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The role of publicity in crime prevention: findings from the Reducing Burglary Initiative

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Home Office Research Studies

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Foreword

The Reducing Burglary Initiative

In 1998 the Home Office announced the Crime Reduction Programme. The programme was intended to develop and implement an integrated approach to reducing crime and making communities safer. The Reducing Burglary Initiative (RBI), launched in 1999, was one of the first parts of this programme to commence.

The aims of the RBI are to

- reduce burglary nationally by targeting areas with the worst domestic burglary problems,
- evaluate the cost effectiveness of the different approaches and
- find out what works best where.

Two hundred and forty seven burglary reduction projects have been funded, covering over 2.1 million households that suffered around 110,000 burglaries a year. Three distraction burglary projects have also been funded.

The Evaluation

Three consortia of universities have intensively evaluated the first round of 63 RBI projects. A further five projects from subsequent rounds of the RBI (rounds two and three) are also being evaluated.

This report is part of a series of studies examining burglary reduction practice being published during 2002/03. Also to be published are a full report on the overall impact and cost-effectiveness of Round 1 of the RBI. Other themes to be covered in this series are the delivery of burglary reduction projects and the use of alley-gates as a means to reduce burglary.

Acknowledgments

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Executive summary

In order to disrupt offending and hence prevent crimes, it is critical to consider the mechanisms through which they occur. One of the successful approaches adopted in (situational) crime prevention revolves around the removal of opportunities through the implementation of changes in the physical environment. However, as Smith, Clarke and Pease (2002) have recently discussed, it is equally important to consider offenders' perceptions of the availability of suitable opportunities and the influence of such perceptions on their decision-making processes. Thus, in this paper the way in which the publicity of crime prevention activity may enhance crime prevention efforts by increasing offenders' perceptions of the risks and efforts involved in perpetrating crimes, the potential rewards and the removal of excuses, is considered.

The research reported in this paper uses evidence from an evaluation of 21 burglary reduction projects located in the north of England (which were funded through the Home Office's Reducing Burglary Initiative (RBI)) and addresses four main issues:

1) the types of publicity used by the different schemes, when they were used and with what frequency;
2) statistical analysis of the role of publicity in burglary reduction;
3) the implication for evaluation research; and
4) the policy implications of the findings and future directions for research.

Types of publicity

The schemes varied in terms of the extent to which they publicised the work being undertaken in their areas. Some schemes actively sought press involvement through radio interviews and articles in the local press to promote work they undertook. Others used local publicity as a crime prevention 'intervention' in its own right, for instance, using leaflets to raise awareness or to inform offenders that there would be a clampdown on burglary in the area.

On average the schemes used around five different types of publicity. There was considerable variation in the extent to which the schemes took advantage of different types of advertising. In addition, on average the schemes tended to publicise their activities for a period of just over one year.

The timing of publicity was also considered. In particular, the intensity with which schemes were publicised at different times was compared to the timing of the actual implementation of interventions. It was clear from this analysis that the patterns of advertising and implementation intensity were relatively similar, but that the peak in publicity intensity preceded that for implementation, suggesting that the schemes tended to promote their interventions before they were actually implemented.

Using data collected for Cost Effective Analyses (CEA), it appeared that local stand-alone publicity campaigns, (which were seen as interventions in their own right that generally aimed to increase awareness of crime issues and interventions being implemented at the local area level), tended to be cheaper, (and possibly easier to implement) than other interventions. The average cost of a stand-alone publicity campaign was £17,900 compared with a general intervention average of £24,698. Moreover, four of the five most cost-effective projects (of the 21 considered) included stand-alone publicity campaigns.

There are many different types of publicity which may or may not be used in relation to crime prevention. This report focuses primarily on that generated by the schemes themselves. Consequently, the publicity considered tended to be localised in terms of geographical coverage and to promote scheme activity in a positive way. It should be noted that there may be situations where publicity is more sceptical concerning scheme activity; for instance, an article written by a member of the local press may hold a different viewpoint to a leaflet generated by a scheme leader. These differences in the nature of coverage need careful consideration, and should be addressed in further research and practice.

Statistical analysis

One of the fundamental questions of the overall evaluation was what types of intervention were the most effective? Using correlation analysis, the relationship between overall burglary reduction (the number of burglaries prevented by the schemes at the end of the evaluation period) and the combination of interventions employed by each scheme were examined. This analysis revealed that two types of intervention were significantly associated with burglary reduction, these being stakeholding (which included local stand-alone publicity campaigns and homewatch schemes) and location specific situational crime prevention initiatives (which included target hardening interventions)[1]. Thus, the analysis demonstrated that schemes that employed local stand-alone publicity campaigns, or engaged in other similar activities, were likely to be more successful at reducing burglary than those that did not.

1. The observed effectiveness of situational crime prevention approaches over other alternative interventions may in part be due to the characteristics of the RBI programme itself rather than the intrinsic quality of different interventions. This is discussed in more detail in a forthcoming Home Office report on the impact of the RBI.

Using quarterly data statistical analyses were performed that examined the relationship between the timing and intensity of publicity events and the scheme burglary rates. The analyses also took into account other factors that changed over time such as changes in the burglary rate in the wider policing area (basic command unit), the implementation intensity of the scheme (expressed as the spend per household), the number of agencies involved, and changes in key personnel. This showed that changes in the number of agencies involved in the scheme and, in particular, changes in the amount of publicity used were significant predictors of changes in the burglary rate.

An examination of burglary rates over time suggested that across 42 schemes (in addition to the 21 schemes evaluated, further data was obtained for the 21 projects that operated in the Midlands, as part of the RBI, for this purpose), there was significant evidence of a reduction in the burglary rate just before implementation commenced. It was concluded that this was likely to be due to an 'anticipatory benefit' effect whereby offenders' perceptions of the risks, efforts and rewards involved in committing crimes were influenced by local pre-scheme publicity.

Implications for evaluation research

The results suggest that anticipatory benefit is likely to be a fairly widespread phenomenon. This has clear implications for the way in which evaluations are conducted. In particular, care should be taken when conducting statistical analyses that compare crime rates before and after implementation. The findings suggest that the traditional 'before' period used in evaluations may be contaminated by including a time period (the quarter before implementation) in which schemes often have an (anticipatory benefit) effect. The report demonstrates that estimates of scheme outcomes, such as the number of burglaries prevented, may be very different when the quarter immediately before scheme inception is excluded from the 'before' period traditionally used. It also demonstrates that estimates of the number of crimes prevented by anticipatory benefit can contribute substantially to the overall scheme outcome. For these reasons, a change in the procedures used to calculate scheme outcome, that account for anticipatory benefit is called for.

Policy implications

These findings suggest that it may be advisable for scheme organisers to invest in local publicity as a relatively straightforward and cost effective method of enhancing the impact of crime prevention measures. Moreover, that it may also be prudent to implement local

publicity campaigns as interventions in their own right, as was observed here in the form of stand-alone publicity campaigns.

Local publicity may also be useful in maximising the effectiveness of crime reduction interventions in time and space. For example, crime reduction activity might focus on certain targets or certain areas, but associated publicity could cover a wider geographical area. This might in turn lead offenders to believe that crime reduction activity is occurring across this wider area. Equally, publicity may prolong the benefits of crime reduction activity through leading offenders to believe that crime reduction activity might still be ongoing after it has in fact ceased. In short, local publicity can be used to heighten offender uncertainty regarding the presence and duration of crime reduction activities, thereby increasing crime reduction gains.

The way forward

The authors anticipate that, in the future, local publicity will become a more important element in crime prevention efforts. Therefore, it will be important for practitioners to consider the extent, the type and the timing of publicity events. For instance, by carefully planning the intervals in which publicity is implemented it is possible to ensure that it delivers the maximum possible benefit at the minimum possible cost. It also gives some scope for innovation from the point of view of the types of publicity that can be used. Furthermore, it is important that future research explores the influence of publicity in more detail using carefully designed experiments.

1. Introduction

This paper examines the extent to which publicity has a role to play in crime reduction. For many years, work concerned with situational crime prevention (for examples see Clarke, 1997) has focused on the effectiveness of various types of intervention in reducing or preventing crime, and has generated invaluable insights into our understanding of the ways in which crime may be prevented. However, working within this paradigm has potentially limited the literature on 'what works' to 'what works as a physical measure on the ground'. What is proposed is that the debates regarding the causal mechanisms which underlie successful crime reduction initiatives are, at present, narrowly conceived. With this in mind, this report considers the potential effect of simply hearing about a scheme, particularly from the perspective of offenders.

One question that may have occurred to some readers at this point is 'why would simply hearing about a scheme influence an offender's behaviour?' To answer this question, it is useful to consider rational choice theory (e.g. Cornish and Clarke, 1989). According to this model, offenders make decisions as to whether to commit a crime on the basis of the balance between the rewards available and the effort and risks involved, and whether there are, in their view, excuses for committing the crime. Research also suggests that offenders continually revise their perceptions of opportunity as a result of experience, rather than assuming them to remain stable over time (see Hoschtetler, 2001). Thus, through the manipulation of offenders' perceptions of the risks, efforts and rewards involved in committing a crime, through a mechanism such as publicity, it may be possible to enhance the effectiveness of situational (or other) crime prevention efforts.

What is obvious from this empirical research is that crime reductive effort is rarely, if ever, seen in the absence of publicity, be it formal or informal, regarding the objectives and purpose of a scheme. Thus, it seems reasonable to suggest that many offenders will be aware of crime prevention activity during or even before implementation begins, and hence that their perceptions of risk may be changed even if they do not encounter any crime prevention measures themselves.

An equally important issue is whether or not attempting to alter offenders' perceptions of the risks etc. can reduce crime even in the absence of crime prevention activity. That is, is it possible that publicising schemes that will not, or have yet to be implemented have a crime reductive effect? In relation to this question, Smith et al, (2002) examined the relationship

between the timing of implementation and crime reduction in 52 crime prevention evaluation reports. Their analysis indicated that in 22 of the schemes considered, there was evidence of a substantial reduction in crime prior to the commencement of the schemes, an effect they refer to as an anticipatory benefit. Here, this phenomenon is further examined using evidence from 42 burglary reduction schemes funded as part of the Home Office's Reducing Burglary Initiative (RBI). Whilst a number of rival explanations for this phenomenon exist, strong evidence is presented to support the suggestion that one major component is publicity. The existence of anticipatory effects should have considerable implications for the way in which crime prevention is thought about and for the way in which schemes are evaluated. Accordingly, these issues are discussed later in this report.

The definition of publicity

The word publicity is used in many different contexts and hence it is useful to clarify some terms that will be used throughout this report. First is the distinction that can be made between publicity that is controlled and that which is not[2]. The former is defined as that which is paid for and managed by the agency whose work is to be promoted. In contrast, uncontrolled publicity is that which is produced by a journalist or equivalent and is more likely to be independent of those involved in the work. However, in some situations it is possible that the media may be contacted by a scheme representative regarding an intervention, and hence although they may not commission an article they could exert an influence on it. A further distinction can be made between formal and informal publicity. The former is that which is formally disseminated to the public through various forms of media such as radio, newspaper or leaflet. In contrast, informal publicity is that which propagates through the community through word of mouth and networks of friends and acquaintances. A third distinction can be made between positive and negative publicity. This distinction will not be mutually exclusive from the others; it is more likely, for example, that controlled publicity will be positive than uncontrolled publicity. In this paper the analyses presented focus on, but are not limited to, positive forms of publicity that were predominantly controlled by scheme staff.

2. Thanks go to the reviewer of this paper for suggesting this useful classification

Previous research on publicity

A limited number of studies have considered the effect of publicising crime reduction initiatives. In relation to burglary reduction schemes, perhaps the most important study to date was conducted by Laycock (1991) who examined the effectiveness of a property-marking scheme. The results of this study indicated a reduction in burglary in the first year of implementation, after which the burglary rate rose sharply. However, following some national and a large amount of local publicity regarding the initial reduction, in the second year the burglary rate again reduced. In the absence of other plausible explanations, Laycock (1991) attributed the second reduction to the effects of publicity. Other studies, including those which have evaluated CCTV schemes (Schneider and Kitchen, 2002) or burglary reduction (Stockdale and Gresham, 1995) have suggested that good publicity can assist in crime prevention.

Research concerned with road safety has also provided some evidence to support the role of publicity in prevention efforts. In one study, Winkel (1980) examined the effectiveness of supplying drivers with information concerning the penalties associated with not using seat belts. Their results indicated that informing drivers that the police carefully enforce legislation regarding seat belt usage, and that they may be apprehended for not complying, increased the likelihood that they would use their seatbelts by up to ten per cent.

In a different study, Corbett and Simon (1 999) examined the effectiveness of speed cameras on driving behaviour. In one condition of the study they specifically evaluated the effectiveness of speed camera warning signs alone by erecting signs in the absence of speed cameras. The rationale underlying the use of the signs alone was to change drivers' perceptions of the risks of (rather than the actual risks of) exceeding the speed limit. The results demonstrated that the signs alone had a significant effect, with approximately fifty per cent of the respondents of a survey reporting that they drove slower following the erection of the signs. Importantly, when the survey respondents were asked why they had changed their driving behaviour, they reported that they believed they were at a greater risk of being caught speeding than they previously had been. In the absence of any actual speed cameras, the results of this study suggest that people's behaviour can be influenced by their perceptions of changes in risk even when this may be incongruent with the reality of the situation.

To summarise, whilst there is a paucity of research concerned with the effects of publicity in crime prevention, evidence exists to suggest that publicity may enhance prevention measures, or even have an effect in itself.

About the Reducing Burglary Initiative

In this report the role of publicity in crime prevention is examined using examples from a recent evaluation of the Home Office's Reducing Burglary Initiative (RBI). The authors were part of the evaluation team commissioned to undertake the evaluation of 21 burglary reduction projects implemented in the north of England. Typically, these schemes commenced around April 1999 and ran for a two-year period. The project areas tended to be fairly small in size (approximately 4000 households on average) and a mixture of new and more well established ways of reducing burglary were implemented. To undertake the evaluation, a variety of different data sets were collected including the following:

- information on recorded crimes;
- contextual information such as the social and demographic makeup of the areas;
- information on the interventions implemented by each project;
- information on the process by which implementation occurred (including such issues as the partners involved; the management of the project; the extent to which the public were involved etc.);
- information on the cost of the project in terms of both direct and indirect funding;
- information on other activities in the area which might affect the crime rate;
- information on the extent and the method by which schemes had publicised their activities;
- information on scheme inputs (e.g. levels of funding, staff time, purchase of locks, bolts, alley-gates); and
- information on the outputs of the scheme in terms of what had actually been implemented on the ground (e.g. number of locks/gates fitted, number of crime prevention packs distributed, etc.).

These data sets were collected in a variety of ways. The recorded crime data was provided by the relevant police forces and was used here to assess the outcome of the projects in terms of burglary reduction. A large amount of the primary data, such as information concerned with the costs associated with each intervention, were collected through meetings between the project teams and members of the evaluation research team. Such data were used to assess what was important in reducing the number of burglaries in an area and what factors impeded implementation.

The 21 projects implemented in the north of England, for which detailed information was available to the authors, are therefore the main focus of the results described in the following sections. However, for the analyses concerned with anticipatory benefit the authors were given access to a limited amount of data for 21 other schemes, located in the

Midlands, that were also evaluated as part of the RBI. This increases the sample size for that analysis from 21 to 42, which in turn increases the reliability and generalisability of the results. Comparable data were not available for the 21 RBI projects located in the south of England and they were therefore excluded from this analysis.

The current study

The following will be investigated:

- To what extent did schemes publicise their objectives and actions?
- What types of publicity the schemes used?
- When did the schemes publicise?
- How important is publicity in explaining the success of schemes?
- Was there reliable evidence of pre-implementation burglary reduction? (anticipatory benefit)
- To what extent is any anticipatory benefit the result of early scheme publicity?
- What implications are there for crime prevention practice?

There are four general sections to this report - Chapters 2 to 5. Firstly, in Chapter 2, The use of publicity, there is a detailed account of how the 21 burglary reduction projects in the north of England publicised their activity. This includes a narrative on the degree to which the schemes used publicity and what form this took. It also provides details of when schemes tended to publicise their efforts. Chapter 3, Does publicity reduce burglary?, examines the extent to which publicising crime prevention activity contributes to scheme success, measured in terms of burglary reduction. In order to do this, the impact of publicity is compared with a range of other factors that might explain burglary reduction (For a more in-depth and methodologically detailed account of some of these findings, see Johnson and Bowers, 2003). Chapter 4, Anticipatory Benefits, moves on to examine the issue of anticipatory benefit and the extent to which this is likely to be explained by crime prevention publicity. A discussion of the way in which the identification of the phenomenon anticipatory benefit should affect evaluation research, and, in particular, outcome analysis (which is used to estimate the number of burglaries prevented) is also presented. In Chapter 5, Summary and policy implications, the research findings are summarised and the policy implications discussed. Alternative methods for using publicity in connection with crime prevention schemes in the future are also suggested.

2. The use of publicity

Type, frequency and timing of publicity

The purpose of this section is to describe the types of publicity that were associated with the burglary reduction schemes to give the reader an idea of the extent to which (and how) the interventions were publicised. The general questions to be addressed may be summarised as follows:

- How many schemes formally publicised their activities?
- How were the schemes publicised?
- Did the schemes differ in terms of the types of publicity events/media used?
- Did the schemes take advantage of different types of publicity or did they use only one type?
- What was the average financial cost associated with publicity?
- Was publicity used before, during and/or after periods of intense implementation?

Information was collected for each of the 21 RBI projects in the north of England, using a publicity template constructed for the evaluation. The purpose of the template was to elicit details concerning the use of publicity associated with every scheme in each quarter of the year, between the second quarter of 1997 and the third quarter of 2001. Information regarding the types of publicity used by the schemes was collected under the following four categories:

- **General publicity**

  Uncontrolled publicity
  - Radio interviews (local/national)
  - Newspaper articles (local/national)
  - Television appearances (local/national)

  Controlled publicity
  - Leaflets/letters/cards
  - Posters
  - Publicity directed at offenders (e.g. Christmas cards)
  - Stickers (e.g. Neighbourhood Watch or Smartwater)

  - Significant community meetings explaining the scheme
  - Informal information on scheme to community/offenders.
- **Stand-alone publicity campaigns**
- **Surveys** (including fear of crime, alleygating, target hardening)
- **Other** (any other form of publicity)

General publicity typically consisted of events that did not continue throughout the life of the scheme, but were used on one or more than one occasion throughout the scheme's implementation. In contrast, stand-alone publicity campaigns were those that were mentioned as part of the bids to the Home Office, which tended to be longer, more consistent types of publicity. Some examples of this were leaflets and information packs either posted through doors or left in strategic locations, along with regular or ad hoc newsletters. Media-based stand-alone campaigns took the form of a series of local radio appearances or newspaper/magazine coverage. Other stand-alone campaigns were more interactive and included presentations given to the local community with the specific aims of raising awareness of crime risks and promoting existing and forthcoming prevention schemes. In essence, these campaigns were any form of planned and strategic dissemination used for the purposes of publicising planned or actual activity.

Surveys were considered to be a form of publicity as all the individuals that are involved with, or need to be consulted on the implementation of crime prevention schemes, will naturally get to know about the schemes. A clear example of this is the fact that conducting surveys to establish whether particular residents meet the criteria to qualify for target-hardening, or are willing to consent to alley-gating in their street will make these residents (and offenders) aware that something is going on in their area.

Whilst each of the 21 projects examined had used some form of publicity, it was clear that some types of publicity were employed more frequently than others. Table 1 shows that newspaper articles, leaflet or card distribution and stand-alone publicity campaigns were most commonly used. Interestingly, the least frequently used type of publicity was that which was aimed directly at offenders. It is also interesting to note that a significant number of schemes had at least some uncontrolled publicity. This is particularly the case with newspaper articles, a mode of publicity associated with 90per cent of the burglary reduction schemes.

Table 2.1: Number of schemes undertaking different forms of publicity.

Publicity Type	Specific Item	% of schemes (N)
General publicity	Newspaper articles (local/national)	90% (19)
	Leaflets/letters/cards	62% (13)
	Significant community meetings explaining the scheme	43% (9)
	Posters	38% (8)
	Radio interviews (local/national)	33% (7)
	Television appearances (local/national)	24% (5)
	Informal information on scheme to community/offenders	14% (3)
	Publicity directed at offenders (e.g. Christmas cards)	14% (3)
Stand-alone publicity campaigns		57% (12)
Surveys (including fear of crime, alleygating, target hardening)		33% (7)
Other (any from of publicity)		43% (9)

Table 2.2 shows how the schemes differed from the point of view of the actual number of different forms of publicity used. The average number of different types of publicity used was five, but as can be seen in Table 2.2 the number ranged from two to nine, demonstrating that there was considerable variation in the extent to which the schemes took advantage of different types of advertising. However, it should be noted that this does not reflect the actual amount of publicity used; only the number of the different types of publicity used.

Table 2.2: Number of different types of publicity used by the schemes

Number of types of publicity used	Number of schemes
2-3	5
4-5	10
6-7	4
8-9	2

The next question was concerned with the period of time over which the schemes used publicity. By using the quarterly information collected, it was possible to determine across how many quarterly periods each of the 21 schemes used publicity. Table 2.3 summarises the

results of this analysis. It was evident that on average the schemes publicised their efforts, in one form or another, across a period of approximately five quarters. It is important to note that, in general, publicity was used across consecutive periods of time (e.g. January to December), but that this was not always true and in some cases the schemes stopped publicising their efforts for a period before eventually resuming this activity.

Table 2.3: Length of time that schemes publicised their activity

Number of quarters that publicity was used	Number of schemes
2-3	5
4-5	7
6-7	5
8-9	2
10	2

However, the above data do not show exactly when the schemes engaged in publicity and whether there was any similarity in this timing across the schemes. To answer this question, the number of schemes engaged in publicising their efforts on a quarterly basis was counted. This was done over a time period which commenced in April 1997 and ended in September 2001. The first seven quarters represent a historic period when none of the schemes were active (April 1997 to December 1998). Two of the schemes commenced implementation in quarter eight (January to March 1999). The remaining schemes started operation in quarter nine or later, with the majority commencing in quarter nine (April to June 1999). In addition, to produce a crude index of the intensity of this activity, the number of occurrences of publicity that took place in each quarter was counted. For instance, if a scheme launched a poster campaign and a leaflet drop this would equate to two occurrences of publicity. It is important to note that when an item of publicity lasted over two or more quarters this was added to the total for each of the quarters that it was active for.

The results of this analysis, shown in Figure 2.1, revealed that the number of schemes engaged in publicity peaked during quarter eleven (October 1999 to December 1999), as did the number of publicity events generated across the 21 schemes. Interestingly, it is clear that for some schemes formal publicity was used during quarter seven, thereby suggesting that some publicity might have been undertaken which preceded the actual physical implementation of the schemes (which generally commenced in quarter nine). This issue of 'pre-implementation' publicity is discussed in greater depth later on.

Figure 2.1: Amount of publicity per quarter across all 21 projects

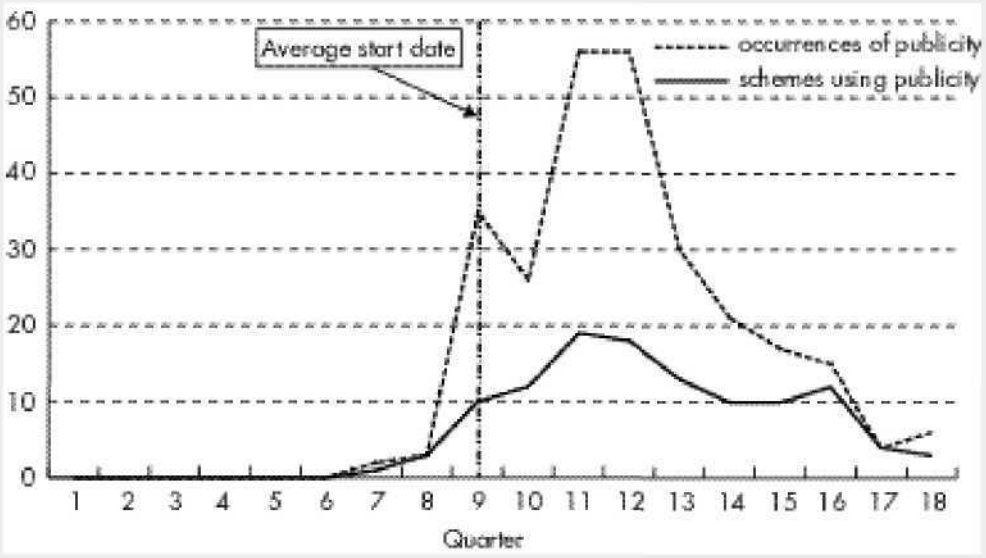
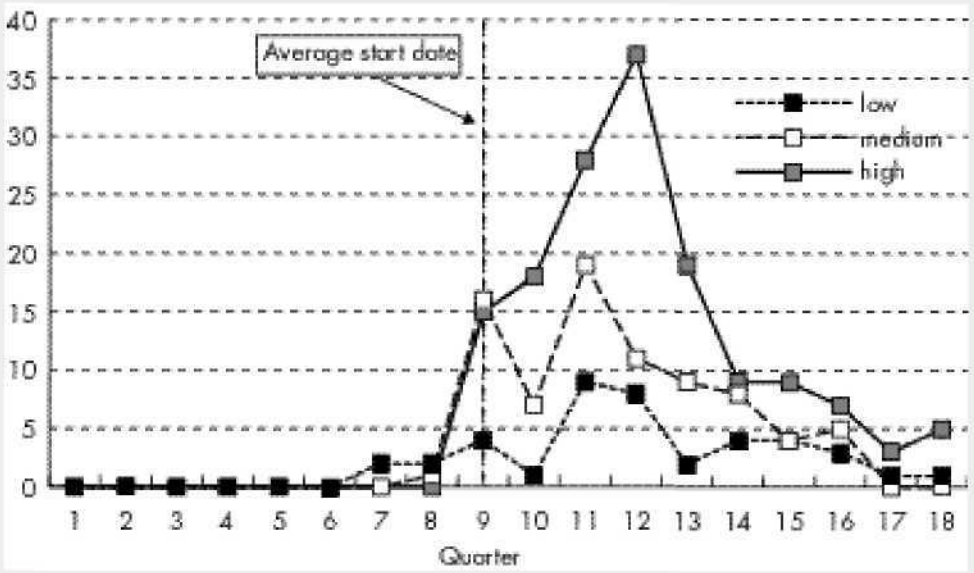


Figure 2.2 shows the variation in the timing of publicity events for schemes with different levels of overall publicity. The figure shows that those with lower levels of publicity were more likely to start publicising the scheme earlier on (in fact before the scheme's official inception dates). Activity also declined between quarters nine and ten and peaked in quarter eleven. In contrast, those with high publicity began their campaigns later, generally in quarter eight, and showed a steady increase in publicity until quarter twelve, after which the number of occurrences of publicity decreased over time.

Figure 2.2: Amount of publicity per quarter across all 21 projects for those with high, medium and low levels of publicity.



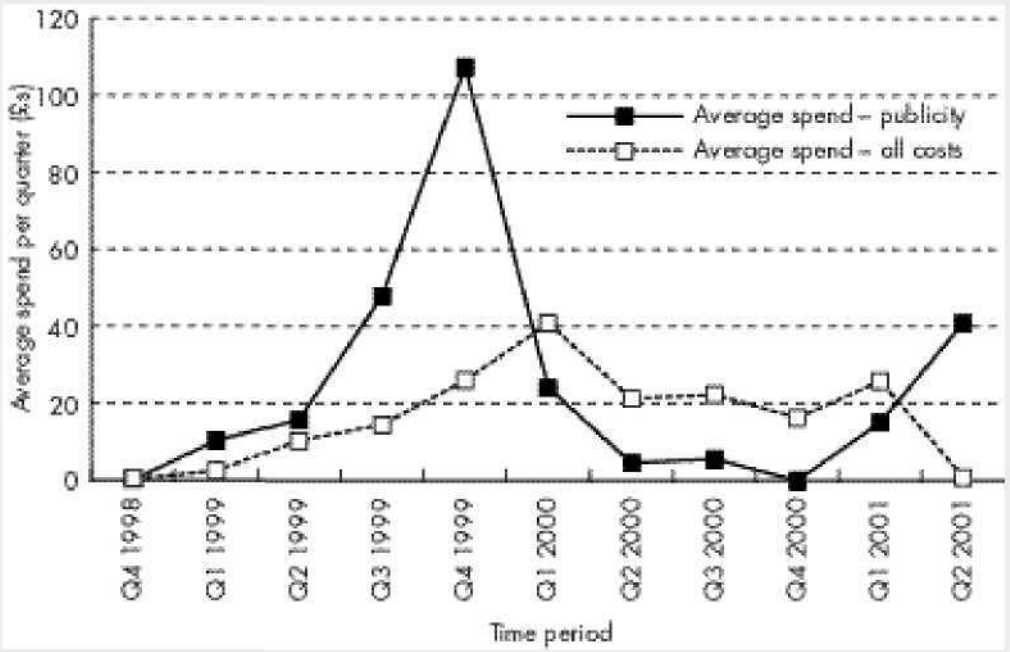
A complementary question was concerned with the relationship between the timing and intensity of publicity and that of the implementation of the interventions themselves. That is, did the schemes tend to publicise their efforts before, during or after the implementation of the interventions? To answer this question it was necessary to produce measures of overall scheme implementation and publicity intensity. The approach adopted was to examine the quarterly costs associated with these two activities using data collected as part of the cost effectiveness analysis (CEA) undertaken as part of the RBI evaluation. This CEA involved the collection of data on the cost of all scheme inputs. These reflected the entire input cost of schemes separated into various elements such as personnel, equipment, travel, premises, training and advertising costs. The costs include levered in resources from sources other than the Home Office, such as, voluntary inputs and do not just include the breakdown of the way in which the RBI funding from the Home Office was spent. These costs were collected on a quarterly basis by the field researchers and collated and analysed by Matrix MHA, a private consultancy company. (For an example CEA case study, see Mallender, Richman, and Kingsworth, forthcoming.)

The results, shown in Figure 2.3, were produced by calculating the spend per quarter on advertising (in £s) and overall scheme implementation (in £1000s per quarter) averaged across all schemes that had formal advertising costs associated with them (17 of the 21 schemes)[3]. It can be seen that in relation to publicity, the pattern evident in Figure 2.3 is similar to those showing the number of publicity occurrences per quarter. The spend per quarter on advertising (the blue line) peaks at the same time as the number of publicity occurrences (in quarter eleven, October to December 1999) and tails off after this point. Interestingly, there was very little spend between October and December 2000, and the spend then increases again towards the end of the scheme. This might suggest that the coordinators made a final effort to promote the work undertaken by schemes. Reasons for such a final push might include a need to fulfil dissemination policies of certain agencies, a wish to promote good work to increase the chances of further funding or purely a need to use up any excess funds.

Figure 2.3 also shows that there is an interesting relationship between costs spent on advertising and those spent overall on implementation. In particular, for the five quarters between January 2000 and January 2001 the pattern is almost identical. In fact, the only points at which the two lines diverge substantially are during the last quarter of 1999 and the final quarter. However, it is also apparent that the main peak in advertising associated costs occurred before that for the overall costs, and there was also a second peak in the amount of money spent on advertising in the very last quarter. More generally, it is apparent that activity was promoted before (e.g. see quarter one in 1999), during and after the implementation of the schemes. This shows that staff were probably keen to promote their schemes prior to any implementation on the ground; this links in with the 'anticipatory benefit' idea explored by Smith et al, (2002) and investigated further later in this paper.

3. It should be noted here that these costs do not include what has been termed "uncontrolled" publicity. This is because there was no direct costs to the schemes for this type of publicity. Therefore, these costs should be seen as an underestimate of the actual amount spent on publicity. This would affect the trendlines shown in Figure 3 only if the amount of uncontrolled publicity varied across schemes.

Figure 2.3: Average quarterly spend on advertising and all costs



The cost of publicity

As detailed data were collected regarding the cost of each of the 21 schemes, in most cases it was possible to calculate the economic costs associated with the various types of publicity, whether they were part of stand-alone publicity campaigns or not. Unfortunately, because of the nature of the interventions and publicity used, the costs identified excluded personnel costs as it was not possible to determine the man-hours exclusively dedicated to publicity-related activity. Once more, it is also important to note here that 'uncontrolled' publicity such as newspaper articles or radio appearances are not included in the costs. This was because the relevant data were unavailable and the associated costs could not be estimated.

Table 2.4: Cost of advertising for each type of intervention

Intervention Type	Total spend on advertising (£'s)	Number of interventions	Average spend per intervention (£'s)
Stand-alone Publicity Schemes	1,138	2	569
Community Interventions	4,714	10	471
Target Hardening	3,756	12	313
Offender Schemes	892	4	223
Alleygating	657	3	219
Market Disruption	605	3	202
Youth Diversion Work	939	5	188
Surveys and advice	759	5	152
Environmental Improvements	822	6	137
Police Operations and enforcement	582	5	116
Education and awareness	525	6	88
Property Marking	285	6	48
Property Storage	13	1	13
Total (average)	15,687	68	(231)

Nevertheless, Table 2.4 gives some indication of the non-personnel related costs associated with the different types of interventions. The second column shows the total costs associated with advertising for each type of intervention, calculated using the costs for every intervention of that type implemented. Column 3 shows how many interventions of each type were implemented across the 21 schemes that had advertising costs, and the final column shows the average cost of advertising for each type of intervention calculated using the data in columns 2 and 3. It is clear that the amount spent varied quite substantially depending on the type of intervention. For example, property storage, education/awareness and property marking schemes had cheap advertising costs associated with them. As expected, stand-alone publicity schemes had fairly high advertising costs associated with them. The amount spent on advertising for community involvement and target hardening were also well above average. Reasons for these differences in cost are likely to be due to the items of publicity used by these schemes. For example, the property marking and education schemes tended to involve the distribution of stickers and leaflets, whereas the target hardening and community schemes generally involved more expensive items, such as resident surveys.

Pre-implementation publicity

The Home Office grants were awarded in late December 1998/early January 1999, and the earliest inception date of any scheme was the first quarter of 1999. Therefore, since the most common inception date for schemes was the second quarter of 1 999, there was nearly always at least one quarter in which publicity of the scheme could begin without any implementation on the ground.

For a variety of reasons, the 21 schemes commenced on different dates. Table 2.5 summarises information regarding the dates on which implementation began. The 'start quarter scheme' column shows the official dates on which the scheme managers reported that activity began. As noted above, to allow an in-depth Cost Effectiveness Analysis (CEA) to be conducted for each scheme, detailed information regarding the timing and costs incurred by each scheme were collected. Thus, as is shown in the 'start quarter inputs' column of Table 2.5, it was also possible to determine the dates on which spending, and hence, implementation activity commenced for each scheme. It can be seen that in a number of cases there are differences between the official start dates of the schemes and those on which spending began, with the start quarter for the input costs preceding the official start dates of the relevant schemes. In fact, in some cases, activity began straight after the bid had been submitted to the Home Office. This is likely to be due to scheme input and activity starting before the scheme was officially given the go-ahead by the Home Office. Such costs generally included initial meetings concerning the project or bid preparation costs. This shows that in some cases, the schemes did not wait until they were officially notified to begin activity in the scheme areas. One plausible reason for this is that the schemes in question wanted a 'head start' with implementation, or that many partnerships had considered undertaking the projects even if their bids for Home Office funding were unsuccessful.

Table 2.5: Input and official start dates for schemes

Scheme	Start quarter (inputs) (date activity commenced)	Start quarter (scheme) (official start date of scheme)	Pre-start date publicity?
Ayresome	Q2 99	Q4 99	YES
Bacup	Q2 99	Q3 99	YES
Bensham	Q2 99	Q2 99	
Burnley	Q2 99	Q4 99	
Grovehill	Q1 99	Q3 99	YES
Hartlepool	Q4 98	Q2 99	
Jesmond	Q2 99	Q2 99	
Ladybarn	Q3 99	Q3 99	
Liverpool	Q2 99	Q2 99	
Morecambe	Q2 99	Q2 99	
Oldham	Q2 99	Q4 99	
Rochdale	Q2 99	Q3 99	
Rusholme	Q1 99	Q4 99	
South Shields	Q1 99	Q2 99	
Stockport	Q2 99	Q2 99	
Stockton	Q1 99	Q2 99	
Stoneyholme	Q2 99	Q4 99	
Sunderland	Q1 99	Q3 99	
Town East & West	Q4 99	Q4 99	YES
Wigan	Q4 98	Q1 99	
Wirral	Q4 98	Q1 99	YES

To enable identification of schemes for which it was evident that publicity had been used before the official start date of the scheme, the information concerned with scheme start dates shown in Table 1.5 was cross-referenced with the data collected from the quarterly publicity templates, (this was based on incidents of publicity rather than costs and therefore included 'uncontrolled' publicity). This was found to be the case in five of the projects, indicating that for a fairly substantial number of schemes formal publicity regarding the scheme was generated before any physical implementation began.

Two case studies of publicity timescales

It is apparent from the sections above that there were substantial variations in the frequency, timing and longevity of the publicity events used in the 21 different projects evaluated.

However, the data already presented were generated by averaging the results across the 21 schemes. This approach will undoubtedly have masked some of the subtle (and not so subtle) differences between the different schemes, and hence to illustrate such differences in more detail, this section compares and contrasts two different schemes in terms of their use of publicity. Figure 2.4 shows the changes in the burglary rate over time in the Hartiepooi scheme area. For comparison purposes, it also shows the changes in the burglary rates for the police Basic Command Unit (BCU)[4] in which the scheme was situated, the remainder of the police force area (PFA), and for England and Wales. Details of the timing and nature of significant publicity events are superimposed on top of these rates. Figure 2.5 shows the same information for the Wirral scheme. Once again it should be noted that the quarterly publicity templates were used to produce this information and hence the anaylsis did not rely on cost data. For this reason 'uncontrolled' publicity events that the scheme managers were aware of will be included here. Furthermore, to complete the quarterly templates, project leaders were required to give detailed information on the geographical coverage and the longevity of the publicity events.

Comparison of the two figures reveals that there are some interesting differences between the type and longevity of publicity used in these two schemes. In particular, it can be seen that publicity events on the Wirral tended to be short-lived, one-off types of publicity. In contrast, most of the publicity undertaken in the Hartiepooi project area was longer-term and lasted for two or more quarters. In addition, the Wirral scheme shows evidence of pre-scheme publicity, which was of an informal nature, whereas all the publicity in the Hartiepooi scheme commenced after the official start date of the scheme.

Comparing the publicity events and the level of burglary in the project area and the wider BCU and PFA, it can be seen that firstly, for Wirral, two of the publicity events occurred in the quarters that preceded a drop in the burglary rate in the scheme area (informal community meetings and letters to householders in the area), drops which exceeded those observed in the comparison areas (BCU, PFA and England and Wales). Relative to other forms of publicity, such as newspaper articles, the two types of publicity used are both less formal, but more direct in terms of resident involvement/contact.

The only short-term publicity campaign (a crime prevention caravan) in the Hartiepooi scheme area also appears to have commenced in the quarter before a substantial drop in the burglary rate in the project area, a drop which was greater than that seen in the comparison areas. Moreover, this reduction was sustained over a significant number of

4. BCUs are sub-areas of police force areas. For instance, the Wirral Scheme is located within the 'A' BCU of the Merseyside PFA. There are six BCUs in all that make up the police force area.

subsequent quarters. As a longer-term measure, leaflet packs were also distributed over the time period for which a drop in the burglary rate was sustained, which may suggest that publicity regarding the scheme disrupted offending behaviour by changing offenders' perceptions of the risks etc. involved. In contrast, the publicity generated by posters and newspapers (which were longer-term in nature) does not pre-date any significant drop in burglary rates. Once more, it is interesting to note that these latter types of publicity were less direct, more passive types of publicity than the crime prevention caravan and leaflet campaigns.

Of course, these analyses are descriptive in nature and do not demonstrate that the reductions in the burglary rates observed in the two projects considered can be attributed to the effects of publicity, but they do clearly illustrate the differences in the timing and nature of the publicity employed between schemes. The analyses presented in the next chapter extend the analyses presented here by examining the relation between the timing and intensity of publicity and burglary reduction using quantitative statistical methods.

Figure 2.4: Burglary rates and the timing of publicity events in Hartlepool

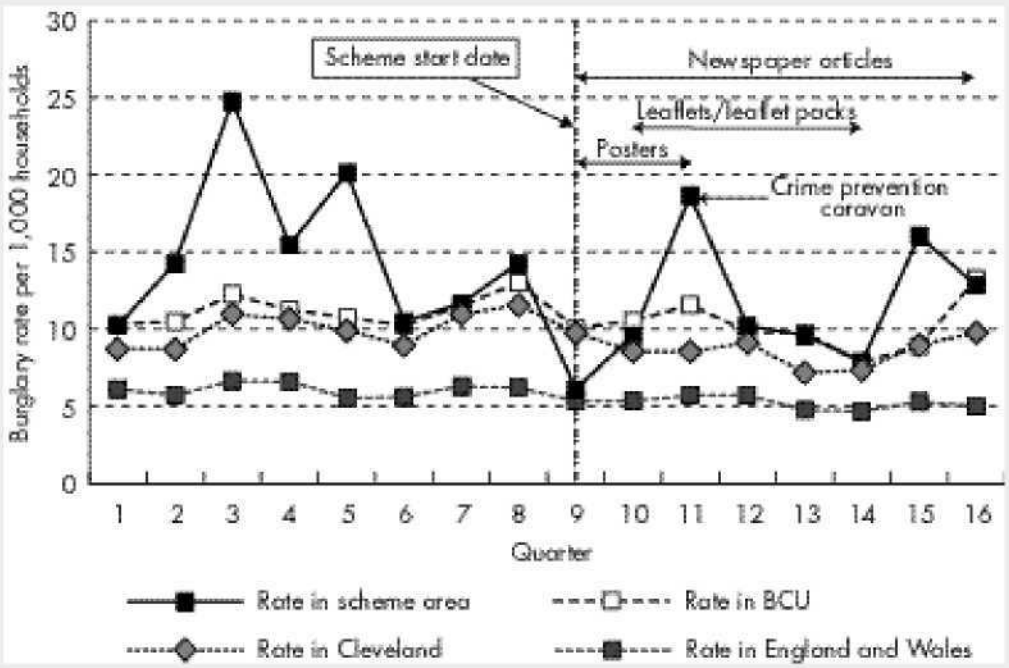
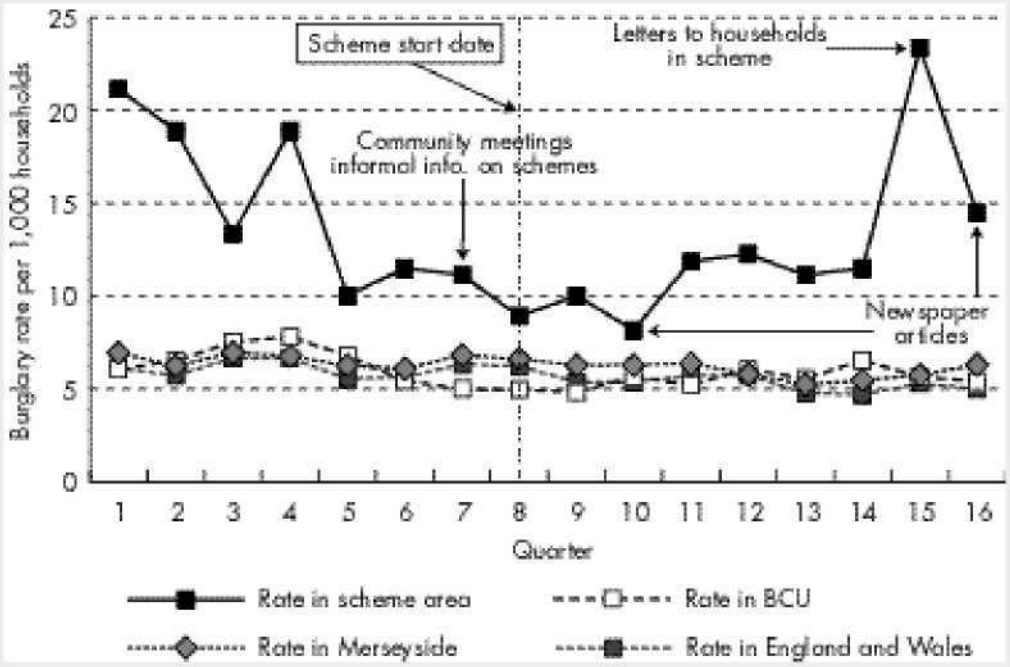


Figure 2.5: Burglary rates and the timing of publicity events in the Wirral scheme



3. Does publicity reduce burglary?

Having illustrated the types and extent to which publicity was employed by the different schemes, this section examines the influence of publicity on burglary reduction. In addition, this will be compared with the impact of other factors such as the type of interventions used and the number of partner agencies involved in the scheme.

To do this, two different types of analyses were performed. First, differences between schemes in terms of overall burglary reduction and the use of publicity were examined. This included publicity associated with interventions, and publicity that was considered to be an intervention in its own right- i.e. stand-alone publicity campaigns. Thus, this analysis was designed to answer the question 'did more successful schemes tend to be those that used more publicity?' Second, using the quarterly data obtained a time-series analysis to see if changes in burglary rates tended to be coincident with (and hence be likely to be attributable to) publicity events was performed.

Further pertinent questions that are addressed here look at the relationship between reductions in burglary and the intensity of publicity or advertising in the area. There is also a more in-depth examination of the role of stand-alone publicity campaigns. Thus, the issues dealt with in this chapter are as follows:

- Were schemes that used a large amount of publicity more successful than those that did not?
- Were schemes that used stand-alone publicity campaigns more successful than those that did not?
- Were other factors, such as scheme management or the type of intervention implemented more or less associated with scheme success than publicity?
- Was there a relationship between the timing and intensity of publicity and burglary reduction?

Is publicity associated with scheme success?

In order to assess the degree to which publicity influenced scheme success, a number of different regression and correlation analyses were undertaken. The first compared the effectiveness of the various broad types of intervention that were used across the 21

northern RBI schemes. The six broad types were:

- Location specific situational crime prevention (e.g. target hardening)
- Area wide situational crime prevention (e.g. CCTV and alleygating)
- Stakeholding (e.g. publicity and neighbourhood watch)
- Enforcement (e.g. high visibility policing)
- Changing offender behaviour (e.g. drug rehabilitation schemes)
- Property marking and registration schemes

Stakeholding was the broad category which incorporated publicity campaigns. Scheme success (burglary reduction), expressed relative to changes in the wider policing area, was calculated using procedures described in detail elsewhere (Johnson et al, 2003). The results of a bivariate correlation analysis are shown in Table 3.1. They demonstrate that two broad types of intervention had significant relationships with scheme success, these being location specific situational prevention and stakeholding (which included publicity campaigns)[5].

Table 3.1: Bivariate correlations showing predictors of scheme success

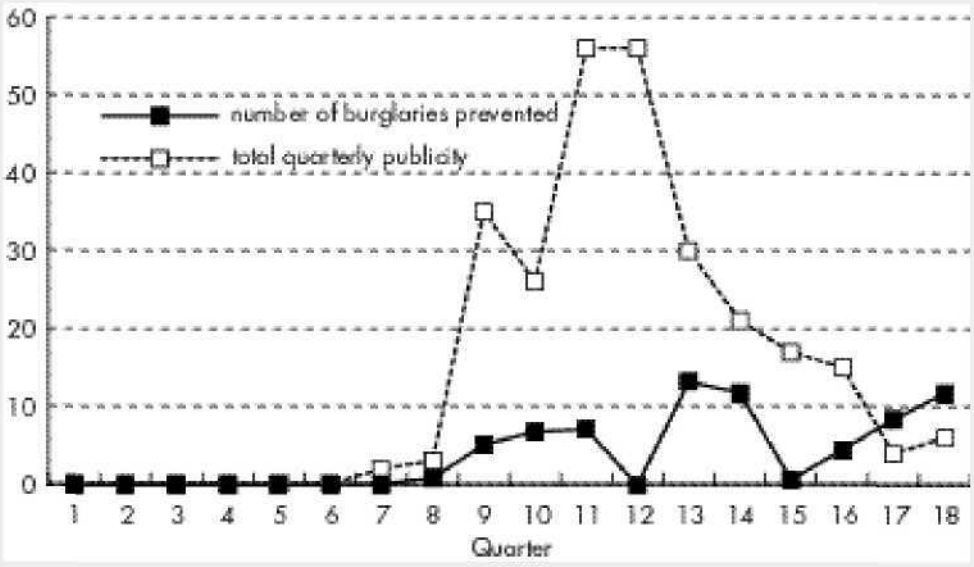
	Correlation coefficient	Sig.
Stakeholding	.50	.02
Location specific situational crime prevention	.48	.02
Area wide situational crime prevention	.11	ns
Enforcement	.13	ns
Offender (changing behaviour)	.03	ns
Property marking	.22	ns

However, is there any evidence that it is publicity per se that helps to explain variation in burglary reduction? In order to examine this point in more detail, further analyses examined the association between burglary reduction and a large number of other variables. These included social and economic characteristics, the presence of other initiatives operating in scheme areas and process variables such as agency involvement and type of management. The only variable that was significantly correlated with scheme success was the presence or absence of formal scheme publicity (rpb (21)=.44, p<.05). The only other variables that approached significance were the number of agencies involved and the level of community participation.

5. To determine whether or not these two relationships were independent of each other, further analyses were conducted. Partial correlations confirmed that the associations were reliable for each of these two variables when the other was controlled for (stakeholding=0.48, p<0.05; location specific=0.46, p<0.05).

An equally important question is whether the changes in the burglary rate were coincident with high levels of publicity. If they are, it gives more weight to the argument that publicity might help explain reductions in crime. One way of examining the relationship between the timing of publicity and burglary reduction in more detail is to visualise this relationship using simple graphs. Therefore, Figure 3.1 shows the relationship between the (average) intensity of publicity and the average number of burglaries reduced per quarter across the 21 schemes. The average number of burglaries prevented was calculated by simply summing the number of burglaries prevented in each quarter across all 21 projects and dividing by 21. In this case, for ease of interpretation, positive values indicate a burglary reduction. It appears that there are some patterns in common for the two variables. Both of the quarterly values increase and then drop and then peak again for two quarters before dropping off again. Interestingly, the quarterly outcome pattern seems to mimic the publicity pattern with a one- or two-quarter delay. This might indicate that the publicity takes some time to filter through - and that there is a delay before it affects the burglary rate. This is supported by the case studies for the Wirral and Hartlepool schemes presented here.

Figure 3.1: Relationship between publicity occurrences per quarter and average number of burglaries prevented



However, whilst this type of analysis is useful, it is not possible to determine the reliability of this pattern without using inferential statistical procedures. Moreover, the graph shown as Figure 3.1 considers only the changes in the use of publicity and burglary reduction. It is equally plausible that other factors will change over time and that these will also be coincident with burglary reduction. For this reason, a statistical (multi-level) model[6] was used to compare the power of changes in levels of publicity over time with other variables at explaining decreases in the crime rate. The other variables for which temporal information (in this case, across 1 8 quarters) was available were the intensity of the scheme in terms of the spend per household, the number of partner agencies involved at various points in the implementation process and the number of changes to the key staff on the project over time.

Table 3.2: Estimated model coefficients, standard errors and twice log likelihood statistics

Model Variable	Coefficient and standard error	Likelihood
Constant	8.249 (2.110)*	2376.263
Spend per household	-0.030 (0.049)	
Publicity	-0.576 (0.279)*	
No. of agencies involved	-0.366 (0.177)*	
Key personnel changes	1.735 (1.155)	
Rate in BCU	0.947 (0.132)*	

* p<.05

Table 3.2 shows the results of the statistical modeling. It is evident that three variables (other than the constant) were significantly related to changes in the burglary rate. Firstly, the rate in the BCU was highly correlated with the burglary rates in the scheme areas. Including this variable in the analysis effectively controls for the background variation in the burglary rates which may, for instance, be partly attributable to more general changes in policing policy and other factors. The other two variables associated with changes in the burglary rate were the amount of publicity used and the number of agencies involved. Variables that were not significantly related to changes in the burglary rate were the intensity of the schemes, expressed in terms of the amount of money spent per household, and the number of changes in key personnel made throughout the lifetime of the scheme.

6. In this analysis, rather than using more conventional statistical procedures such as regression analyses, we used a technique known as multi-level modelling, or hierarchical linear modelling (for a detailed discussion of multi-level modelling the reader is referred to Snijders & Bosker, 2000; http://multilevel.ioe.ac.uk; and, for an example of the use of multi-level modelling in evaluation research, see Ekblom et al., 1996).

Closer inspection of the results indicated that burglary reduction was associated with increases either in the use of publicity or the number of agencies involved. Interestingly, increases in both the publicity and the number of agency variables indicate a larger number of people knowing about, or being involved with the crime prevention activity of the scheme.

Advertising intensity and burglary outcomes

An alternative way of conceptualising the intensity of publicity would be to calculate the total amount of money spent on this activity. Doing this would allow the crude question 'were the schemes that spent the most money on advertising and publicity those that were most successful?' to be answered. Of course, in answering this question it would be important to take into account the size of the area to be covered by the publicity. Thus, using the data collected for the CEA a publicity intensity measure for each scheme was produced. This was derived by dividing the total amount of money spent on advertising for each scheme by the number of households in the scheme area. The schemes varied from being relatively intense (£188, £89, £69 in Oldham, Stockton and Wigan per 100 households respectively) to being less intense (36p, £2.02 , £3.64 in Town East, Jesmond and Rochdale per 100 households respectively) or having no costed spend on advertising at all (Morecambe, Ayresome and Grovehill).

The average number of burglaries prevented by the fifty per cent of the schemes that spent the most on advertising was then compared with the remaining schemes - those that spent the least. To do this, the schemes were ranked in terms of the amount of money spent on publicity per 100 households, and the average number of burglaries prevented by the top and bottom half of schemes was calculated. (Please note these costs do not include "uncontrolled" publicity). Thus, Table 3.3 shows the number of burglaries prevented by schemes (calculated over an eight quarter period) for which the publicity intensity measure was above and below the average cost (of £6.57 per 100 households) across the 21 schemes. It reveals that the number of burglaries prevented by schemes with higher publicity intensity was greater than those with lower intensity. This suggests that schemes that were more successful at reducing burglary tended to be those with a higher advertising intensity. However, the differences in these means do not reach statistical significance, although this may largely be due to the small number of cases that were available for the analysis (only ten or eleven schemes per group).

Table 3.3: Burglary outcomes and advertising intensity

Intensity per 100 households	Number of schemes	Mean burglaries prevented
≥ £6.57	11	82.43
< £6.57	10	33.97

The influence of stand-alone publicity campaigns

As noted earlier in Table 2.1, just over one-half (N = 12) of the schemes involved stand-alone publicity campaigns. These stand-alone campaigns were individual interventions that were generally implemented continuously over several consecutive quarters. The fact that these campaigns were monitored as interventions in their own right indicated that they were long-term programmes with the specific objective of disseminating information on crime risks and crime prevention. As mentioned earlier, there existed a range of different types of campaign, including leaflet or newsletter drops, a series of media appearances or more interactive awareness raising campaigns. There was an element of cost associated with implementing these interventions, the overall implementation cost ranging between £644 and £60,748.

Evidence from the cost effectiveness analysis shows that these schemes were fairly cheap to implement, with the average stand-alone publicity campaign (including personnel costs) costing £17,900, in comparison to the average cost of interventions at £24,698. The cost effectiveness analysis reported elsewhere (Northern consortium final report, 2002) also showed that of the most effective five schemes, in terms of burglary reduction, four of them had stand-alone campaigns. This suggests that stand-alone publicity may represent a cheap and effective way of reducing burglary.

Some of the stand-alone campaigns did not advertise crime prevention activity, whereas others gave details of measures and any earlier successes of the scheme. Unfortunately, sufficiently detailed information (or numbers of schemes) to do a sub-analysis of these different types of campaign was unavailable.

A further important question to answer is how easy publicity schemes are to implement. For example, a scheme may be cost effective and successful at reducing burglary but be very difficult to implement on the ground. Unfortunately, the RBI evaluation was not designed to address this specific question. However, some data were collected as part of the process evaluation that may provide clues regarding the ease of implementation. Consideration of this data, summarised in Table 3.4, showed that it was apparent that schemes that had stand-alone campaigns appeared to be those that had been successful in terms of the process by which they were implemented.

Table 3.4 shows mean scores given by field researchers regarding a number of different aspects of the implementation process. In each case, a rating between one and five was provided, with five indicating that the aspect of process implementation was very effective and one indicating that it was ineffective. It can be seen from Table 3.4 that with one exception, in every aspect of the implementation process recorded by researchers, those with a stand-alone campaign were rated, on average as being more effective than those without.

Table 3.4: Mean ratings of implementation process for schemes with and without stand-alone campaigns

Stand-alone campaign?	No	Yes
Partnership: overall score for partnership given by researcher	2.89	3.75
Planning: overall score for planning given by researcher	3.22	3.17
Community: overall score for community involvement given by researcher	2.89	2.92
Project management: overall project management score given by researchers	3.56	3.67

This information may suggest that such interventions, as part of a package, or on their own, might be easier to implement or may even help to smooth over the implementation process. There are, of course, issues relating to the causality of these relationships. For instance, perhaps those schemes with good partnership working, management and planning could see the value of publicity interventions, and hence tended to implement them more often.

4. Anticipatory benefits

As noted in the introduction, anticipatory benefit is the term given to a specific crime pattern signature whereby reductions are observed before implementation begins. Smith et al. (2002) present evidence for the existence of such a signature across a number of evaluation studies concerned with a variety of different crime prevention interventions. However, these authors did not have the data required to use inferential statistics to determine whether the findings were statistically reliable. Using data generated for the RBI evaluation, it has been possible for us to investigate the phenomenon of anticipatory benefit further using statistical techniques. The analyses shown here use quarterly burglary data for 42 schemes evaluated as part of the Home Office's RBI to establish whether a significant anticipatory effect was, in general, observed in the quarter before the inception of the schemes. Importantly, the availability of (time-series) burglary data for the action areas, the surrounding BCUs and PFAs, allowed inferential statistics to determine the reliability of the findings to be conducted. Note that this analysis uses data for schemes implemented in the north of England and the Midlands and therefore increases the sample size from 21 to a more reliable 42 observations.

In order to produce data that could be meaningfully compared across the 42 schemes, and that accounted for general trends in the burglary data in the local area of each scheme, 'crime ratios' were calculated for each of the 18 quarterly time periods for each scheme using the following formula:

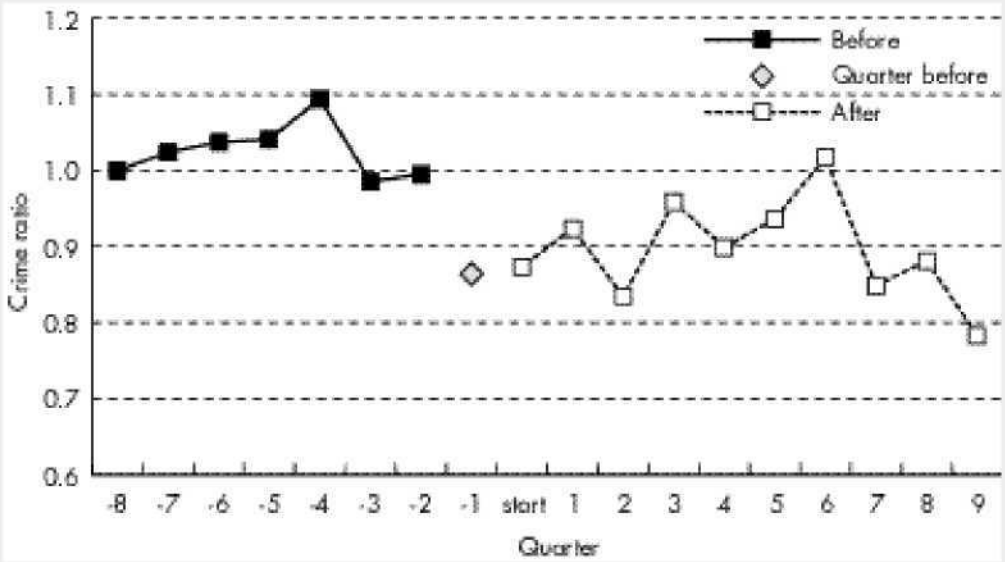
$$\text{crime ratio} = \frac{\text{scheme area burglary count}}{\text{comparison area burglary count}}$$

For the purposes of this analysis, the comparison area selected was the remainder of the police force area within which the scheme was located. Using this area has a number of distinct advantages. In particular, this area is large enough to reflect general trends and to not be too influenced by interventions that may be operational but not easily identified within smaller areas; any changes in general policing policies will be consistent across the entire area, and hence any changes will be controlled for; and, that it was easy to identify and obtain data for this area in each case.

To interpret general trends and examine evidence of anticipatory benefit, the average crime ratio across all 42 schemes was calculated. The results are shown in Figure 4.1. Note that

lower values of the crime ratio show that the schemes have low burglary rates in comparison to the relevant Police Force Area; where the crime ratio decreases across successive quarters this indicates a pattern of burglary reduction.

Figure 4.1: Mean crime ratio between Scheme area and PFA for before and after time periods, and for the quarter prior to the inception of the schemes



To ease interpretation, the graph has been organised to show the trend in the data for seven historic quarters (black line), the quarter immediately preceding the start of the schemes (the diamond) and the subsequent eight quarters (the dotted line). The graph has also been indexed to the first quarter of the 'before' period (labelled -8 on Figure 4.1). Generally, relative to the historic period, the average crime ratio is lower following the implementation of the schemes, suggesting that they were successful at reducing burglary. Critically, compared to the previous quarters, there is a large drop in the average crime ratio in the quarter that precedes the start of implementation. In addition, for the same quarter the crime ratio is lower than that for the first quarter of scheme operation, and for many successive quarters. Thus, the results show considerable evidence of anticipatory benefit.

In order to establish the statistical reliability of this result, a paired sample t-test was conducted. This compared the average crime ratio for the seven historic quarters with the crime ratio for the quarter immediately preceding scheme operation across all 42 schemes.

The results confirmed that the crime ratios for the quarter immediately prior to scheme inception were significantly lower than the average crime ratios for the historic period ($t(42)=-3.01$, $p<.01$, two-tailed). This provides convincing evidence that on average, the 42 schemes showed anticipatory benefits in the quarter before scheme inception. Put more simply, there was a significant reduction in the burglary rate before the schemes had become active. A similar analysis, which compared the crime ratio for the eighth quarter with the average for the subsequent quarters, revealed that there was no significant difference ($t(42)=0.17$, p=ns, two-tailed) between these values. Thus, the effect on the crime rate that may be attributed to anticipatory benefit, appears to be of similar magnitude to that attributable to the interventions themselves[7].

The following sub-section will discuss the implications of this finding and make an assessment of the degree to which such anticipatory benefit could have been caused by early formal or informal publicity.

Alternative explanations for anticipatory effect

As Smith et al. (2002) discuss, whilst the pre-implementation publicity associated with crime prevention schemes may explain anticipatory effects, a number of plausible alternatives exist. These are as follows:

1. Artefactual effects caused by the smoothing of curves using moving averages. Such effects would be limited to very short-run anticipations and can be discounted as a major factor;
2. Artefactual changes caused by over-recording crime levels in expectation of gaining funding to reduce the crime levels thus inflated. Such effects should be detectable by contrary changes in events uprated to the crime of focal concern (e.g., a decrease in the numbers of criminal damage crimes as those events are 'promoted' to attempted burglary);
3. Seasonal effects masking the absence of change; where an initiative takes effect at the same time as a seasonally predictable decline. This is possible because action is likely at a time when matters are at their worst.
4. Regression effects, where a place is chosen for intervention because it is extreme relative to other places is also extreme relative to itself at other times, and will thus tend to experience declines over time;

7. The same pattern of results were observed for separate analyses conducted using data for the 21 schemes located in the north of England only or in the Midlands only.

5. Creeping implementation, where some elements of a programme are put in place before an official start date;
6. Preparation-disruption effects, where surveillance is a by-product of installation of crime-reductive hardware, such as street lighting;
7. Preparation-training effects, where planning, population surveys etc. render officers better equipped personally to understand and reduce local crime;
8. Motivation of officers involved to make an initiative a success, which translates itself into better performance in advance of the initiative itself;
9. Preparation-anticipation effects, where equipment is deemed by motivated offenders to be operational before it is;
10. Publicity/disinformation effects, whereby covert measures are presumed to exist as a result of publicity or hearsay.

(Taken from Smith et al., 2002)

In the current analysis, it is possible to rule out most of these. First, inspection of Figure 4.1 illustrates that, for the historic period, the crime ratios remained relatively stable over time and are consistently higher than the ratio for quarter '-1', suggesting that the anticipatory benefit signature observed was unlikely to be the result of regression to the mean.

Second, for the process and cost effectiveness elements of the evaluation of the 21 projects implemented in the north of England, detailed information on the implementation process and specifically when outputs were realised was collected (e.g. when surveys were undertaken or locks fitted). Thus, for these schemes it is very unlikely that the anticipatory effects observed could be attributable to practitioners beginning the implementation process prior to the official start dates. In relation to this latter point, it is, of course, possible that implementers may have deceived the fieldworkers by telling them that they had not commenced implementation when they in fact had. However, it is difficult to see why they would be motivated to do this. The main reason for this is that they presumably would hope that the evaluation would show their scheme to be effective. Since they would, in all likelihood, be aware that the simplest way of measuring the effectiveness of a scheme would be to compare the crime rates before and after implementation, they would know that it would be wise to provide accurate information on the start date of the scheme. Moreover, it would be particularly counter-intuitive to pretend that the implementation of an intervention had not yet begun when it in fact had. This is because if an intervention was successful, the implementation period would be coincident with a reduction in the burglary rate. Critically, if this period was included in the pre-implementation period rather than the after period, this would have the effect of lowering the pre-implementation burglary rate and thus the estimate of the effectiveness of the scheme. The implications of this will be discussed further in the next sub-section.

Third, Smith et al. discuss the possibility that anticipatory effects may be observed as a result of changes in police recording practices. If these were to change immediately before the inception of a scheme, depending upon what changes were made, it is possible that this may result in fewer offences being classified as burglaries. For instance, some incidents may be recorded as acts of criminal damage instead. However, the authors are not aware of any changes in police recording practices taking place that would cause the effects observed here. Moreover, even if subtle changes were introduced, it is difficult to imagine a scenario where, across 16 police forces, these would have been implemented at the exact moment in time that the anticipatory effects were observed. Force-wide changes in reporting procedures as an explanation can therefore be ruled out.

There is of course the possibility that there were changes in reporting procedures at the (very) local level of the scheme itself. This might represent an attempt of the local police to 'make the scheme look good'. However, why would they use their energies in doing this in a rather specific, small local area? After all, many crime prevention schemes operate within a Police Force Area at any one time, so why choose this one? Furthermore, it would be foolish of the Police to gerrymander the data in this way before the scheme has actually started. Lastly, this implies that the Police across many Police Forces are unethical, and try to manipulate figures, something that the authors, for one, find hard to believe.

Fourth, it is unlikely that a seasonal effect could explain the results observed. Whilst this is a candidate hypothesis where crime rates are used, in the present paper crime ratios were used. By considering the levels of crime in the action areas relative to those in the wider policing areas, general seasonal effects are essentially controlled for in the analysis. However, this line of reasoning assumes that seasonal effects would be similar across different areas, which may not be true. Fortunately, the data used spans a sufficiently long time period for it to be seen whether or not a similar pattern was observed for each scheme in the previous year. This was not the case and hence it is concluded that it is unlikely that the results discussed here are simply the expression of a seasonal trend.

Fifth, the possibility exists that the effect was observed simply because the schemes began implementation prior to the date used in the analysis presented here. In the analysis outlined a common start date of April 1 999 was used for each of the schemes. However, as it is evident from tables such as Table 2.5, the schemes reported different official start dates. Thus, for completeness, the analysis was repeated for the 42 schemes using the individual start dates of each of the 42 schemes. The results were remarkably similar to those presented, showing that anticipatory benefit is still evident when individual start dates are used. As shown, the difference in the mean crime ratios for the historic period and the

quarter immediately preceding inception was statistically significant, showing lower levels of burglary in the latter ($t(42)=-2.51$, $p<.02$, two-tailed). And, again, the crime ratio for the quarter that preceded implementation was not significantly different from the average ratio for the subsequent quarters ($t(42)=0.46$, p=ns, two-tailed).

Another important implication of this result is that it shows that the anticipatory benefit signature observed was not purely due to something that particularly happened in the first quarter of 1999. Unlikely though it is (see comment above), it is possible that all forces changed recording practices in this quarter, for example. Using individual start dates rules out the possibility that the effect was due to such a temporally defined event. Furthermore, both the analyses have used comparison areas in the crime ratios. Presumably, if there had been changes in recording practice, the comparison areas would have equally been affected by any such changes.

A final possibility considered here concerns changes caused by the police over-recording levels of crime in expectation of gaining funding to reduce it. This possibility is also unlikely in this case. This is because the original invitation for partnerships to apply for grants was made in November 1998 by the Home Office. This falls into quarter four of 1998 and is that marked -2 on Figure 4.1. The figure shows no particular inflation of the burglary rate in this quarter compared with other historic quarters - in fact the number of burglaries in the scheme areas is lower in that quarter than several others in the historic period. There is therefore no evidence of an attempt to inflate figures to gain funding from the RBI program.

For these reasons and due to the existence of information demonstrating that publicity (but not physical implementation of measures) often occurred before the official start dates of many schemes, the authors believe that the most likely explanation for the anticipatory benefits reported here was that the effect was due to the influence of publicity. The findings discussed here and by Smith et al. should have a significant impact on our way of thinking about crime prevention. Smith et al. selected the term 'anticipatory benefit' to describe the phenomenon because the practical implication of anticipatory benefit is identical to that of diffusion of benefits generally; that crime prevention activity can have effects that extend beyond the operational boundary of a scheme. Importantly, the implication of the findings is that thinking about crime prevention should not be limited to considering effects in space alone. Consideration of temporal boundaries also warrant the attention of practitioners and evaluators alike. Evaluation research has previously considered the residual effects of operations that persist after an operation (Sherman, 1990), but there now needs to be an equal fascination with effects that are driven by the anticipation of crime reductive techniques.

Implications of anticipatory benefit for evaluators

The results presented here demonstrate that anticipatory benefit is a common outcome of crime prevention activity. As a result, the authors recommend that future evaluation research should explore this phenomenon in more detail. One area of investigation would be to consider correlates of anticipatory benefit, with the aim of identifying what factors might enhance or impede this effect, so that strategies that can maximise the phenomenon may be developed, implemented and tested. For instance, are greater anticipatory benefits realised with certain types of intervention or forms of pre-implementation publicity?

However, the implications of the findings for evaluation are more pervasive than this. If anticipatory benefit is a likely outcome, and one that can be attributed to crime prevention, then it should be made clear that a number of evaluations conducted to date potentially have underestimated the effectiveness of crime prevention initiatives. The reasons for this are two-fold. First, evaluators have tended to assume that reductions in crime that occur immediately before the start of implementation cannot reasonably be attributed to a scheme. Thus, in many cases actual reductions in crime caused by a scheme may have been overlooked.

The second issue relates to the methodology commonly used to evaluate crime reduction schemes. To evaluate the effectiveness of a scheme, most evaluators compare the crime rates before and after the inception of a scheme. The key point here is that the 'before' period traditionally used (say, two years prior to implementation) may be contaminated because the scheme had an effect before implementation began. Thus, where an anticipatory benefit occurs, the average crime rate for the before period will be lower than it should be, because the 'before' period includes a period of time when the scheme actually had an effect. Thus, it is possible to imagine a range of possibilities where an evaluator would conclude that an effective scheme was unsuccessful or had only a modest effect because of the potential for error in the estimation of the pre-implementation crime rate[8].

To illustrate the extent to which the results of an evaluation might be affected, analyses that do and do not account for anticipatory benefit for the 21 schemes implemented in the north of England are presented. The results presented in Table 4.1 show estimates of the number of burglaries prevented across the 21 schemes (see Johnson et al., 2003). Four different estimates are shown in the Table. The first, which is called the standard outcome here, was calculated using a two-year before period that included the quarter that preceded

8. A point which requires qualification is that this is only true where a pre-implementation reduction can be attributed to anticipatory benefit and rival explanations (such as the existence of other schemes which were operational prior to the inception of the scheme) ruled out.

implementation (quarter eight). This is the typical outcome measure included in evaluation reports, where such estimates are derived. The second measure, the adjusted outcome, also represents the number of burglaries prevented following the inception of the scheme, but the calculations used to compute this estimate exclude data for the quarter that preceded implementation. The third measure provides an estimate of the number of burglaries prevented as a result of anticipatory benefits, and the final measure is the sum of the adjusted and anticipatory outcomes.

Table 4.1: Estimated outcomes including and excluding the impact of anticipatory benefit (difference scores show the difference between the adjusted outcomes and the standard outcome measure)

	Standard outcome	Adjusted[1] outcome	Difference	Anticipatory[2] outcome	Overall outcome[3]	Difference
Mean	59.8	65.9	6.1*	26.8	92.7	32.8**
Total saving	1256.5	1383.7	127.1	562.5	1946.1	689.6

* p<.05 ** p<.01
1. 2 year outcome calculated excluding the last quarter of the historic period
2. Estimated burglaries prevented attributable to anticipatory benefit
3. Estimated burglaries prevented including those attributable to anticipatory benefit

The results show that the estimate of the number of burglaries prevented was lower for the standard outcome measure than for the adjusted outcome, a difference that was statistically significant. It is also clear that the estimate of the number of burglaries prevented that may be attributed to anticipatory benefit was large, being on average just under half of the standard outcome. Consequently, it is clear that the overall outcome, which includes the reduction realised during the anticipatory and implementation periods, is significantly larger than the standard measure of outcome. The difference in the total estimated number of burglaries prevented across the 21 schemes equates to 670 burglaries. This suggests that the 21 schemes were over 50 per cent more successful at reducing burglary than would be concluded if the standard measure of outcome were used. It is important to note that even if the anticipatory outcome is excluded, the adjusted outcome alone suggests that the 21 schemes were ten per cent more effective than would previously have been assumed.

This finding has important implications for cost benefit analyses. Briefly, cost benefit analyses (CBA) compare the financial cost of a scheme with the value of the benefits realised. If the value of the benefits is greater than the cost of implementation, the scheme is said to be cost beneficial. In the case of burglary reduction schemes, the former is generally

estimated by multiplying the number of burglaries prevented by an estimate of the monetary value of preventing one burglary to society. Brand and Price (2000) estimate the value of a single burglary as ranging from £2,200 to £2,500 with an average of £2,300. Thus, for the current example, the value of the total number of burglaries prevented using the standard measure of outcome and the adjusted (plus anticipatory) outcome are £2,891,100 and £4,475,800 respectively. It is easy to see that the conclusions of a CBA could seriously be affected by the difference (£1,584,700) in these two estimates.

A rethink is therefore recommended of the way in which evaluation studies are conceived. Much like a situation in which it is thought unwise to choose a control or comparison area that physically borders a crime prevention scheme (mainly due to the possibility of displacement or diffusion of benefit), it is also asserted that it is unwise to choose a design that incorporates 'temporally bordering' data into an evaluation 'before' period (for much the same reason). On the surface of it, it may seem counter-intuitive to consider the implications of something 'before it has happened', but this is probably the reason why such effects have not been uncovered in the past.

Consideration might also be given to similar concerns in analyses concerned with geographical displacement and diffusion of benefit. In any event, it is to be hoped that the current analyses (see also Smith et al., 2002) and the arguments presented prove sufficiently persuasive to influence future evaluation work and the way in which crime prevention is thought about.

5. Summary and policy implications

- In terms of overall scheme effectiveness, of the intervention types implemented by the schemes, location specific situational crime prevention and stakeholding interventions appeared to be most highly associated with effective burglary reduction. The table below outlines the crime prevention practices that were classified in these categories.

Intervention type	Crime prevention practices
Location specific situational crime prevention	• Target hardening individual households • Household surveillance • Security surveys of individual properties
Stakeholding	• Watch schemes • Stand-alone crime prevention publicity campaigns • Education/awareness campaigns • Resident involvement schemes • Tenant registration schemes • Landlord registration/incentivisation

A common element of the stakeholding interventions was the involvement of the wider community. These practices are most likely to be those that publicise the existence and objectives of the scheme to a large number of residents. Two possible mechanisms through which this could help cause crime reduction are through wider awareness causing increased vigilance among residents, or through communication of information on increased crime reduction activity to the offender population.

- Of all the variables that were analysed for which temporal information was available, only the number of partner agencies involved in the implementation of the scheme, and publicity in terms of the number of press articles and radio interviews conducted, were significantly related to scheme success.

- In comparison to the other process variables for which quarterly data were available (the number of agencies involved in scheme implementation and the number of significant staff changes), publicity was the most significant predicator of decreases in the burglary rate.

- In the analysis of the quarterly (time-series) data, the number of occurrences of publicity explained a significant amount of the variation of the changes in the burglary rate in the scheme, even after general changes in the burglary rate in the BCU had been accounted for. Thus, publicity seemed to have an effect on scheme success.

- Those schemes that had spent more per household on advertising showed larger burglary savings on average than those that had spent less.

- Of the five most cost effective schemes, four had implemented stand-alone publicity campaigns as part of their initiatives. Such stand-alone campaigns were fairly cheap to implement in comparison with other interventions, and were commonly implemented by schemes whose implementation had been rated as relatively most effective by the field researchers.

- There was evidence of an anticipatory benefit across the 42 projects analysed. In other words, the burglary rate decreased before the official start date of the schemes. It is suggested that this was linked to the pre-scheme publicity that occurred in a number of cases, or through word of mouth regarding the scheme.

Policy implications

In this final section, some of the policy implications of the current findings will be discussed and directions for future research suggested. The results presented provide strong evidence to support the hypothesis that there is an association between the extent to which burglary reduction schemes are publicised and how successful they are in terms of burglary reduction. This suggests that it may be advisable for scheme organisers to invest in local publicity as a relatively straightforward and cost effective method of enhancing the impact of crime prevention measures. Moreover, that it may also be prudent to implement local publicity campaigns as interventions in their own right, as was observed here in the form of stand-alone publicity campaigns.

However, a further possibility would be to consider implementing local publicity campaigns which do not give specific information about which areas are being targeted and when this is occurring. The benefit of this would be that, whilst offenders would be aware of the fact that crime reduction activity was occurring, uncertainty as to the exact location and timing of that activity would lead to them over-estimating the risks or effort involved in offending. This would in turn increase crime reduction gains.

A further factor that may be manipulated in future schemes is the timing and duration of publicity. As was evident from the analyses presented already, in general, the schemes examined here tended to publicise their efforts over contiguous periods of time. For instance, most schemes actively promoted their efforts, using at least one form of publicity throughout the period between April 1 999 (the most frequent start date of the schemes) and July 2000. However, some research suggests that advertising may be more effective if done in bursts rather than over continuous periods (Levens and Rodnight, 1973: cited in Riley and Mayhew, 1980). Moreover, research indicates that the effects of advertising campaigns extend beyond the period during which they are active (Berkowitz, Allaway and D'Souza, 2001). For instance, billboard campaigns can have residual effects for two weeks after the campaign has finished. Thus, by using bursts of publicity it may be possible to increase the cost effectiveness of publicity campaigns whilst coincidently improving their effectiveness.

It is also recommended that careful consideration is given to the types of publicity employed by schemes. Posters may represent a relatively cost effective way of advertising a scheme and these may be used over longer periods of time. However, care must be taken when designing and distributing posters. For instance, it is important that the message is clear and simple, and that any text is easy to read, as few people are likely to stop and read a lengthy notice that is difficult to understand. Moreover, it may be advisable to place posters at eye level to ensure that people actually see them in the first place. For instance, one RBI scheme, based in the south of England used a campaign which was intended to publicise the crime prevention interventions using a series of posters attached to lamp posts. However, this element of the initiative could have been improved as it was not clear what message the posters were intended to convey. Also, it appeared that the posters were fixed to lamposts at a height above eye level. Thus it was likely that many people would not even have seen them properly and that they were open to misinterpretation. Therefore, where posters (or other media) are used, before they are produced and distributed, it may be wise to do some preliminary testing of the clarity of the message, perhaps by interviewing members of the general public and asking them what they believe the signs mean, and whether they noticed them.

More generally, publicity campaigns should also draw upon the lessons that have been learned in advertising research. For instance, research suggests that adverts should be novel or interesting; be relevant to the audience they are aimed at; perhaps use 'figures of speech' that will be familiar to people; and, possibly incorporate humour or metaphors that make people think (for a further discussion, see Hallahan, 2000).

The speed with which people become familiar with, and consequently stop taking notice of, features of their environment should also be considered when using publicity campaigns. Thus, in the case of poster campaigns for example, it may be worth changing the design or colours of the posters every now and then, or perhaps simply changing their location so that they do not simply fade into the background. The latter technique is routinely employed in supermarkets to encourage people to see and hopefully try new products that they would ordinarily avoid. This issue is also related to a phenomenon called the mere exposure effect whereby simply repeating a message in the same way may encourage people to remember it (Zajonc, 1980), but that presenting a message in a variety of different ways enhances an advertising campaign by encouraging people to think about the fact that despite varying in some way, two different adverts convey the same message.

The use of logos can also increase people's familiarity with, and hence encourage them to remember, a campaign (Brosius and Bathelt, 1 994). The use of simple labels for graphics or logos can also enhance people's memory (Edell and Staelin, 1983) and thus increase the likelihood that the message of the campaign will have a longer lasting effect in their minds.

It should be noted here that in the case of crime prevention it is not the case that all publicity is necessarily good publicity. For instance, one scheme publicised an offender-based intervention, one facet of which involved sending offenders on holiday. Perhaps not surprisingly there was significant negative feedback from residents regarding this and as a consequence the intervention was abandoned. Thus, it might be suggested that to examine the effects of publicity on crime prevention more precisely, it would be necessary to identify which publicity events have positive and negative effects and take this into account in the analysis.

Because publicity can also have negative effects, care should be taken when deciding which aspects of a scheme are to be publicised, and with the message that is given. Possible negative effects could include publicity leading to an increase in fear of crime in an area or result in the public erroneously interpreting publicity as an indication that crime is increasing. Practitioners utilising publicity should also carefully consider what messages they are aiming to convey and ensure that these do not provide information that would assist offenders in adapting their offending behaviour to circumvent crime reduction activity. Thus, it is important to consider the potential detrimental effects that publicity may have, and future research may focus on examining how publicity campaigns are received by the general public and, if possible, offenders.

However, there are a number of problems with identifying positive and negative effects, which revolve around the difficulty of deciding how to rate each instance of publicity. For

instance, the way in which advertising or publicity affects people is likely to be a very subjective thing - what offends one person may please another. Hence, it may be very difficult to determine which instances of publicity had negative or positive effects, or both. Second, to do this would require detailed data regarding each instance of publicity, and would undoubtedly involve the commissioning of fieldwork designed to measure the public's or offender's reactions to each publicity event. Clearly, collecting such data was beyond the scope of the current research, but these points may be used to inform future studies.

A related issue that also requires attention is a comparison of the effectiveness of different types of publicity. Clearly, different types of advertising such as television adverts or poster campaigns will have different costs associated with them and may reach different audiences. They may also have different effects in the extent to which they are attended to by the public and the messages understood. For instance, TV and radio adverts are known to be more emotionally involving than printed media (Chauduri and Buck, 1995), although printed media may be understood on a rational level more easily. Different types of advertising may also differ with respect to their immediate impacts and in the longevity of their effects (Berkowitz, Allaway and D'Souza, 2001). The only research that the authors are aware of that has examined this issue in relation to crime was conducted in the Netherlands. Rather than researching the effects of publicising crime prevention activity, VanDijk and Steinmetz (1 981) examined the effectiveness of publicity in increasing people's awareness of the precautions they could take to avoid becoming the victim of a crime. The particularly relevant aspect of this study was that they compared the effectiveness of different types of publicity. The results of their survey indicated that whilst the majority (68%) of those questioned could recall information from the campaign, there were differential effects for the various types of media used. To summarise their results, the largest proportion of people (82%) reported remembering information from television adverts whilst fewer people reported recalling information from newspapers (37%) or posters (9%). However, whilst the results of VanDijk and Steinmetz's study are interesting, it should be noted that this study was not concerned with the publicity of crime prevention activity nor was it designed to examine the effects of publicity on offenders' behaviour or their perceptions of the risks etc. of committing crime.

Unfortunately, in the current research it was not possible to do a comparative analysis of this type, as the types of publicity used by the different schemes were not systematically varied. Thus, it is important that the specific factors that are to be addressed by future studies are determined a priori (i.e. before the schemes are launched) so that the relevant factors can be manipulated accordingly. For instance, one may wish to evaluate the effectiveness of posters versus newspaper articles. To do this, it would be wise to evaluate a series of (as

similar as possible) schemes for which half use newspaper articles to publicise the scheme and half use posters, and to see if the type of publicity used influences the success of the schemes when other factors, such as baseline conditions and differences in scheme intensity, are controlled for.

Interestingly, the least frequently used type of publicity used by the schemes evaluated here were those aimed directly at offenders. In light of the findings concerned with anticipatory benefit, it may be wise for practitioners to consider developing these types of publicity. For instance, Smith et al. (2002) discuss the possibility of using informants to communicate information on crime prevention activity to the offender community. Of course, it will be important to evaluate such effort to determine the effectiveness of this strategy.

In this paper, it has been shown that local publicity is an effective crime prevention tool and that many different types of publicity have been associated with burglary reduction schemes. Thus, the authors would encourage those implementing crime prevention schemes to use local publicity where appropriate and, to increase the likelihood of anticipatory benefit, to begin this process before implementation begins. Some readers wanting to know how to deal with the media might find it beneficial to consult the publication 'Ink and Airtime: Working Effectively With the Media' produced by the National Crime Prevention Council United States (for more details, see http://abstractsdb.ncjrs.org/). As with innovations in crime prevention measures, which are required to keep up with the 'arms race' between offenders and crime prevention practitioners (for example Ekblom, 1997), there is no reason why more innovative types of advertising and publicity should not be used. Any method of advertising that is used more generally could be applied to crime prevention. Some examples might be call centres ringing people to ask if they were aware a scheme was operating in their area, slogans on the back of bus or car parking tickets. More dramatic examples might include large billboards or even hot air balloons. With a little creativity, the sky is quite literally the limit.

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