevention benefit: deterrence and discouragement. Deterrence essentially relates to a perceived increase in the risk of apprehension. An actual increase in the risk of arrest is not as important as the perception in the offender that the risk has increased. In line with the rational choice perspective (Clarke & Cornish 1985; Cornish & Clarke 1986), this will result in a modification of offender behaviour. Discouragement can occur when there is a perceived increase in the amount of effort, or a perceived decrease in the likely rewards from crime. This can occur even if the risk of apprehension has not changed or even if there has been no modification in the actual effort or reward structure. As with the value of deterrence, the important thing is that offender behaviour is modified by the *perceived* change in reward and effort.

As Green (1995) noted, that a program, which targeted drug-related problems in Oakland (California), had a net diffusion of benefits to surrounding areas. However these effects could only be found by explicitly testing for them. To clearly identify the two (predominantly) spatial effects of displacement and diffusion, specific research designs must be employed to identify suitable control and

evaluation locations so that displacement and diffusion can be identified when they occur (Feins et al. 1997; Weisburd & Green 1995). Following a 'quality of life' police operation in Chandler, Arizona, researchers found strong evidence for a diffusion of benefit to surrounding areas (Katz et al. 2001), and there is some evidence that street lighting can provide a diffusion of benefits effect to surrounding areas (Painter & Farrington 1999). On the whole however, the canon of documented empirical research in this area is sparse.

Analysis

To test for a displacement or a diffusion effect this study examined two types of recorded property crime: burglary and vehicle offences. The category of burglary includes actual and attempted offences, both residential and non-residential. The vehicle crime category includes theft of and theft from vehicles, but does not include offences where the vehicle was not the target of the crime, for example, offences of ram-raiding or driving while intoxicated. Moving or stationary traffic offences were also not included in this category. The data were collected for two study areas. The intervention area was the Australian Capital Territory (ACT), and data were also collected for the South Eastern Statistical District (SESD) of New South Wales. This area is a statistical sub-division of NSW that completely encircles the ACT. The New South Wales Bureau of Crime Statistics and Research provided the SESD data.

Each data set was separated into two groups, a pre-Anchorage group consisting of 113 weekly crime counts from January 1999 to 25 February 2001, and a second group that ran for 88 weekly crime frequencies covering the period 26 February to the end of November 2002. This second group

included the 18 weeks of Operation Anchorage, which was conducted from 26 February to June 30 2001, and 70 weeks afterwards. The data consisted of three main property crime measures: ACT car crime, SESD car crime, and SESD burglary. The ACT car crime figure was in reality a combination of two sub-sets; ACT theft from vehicle, and ACT theft of vehicle.

One-way analysis of variance (ANOVA) tests were conducted on the data in order to determine if the mean level of recorded offences was significantly lower in the period of Anchorage and afterwards (second group), compared with the pre-Anchorage period. ANOVA is a useful test in that it does not require the assumption of a normal distribution in the data. However, the groups should come from data ranges with equal variances. To confirm this was the case, Levine’s homogeneity-of-variance test was also conducted.

The analysis found that car and burglary crime was, on average, significantly lower after the start of the operation. Table 1 shows that ACT car crime was on average 10 offences per week lower in the period after Anchorage began when compared to before the operation. There were also smaller, but statistically significant, reductions in car crime and burglary in the area surrounding the ACT (SESD). The Levine statistic was not significant for ACT and SESD burglary or ACT car crime, but was significant for the comparison of variances in regard to the SESD car crime test. The ANOVA F value was therefore deemed unreliable for the SESD car crime calculation, and a Welch test (Welch 1947, 1951) was employed. While the Welch test was therefore preferable and more robust statistically, the results were similar. The Welch test confirmed the significance in the difference between the group means for the SESD car crime analysis (p=0.01).

Table 1: Comparison of high volume property crime rates in the ACT and surrounding area before and after Operation Anchorage

	Mean recorded offences	Standard deviation	F	Sig
ACT burglary (before)	144	32.06		
ACT burglary (after)	114	30.02	47.45	.00
SESD burglary (before)	54	10.35		
SESD burglary (after)	49	10.96	9.56	.00
ACT car crime (before)	93	22.12		
ACT car crime (after)	82	19.34	13.82	.00
SESD car crime (before)	37	10.82		
SESD car crime (after)	33	7.83	8.10*	.01

* indicates Welch value replaces F value.

Source: Australian Institute of Criminology, AFP ACT Recorded crime, January 1999–November 2002 [computer file] and NSW Bureau of Crime Statistics and Research SESD Recorded crime, January 1999–November 2002 [computer file]

In terms of determining whether the residual benefits impacted immediately during the operational phase Figure 2 examines the average number of recorded offences before, during and after the intervention. The data show both an initial (during the operation) and residual (after the operation) impact for burglary in the ACT. There were slight increases in the average number of recorded SESD burglaries and car crime and the ACT car crime. However none of these changes were statistically significant indicating neither displacement nor benefit either in crime type or geographic dispersal in the initial operation. However the effects after the operation were statistically significant, indicating significant delayed benefits from the operation. This highlights the importance of evaluations that monitor impacts beyond the life of the actual police operation.

Discussion

Time series analyses has shown that the SESD burglary data do not significantly predict the ACT burglary frequencies (see Makkai, Ratcliffe, Veraar & Collins 2004), suggesting that there were no larger macro effects taking place that could satisfactorily

account for the crime rate reductions identified during and after Anchorage. The data presented here shows that there was no identifiable spatial displacement of burglary to the SESD, suggesting that burglary was not only reduced within the ACT, but also that the problem was contained within the city. Indeed the modest reduction in burglary within the SESD (outside the operational area) following the Operation suggests the possibility of a diffusion of benefits from the ACT policing operation to the surrounding area.

This study found a reduction in vehicle crime in both the ACT and the SESD operation. Such a reduction could be caused by macro factors, or a diffusion of benefits. Either way, it can be confirmed that there does not appear to have been any significant crime-type displacement to vehicle crime from burglary, and indeed there is greater likelihood of a diffusion of benefits from one crime-type to another.

If there has been a crime-type diffusion of benefits, then this is most likely due to a combination of deterrence, discouragement and incapacitation. Incapacitation may be a significant factor in diffusion of benefits from one crime

type to another. Analysis of the criminal histories of recidivist offenders arrested during the burglary operation found that a quarter of the offenders had a previous charge for theft of motor vehicle, and the vast majority had a conviction or charge for theft (although the data available did not distinguish between theft from vehicles and other types of theft). Furthermore 18 per cent of those offenders arrested during the Operation accounted for 62 per cent of all prior offending episodes.

As the SESD and ACT adjoin each other it would certainly be a possibility that offenders committed offences in both areas. As the ACT operation started, some recidivist offenders were either arrested by police (incapacitation) or became aware of either a degree of surveillance activity directed against them by plain-clothes detectives, or the persistent attention of uniformed officers. In the light of this unwanted attention, they may have decided to curtail or reduce their level of offending (deterrence). Both this incapacitation and deterrence would most likely

influence all of their offending behaviour and could explain the reduction in both burglary and vehicle crime at the time of Operation Anchorage, and for a period afterwards.

If these same offenders also conducted criminal activity in the SESD area, then their incapacitation would provide a free policing benefit to the SESD. This free policing benefit would have extended to all crime types that these offenders were involved in. If they were predominantly property offenders then the free policing benefit could explain the reduction in burglary and vehicle crime. There are a number of competing hypotheses that could account for the observed reduction. These include:

1. offenders not incarcerated, but intimidated by police attention (deterrence), may have been unaware of the coverage of Operation Anchorage. This awareness gap could lead them to believe that the administrative boundary of the ACT included areas of the SESD such as Queanbeyan, resulting in a mistaken belief that Queanbeyan

was also 'off-limits' due to being part of the ACT.

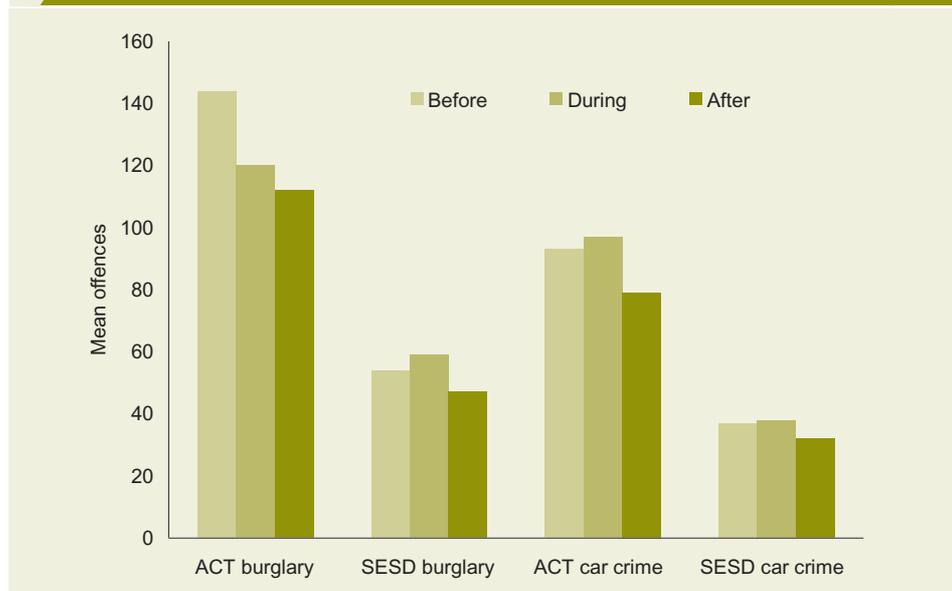
2. a mistaken belief that the Queanbeyan Police were a full and active participant in Operation Anchorage, either through a local arrangement or because they may have believed that Anchorage was a national initiative.
3. the only stolen goods market available to these (predominantly property) offenders was back in the ACT, and although the level of risk for arrest was unchanged for the SESD, the risk of capture bringing stolen property back to the ACT was perceived by offenders to be elevated due to increased police attention.

While all of these perceptions may not have been accurate, they will have influenced offender behaviour in line with rational choice theory. Although the expanded value in the incarceration of recidivist offenders beyond the specific crime type target of the operation falls outside Clarke and Weisburd's definition of a 'diffusion of benefits' (Clarke & Weisburd 1994: 168), reductions in crime levels in other areas and to other crime types could certainly be considered an additional 'free policing' benefit and one that is usually unexpected and unanticipated by law enforcement.

Conclusion

Some readers may note that the language used to discuss the possibility of diffusion and displacement in this paper is, at times, cautious. This is because, as Clarke and Weisburd (1994: 166) note, although displacement of crime may be minimal, 'conclusive proof of this is extremely difficult to obtain because displacement can in theory take so many different forms'. Although there may not be specific statistical evidence that there has been a displacement effect from one measured crime type to another, or from one area to another, there are a myriad of

Figure 2: Average number of recorded offences before, during and after Operation Anchorage



Source: Australian Institute of Criminology, AFP ACT Recorded crime, January 1999–November 2002 [computer file] and NSW Bureau of Crime Statistics and Research SESD Recorded crime, January 1999–November 2002 [computer file]

displacement possibilities that would remain undetected by a study of this nature. For example, minor increases in the level of, say, bicycle theft, may be detected but fail to reach a statistically significant level due to the low amount of this crime generally. Even if there was a degree of crime-type displacement within the operational area, any reduction in the target crime type is unlikely to be matched by an equal increase in other crime types, still resulting in a net gain. Furthermore displacement to less serious crimes can be regarded as a benign effect (Barr & Pease 1990).

Although there are a number of ways in which crime reduction and prevention activity can have unintended, negative consequences (Grabosky 1995, 1996), the empirical evidence suggests that a general risk of total displacement is insignificant (see Sherman 1990) when compared to the gains that can be accrued from a well-planned and theoretically-sound police operation. Police managers should actively consider the possibility of a diffusion of crime prevention benefits as a potential 'free policing' benefit of an operation, spreading crime prevention profit to different crime types and other geographical areas. Actively seeking out evidence of this benefit will assist law enforcement in justifying operational expense, and planning future crime-reduction strategies. However the evidence to date indicates that benefits will eventually decay over the longer term so targeted police operations should be part of a wider crime prevention policy agenda.

6

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