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Counting crimes – the importance of understanding crime concentration for the design and evaluation of crime reduction strategies

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ABSTRACT

Crime statistics are most frequently concerned with the incidence of crime (usually quoted as a rate per population), occasional statistics are concerned with prevalence (number or proportion of victims within the population) but the concentration of crime (number of crimes per victim) is rarely quoted. This paper aims to demonstrate the importance of all three indicators of crime, prevalence, concentration and incidence, for understanding of crime levels through an analysis of self-reported victimisation data from 39 high crime areas. The analysis illustrates that areas can have high crime either as a result of high levels of victimisation (prevalence), high numbers of crimes

per victim (concentration) or a combination of both. These underlying dimensions of a crime problem must be understood in order to select the most suitable crime prevention interventions, and to target them appropriately.

INTRODUCTION

The concentration of criminal victimisation is a phenomenon of which most police officers, crime prevention practitioners and academic criminologists are all too aware. However this measure is rarely used to its full potential. It is used to indicate a problem's magnitude, that is, to stress that crime levels are not only high, but they are higher for particular victims or places. What is neglected is a central tenet of this paper — that areas with low and high concentrations of crime experience a crime problem of a different nature which requires a very different response. In other words, crime problems come in different shapes as well as different sizes.

An area may acquire a high level of crime in one or both of two ways. First a high proportion of households, individuals, or properties may be victimised. Second, properties or victims may be repeatedly

targeted. The proportion of potential victims who are victimised is referred to as crime prevalence. The number of crimes per victim (or property) is referred to as crime concentration. Together crime prevalence and crime concentration produce the overall incidence (or level) of crime within a given area (often quoted as a rate of crime per 1,000 population). To use the example of burglary, in an area of 100 homes, an identical burglary rate will arise from one house being burgled ten times (high concentration, low prevalence) or 10 houses being burgled once (high prevalence, low concentration).

The crime reduction strategies appropriate to high prevalence and high concentration areas are different. In the first case, precautions should primarily be distributed (by housing providers, police and others) amongst the not-yet-victimised. In the latter, substantial effort should be allocated to the already victimised as the strongest predictor of future victimisation is prior victimisation (Pease, 1998). In order to select strategies for targeting crime reduction interventions it is important to know whether an area has a high rate of burglary because of high prevalence, high concentration or both.

Assessments of crime prevention impact should also consider concentration and prevalence jointly. Farrell and Buckley's (1999) evaluation of a Merseyside domestic violence programme provides a case in point. Following the implementation of the initiative, reports of domestic violence increased. At face value this would suggest that the programme may have exacerbated the problem. However a more detailed analysis, informed by both prevalence and concentration, identified that the number of repeat victims reporting domestic violence incidents had reduced. In other words, restricting the focus to prevalence, an all too common approach, would have pointed to an unsuccessful programme and, worse,

suggested that it was having a detrimental effect. In contrast, a more thorough assessment, including both prevalence and concentration revealed not only a more positive, but more importantly, a more accurate picture of the programme's effectiveness.

In the author's experience the terminology of prevalence, concentration and incidence are not unknown amongst practitioners. However, the strategic direction that can only be gained by understanding the relationship between prevalence and concentration is far from realised. In a review of the strategies of the Crime and Disorder Reduction Partnerships, 35 per cent of 376 partnerships included targets to reduce burglary repeat victimisation, 43 per cent included targets to reduce domestic violence repeat victimisation, and 13 per cent included targets to reduce repeat victimisation of other crime types (Deakin & Chenery, 2002). Measuring repeat victimisation requires a count of the number of crimes per victims (*concentration*), and yet the Crime and Disorder Audits that precede and support Crime and Disorder Strategies do not contain this supporting analysis of crime concentration.

This paper aims to demonstrate the importance of both crime prevalence and concentration to the understanding of crime levels through an analysis of data from 39 high crime areas. By examining the nature of crime distribution in parallel with the overall number of crimes in these areas, we aim to demonstrate how areas with similarly high crime levels can have remarkably dissimilar crime problems. The paper will also demonstrate how crime change (both increases and reductions) can be brought about either by changes in prevalence, changes in concentration or a combination of both. The paper is divided into three parts. The first section examines the distribution of prevalence and concentration in 2002. The second section looks at

how changes in the distribution of crime affected the overall incidence of crime in 2004. The final section considers how analysis of prevalence and concentration can help to select the most appropriate crime reduction strategy.

DATA AND METHODOLOGY

This report analyses responses from a household survey conducted in New Deal for Communities (NDC) areas by MORI in 2002 and then repeated in 2004 (MORI, Social Research Institute, 2006). The Neighbourhood Renewal Unit's NDC programme aims to tackle problems including housing, education, employment, health and crime. Regeneration is to take place over 10 years. While this report has used self-reported victimisation, the approach taken is as important when considering police recorded crime data (as demonstrated by Sunder & Birks, 2004).

Survey measurements of victimisation have some advantages over police recorded data. Only a small proportion of crime comes to police attention and methods of recording can render the process of matching multiple crimes to victims impossible. However surveys are not without limitation. Surveys are reliant upon respondent recall. Crime is a memorable event but the timing of an event may be more difficult to remember. Consequently respondents may include in their recall events that took place before the period about which they are asked. Where events occur frequently it may prove difficult to recall their exact number and in this survey several respondents answered 'too many to remember'. This introduces a degree of imprecision to calculations of crime levels, as it is not possible to quantify this response.

The survey asked respondents about their experiences of 10 types of crime. These were: domestic burglary, other household thefts, theft from the person, vandalism,

assault, threats, racial assault, theft of motor vehicles, theft from motor vehicles and vandalism of motor vehicles.¹ Residents may have experienced other types of crime, however the analysis in this report is restricted to those crime types included in the survey. Crimes such as theft from the person, assault and vehicle crimes can be committed against individuals visiting or working in an area. Area based household surveys exclude these groups and only provide estimates of crimes committed against residents. Crimes against business are also excluded.

Research into crimes as diverse as domestic burglary (Pease, 1998), domestic violence (Hammer, Griffiths, & Jerwood, 1998), crime on industrial estates (Johnston, Leitner, Shapland, & Wiles, 1994) and racial attacks (Sampson & Phillips, 1994) have found that large proportions of crime are the consequence of high levels of concentration. Pease identified crime concentration as the primary reason why high crime areas suffer much crime. The central focus of the current paper is to demonstrate that the relationship between prevalence and concentration varies across crime types, across areas and over time. These relationships are explored in order to highlight the importance of these crime counts as essential intelligence for effective policy and practice.

PREVALENCE, CONCENTRATION AND INCIDENCE

The overall level or incidence of crime is a product of the prevalence and concentration of crime. Crime prevalence refers to the proportion of people in an area (or targets, eg households, properties or cars) who are victimised and is used to identify the risk of being a victim. It is calculated by dividing the number of victims (or targets) by the number of potential victims. The number of potential victims commonly

equates to an area's population. However in many cases potential targets are more narrowly defined. For example the potential victims of vehicle crime should be restricted to the number of individuals who own or have access to a vehicle. Crime concentration describes the number of crimes per victim and is calculated by dividing the number of crimes by the number of victims. It is not a perfect measure as it assumes that the crimes are equally distributed across crime victims.

All of the 39 NDC areas have high levels of crime (crime incidence) when compared with national and regional figures (Christmann, Rogerson, & Walter, 2003). For each of the crime types in the survey the number of victims, the number of crimes per victim and the overall incidence was higher than national averages in the British Crime Survey. In other words the risk of NDC residents becoming a victim is considerably greater than nationally, further a higher proportion of NDC victims are repeatedly victimised.

Collectively the 19,574 respondents to the 2002 NDC Household Survey reported experiencing 36,308 incidents of the crimes asked about in the survey; this produces an incidence rate of approximately 1.8 crimes per respondent. The NDC partnerships with the highest number of self-reported crimes in the 2002 NDC survey were Oldham, Nottingham and Bristol. On average respondents in these areas experienced two crimes per person (excluding vehicle crimes). The NDC with the lowest number of self-reported crimes in the 2002 survey was Tower Hamlets where respondents experienced 0.7 crimes per person on average.²

The disadvantage of the crime incidence statistic as reported above is that it assumes that everyone in a given population has the same risk of becoming a victim and that everyone experiences the same amount of crime. This is not the case; crime is

unevenly distributed across areas and across individuals. Crime prevalence and crime concentration help to understand this distribution. Consequently it is important to know whether an area has a high rate of crime because of high prevalence, high incidence or both. NDC crimes were not equally shared between all respondents. Approximately 40 per cent of respondents (8,154) had experienced at least one of the crimes included in the NDC household survey during the previous 12 months.³ This can be expressed as a 40 per cent risk of victimisation or a *prevalence* count of 0.40. The 8,154 victims in the 2002 NDC survey suffered a total of 36,308 crimes. This can be expressed as a *concentration* of 4.5 crimes per victim.

The likelihood that the NDCs with the highest prevalence will also have the highest levels of concentration is moderate, but not strong.⁴ It is therefore important to know whether an area has a high rate of burglary because of high prevalence, high incidence or both.

Prevalence and concentration, variations by crime type

Across the NDC programme rates of prevalence and concentration varied by crime type. In 2000 the risk of being victimised was highest for vandalism (14 per cent) and other household theft (12 per cent) and lowest for racial abuse (4 per cent). The least concentrated crime was theft from the person, (19 per cent of victims victimised more than once) and the crime with the highest concentration was racial abuse (60 per cent of victims victimised more than once).

The relationship between prevalence and concentration within high crime areas was explored for each crime type included in the survey. Correlation coefficients were produced to compare the contribution of prevalence and concentration to the incidence of each crime type. These are presented in Table 1. The table shows that in

Table 1: Correlation co-efficients, incidence by prevalence and incidence by concentration, NDC areas 2002

<i>Crime</i>	<i>Correlations between incidence and</i>	
	<i>Prevalence</i>	<i>Concentration</i>
Assault	0.360	0.725
Burglary	0.918	0.536
Other household theft	0.930	0.470
Racial abuse	0.707	0.714
Thefts from the person	0.947	0.576
Threats	0.694	0.830
Vandalism	0.850	0.738

Notes:

Pearson correlation, all significant at $p < 0.005$.

Source MOR1 2006.

these high crime areas high incidence is a result of a mix of both high prevalence and high concentration. However some crime types are more closely related to one dimension than the other. The table shows that concentration is particularly important in explaining the high incidence of assaults and threats while prevalence is particularly important in explaining the high incidence of crimes such as other household theft, burglary and theft from the person.

As stated above, the central message of this paper is the necessity of including both crime prevalence and crime concentration in any analysis that informs crime prevention strategy. It has so far been demonstrated that the degree to which different crime types are distributed across areas and victims can vary, however the importance of knowing about the degree of prevalence and concentration becomes more important when it is understood that these patterns will change in different localities. The following section explores the variation of

prevalence and concentration across individual partnership areas.

Prevalence and concentration, NDC level variations

Figures 1 to 3 illustrate the relationship between prevalence, concentration and incidence for different crimes included in the NDC household survey. For each crime type the relationship between prevalence and concentration for each of the 39 NDCs has been plotted with the number of victims (prevalence) plotted on the horizontal axis and the number of crimes per victim (concentration) plotted on the vertical axis. The NDCs were ranked by the level of incidence for each crime type and the cases on each scatter plot are labelled on the basis of these ranks (1 representing the highest and 39 the lowest). This helps to display the different distribution of crime in areas with different overall levels of crime.

The incidence of burglary in 2002 varied from Southampton where respondents reported a total of 16 incidents (incidence rate of 0.03 crimes per respondent) to Nottingham where respondents reported 102 incidents (incidence rate of 0.20). Figure 1 presents the contributions of prevalence and concentration to the overall incidence of burglary in the NDC areas. The scatter plot illustrates that, across the NDC programme, areas with similar overall incidence of burglary presented markedly different profiles of concentration and prevalence. For example, Nottingham had a high level of prevalence and a low level of concentration compared to other NDCs. Therefore the burglary problem in Nottingham NDC is attributable to a large number of victims more than to a high level of repeat victimisation. In contrast Hackney and Luton were both in the top 10 for burglary incidence but in contrast to Nottingham they had lower levels of prevalence. In these areas it is the higher degree of concentration that produced the high incidence of crime more

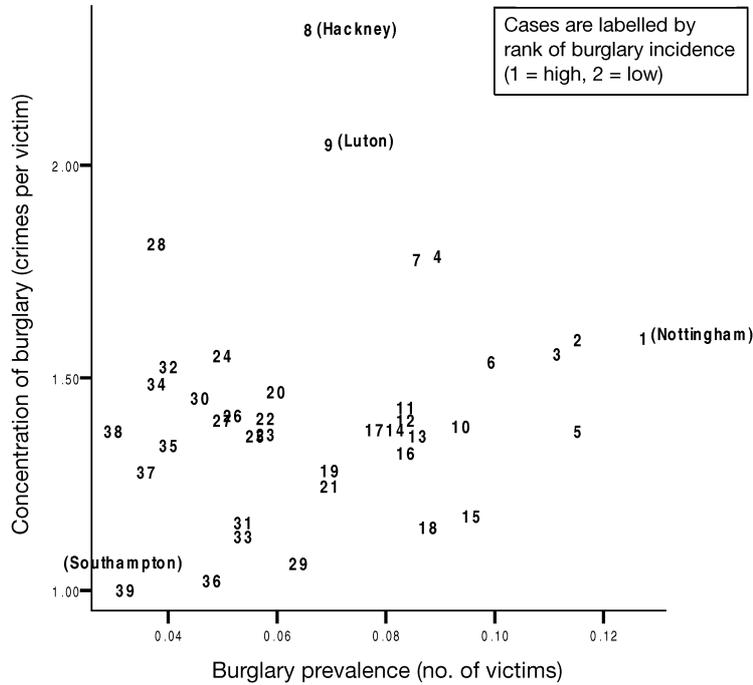


Figure 1
Incidence of burglary by concentration and prevalence, NDC areas 2002 (source MORI 2006)

than a large number of victims. An analysis that only includes the number of victims would be in danger of underestimating the extent of burglary in Hackney and Luton NDCs. Further, any crime prevention strategies in Hackney or Luton that ignored the high level of concentration would have limited success.

Figure 2 presents the distribution of prevalence and concentration for theft from the person. The incidence of theft from the person was highest in Hackney NDC (0.23) and lowest in Hull (0.01). Earlier it was demonstrated that high incidence of theft from the person was more closely linked to prevalence than concentration. It is clear from Figure 2 that the NDCs with the highest incidence also have the highest prevalence. In contrast Leicester NDC ranked 31st for incidence of theft from the person, but had the third highest level of concentration. Assessing incidence alone the problem of theft from the person in

Leicester may not seem important, however this would ignore the fact that those victims of theft from the person are at a high risk of repeat victimisation. Paying attention to levels of concentration would help to develop a strategy to address these victims' experiences.

Figure 3 presents the same relationships for assault. In Table 1 we found that concentration was more closely correlated with incidence of assault than prevalence. The distribution in Figure 3 reinforces this finding, with the majority of NDCs in the highest incident group displaying high concentration relative to other NDCs. Middlesbrough and Wolverhampton had the highest levels of assault with 0.23 and 0.22 crimes per respondent respectively. The number of victims (prevalence) in these areas was modest relative to other NDCs and the high levels of assault can be attributed to these areas having the highest levels of concentration with around five

Figure 2
Incidence of theft from the person by concentration and prevalence, NDC areas 2002 (source MORI 2006)

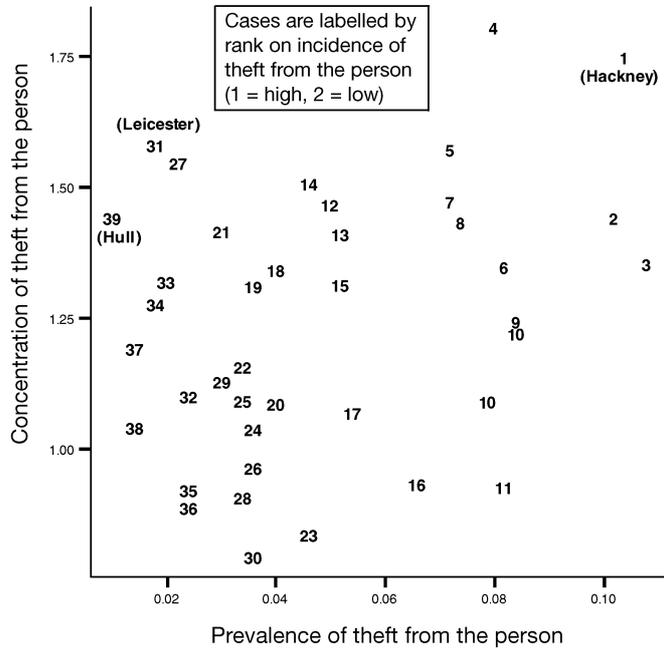
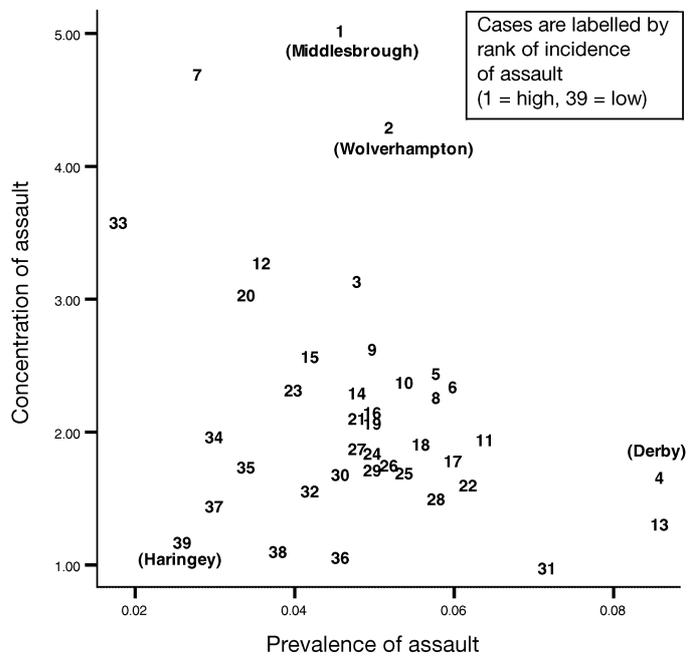


Figure 3
Incidence of assault by concentration and prevalence, NDC areas 2002 (source MORI 2006)



crimes per victim. Derby had the fourth highest incidence of assault (0.14) but was high for different reasons. The concentration of assaults in Derby was relatively low, consequently the high incidence rate here resulted from one of the highest numbers of victims. The contrasting profiles of assault in Wolverhampton, Middlesbrough and Derby reinforce the importance of discovering the relationship between prevalence and concentration for any given crime problem before drawing up crime reduction strategies. Looking at incidence alone Middlesbrough, Wolverhampton and Derby all appear to have a similar problem with assaults. It would be tempting for practitioners in Derby to copy any successful intervention adopted in Wolverhampton, but given the very different distributions of assaults an effective intervention in one area would be unlikely to be transferable to another.

Figures 1 to 3 have shown that areas with similar crime rates can have markedly different profiles of prevalence and concentration. Patterns can be identified for different crime types, with crimes such as theft from the person and burglary more closely linked to prevalence and assaults closely linked to concentration. However these patterns will vary across different geographical areas. This necessitates the inspection of crime distributions for individual areas before shaping crime prevention plans.

CHANGES TO CRIME LEVELS AND CRIME DISTRIBUTION ACROSS THE NDC PROGRAMME

Responses from the household survey suggest there were substantial reductions in crime across the NDC programme areas between 2002 and 2004. For all crime types there was a reduction in incidence. Reductions were greatest for theft of and from vehicles and lowest for racial abuse. There were reductions in prevalence for all crime

Table 2: Correlations between changes in incidence, prevalence and concentration 2002–2004

<i>Crime</i>	<i>Correlations between incidence and</i>	
	<i>Prevalence</i>	<i>Concentration</i>
Assault	0.540	0.790
Burglary	0.389	0.821
Other household theft	0.753	0.656
Racial abuse	0.429	0.753
Theft from person	0.396	0.762
Vandalism	0.526	0.880

Note: Source MORI 2006.

types and reductions in the degree of concentration for most. The exceptions to this rule were thefts from the person, threats and racial abuse, for these crime types the degree of concentration increased, serving to limit the reductions in overall incidence. For more on programme wide changes in crime see Christmann and Rogerson (2004) and CRESR (2005).

For most crime types, changes to crime concentration had a greater influence on crime change than changes to the number of victims: see Table 2. The exception to this pattern was the incidence of other household theft, in this case change in prevalence was slightly more influential than change in concentration.

Incidence, prevalence and concentration, changes at NDC level

Crime reductions were not consistent across NDCs. The majority of NDCs mirrored programme level reductions but a minority experienced substantial increases in some types of crime. An appreciation of the relationship between concentration and prevalence is central to an understanding of why crime reduced in some areas but not others. Examples of crime change for other

theft and racial abuse will be used to illustrate this point. The small numbers of crimes reported in each area mean that the analysis is not statistically reliable. The purpose of this section is merely illustrative; to demonstrate the different ways in which changes in crime prevalence and crime concentration combine to influence the overall incidence of crime.

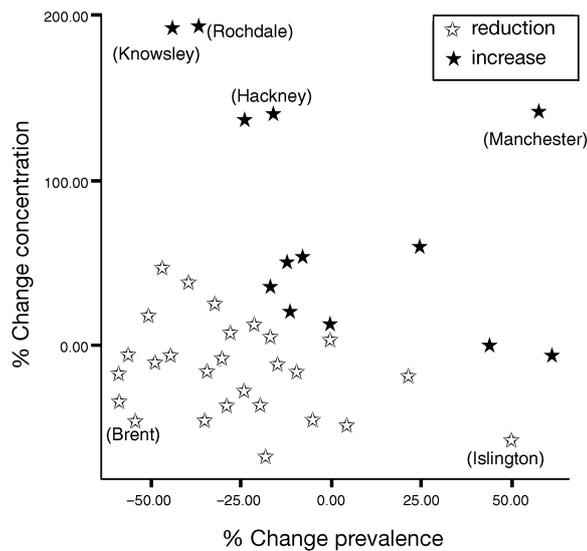
This section will illustrate that sometimes an increase in the number of victims can still coincide with a reduction in crime. Equally, reductions in the number of victims do not always mean that crime has reduced. Figures 4 and 5 chart the relationship between changes between 2002 and 2004 crime incidence, prevalence and concentration of assaults and other theft. Changes in prevalence are plotted on the horizontal axis with changes in concentration on the vertical axis. Symbols for each NDC indicate whether overall crime incidence reduced or increased.

The reduction in the incidence of assaults across the NDC programme between 2002 and 2004 was 14 per cent.

Between NDCs this varied from an increase of 275 per cent in Manchester to a reduction of 76 per cent in Brent. Figure 4 shows that the increase in Manchester was attributable to both an increase in prevalence and concentration (with 50 per cent more victims of assault and an additional 1.5 crimes per victim). In NDCs including Hackney, Rochdale and Knowsley reductions in the number of assault victims (of around 25 per cent) were still accompanied by an overall increase in crime because the number of crimes per victim increased by 100 per cent. This confirms the point made above that reductions in the number of victims does not necessarily lead to less crime if each remaining victims suffers more crime.

In those areas with the greatest reductions in assault (Brent, Middlesbrough and Tower Hamlets), the change was the product of decreases in both prevalence and concentration. However in Islington the number of victims increased, but due to a reduction in the number of crimes per victim the overall incidence of assaults still fell by 40 per cent. Thus the reduction of

Figure 4
Change incidence of assault by change in prevalence and concentration (source MORI 2006)



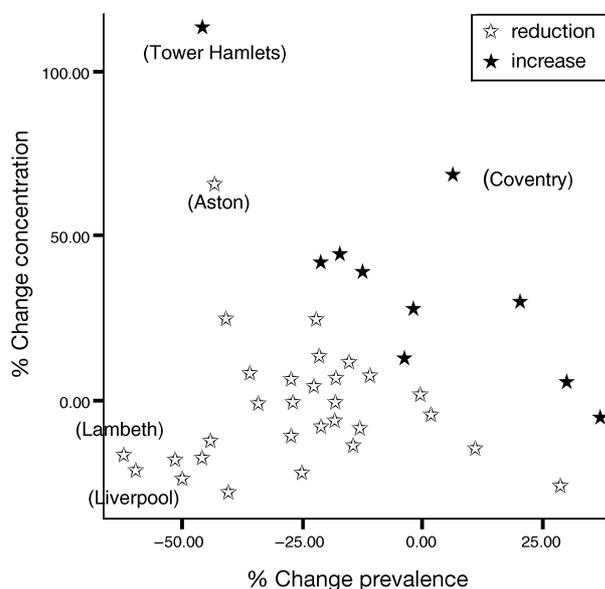


Figure 5
Change incidence of other theft by change in prevalence and concentration (source MORI 2006)

assaults in Islington was the result of crimes being distributed across a greater number of victims.

The number of other household theft offences reported in the 2004 survey represented a 20 per cent reduction compared with 2002. This was the only crime type where change in incidence was more closely correlated to prevalence than concentration. The largest reductions in other household theft were in Lambeth and Liverpool (69 per cent). Figure 5 shows that that these reductions were the result of reductions to both prevalence and concentration. Coventry experienced the greatest increase in this crime (77 per cent) as a result of one of the highest increases in both prevalence and concentration. In Tower Hamlets the reduction in prevalence was coupled with the highest increase in concentration producing the eighth highest increase in other household theft. This again demonstrates that reductions in prevalence will have limited impact if the remaining victims suffer more crimes.

DIRECTING FUTURE CRIME PREVENTION STRATEGIES

The following section aims to demonstrate how crime prevention outcomes vary depending on the degree to which effort is directed towards tackling the spread or the concentration of victimisation. The examples below present hypothetical reductions that would be achieved should NDCs reduce the level of prevalence and concentration to the minimum levels found in the NDC programme in 2004. The examples reveal that the outcomes achieved by focusing either on prevalence or concentration can at times vary considerably dependent on the existing profile of specific crime types in defined areas. Clearly the NDCs with the highest 2004 crime would achieve the greatest reductions by hitting a minimum target. The exercise is not about comparing different NDCs, the aim is to compare the potential impact of alternative approaches in the same area. In reality it is not possible to target prevalence and concentration exclusively and it is clearly possible for NDCs to reduce prevalence and

concentration of crime to levels below the programme minimum, but this exercise is illustrative and aims to show what is possible within realistic limits.

A further limitation to this analysis is the exclusion of the costs of targeting prevalence or concentration. Efforts to tackle concentration focus resources upon a limited number of individual victims or targets, whereas tackling prevalence requires the distribution of resources across an area to targets that may be harder to identify. Thus there are often cost benefits gained from targeting resources on repeat victims (but only if repeat victimisation is an identified problem).

Theft from the person

Table 3 summarises theft from the person crime counts for a selection of NDCs. The NDCs with the lowest prevalence (Southampton) and concentration (Hartlepool) of theft from the person were identified. Columns six and seven provide the hypothetical reduction that would be achieved if NDCs successfully reduced prevalence to

the NDC minimum while levels of concentration remained unchanged and vice versa. The final column provides the percentage point difference between the reductions achieved by these hypothetical approaches.

For theft from the person the majority of NDCs would achieve greater reductions in crime from tackling prevalence as opposed to tackling concentration, although reducing the concentration of crime to the minimum NDC level would also produce a sizable reduction of around 40 per cent in most cases. Rochdale and Brighton NDCs present a different pattern from the others in the table; here the returns possible from tackling concentration and prevalence are more balanced. The decision of whether to target the prevalence or concentration of theft from the person could make a difference as high as 45 percentage points in Islington (in favour of reducing prevalence) and 36 percentage points in Hackney (in favour of concentration), highlighting the need to make the right decision and capitalise on potential reductions.

Table 4 shows that the gains achieved from hypothetically reducing prevalence

Table 3: Projected reductions in incidence of theft from the person

NDC	Rank	2004 theft from the person			Potential % reduction with reductions to NDC minimum		% point difference between approaches
		Incidence	Prevalence	Concentration	Prevalence	Concentration	
Southampton (min prev)	39	0.01	0.008	0.72	–	11.1	
Hartlepool (min con)	38	0.01	0.016	0.64	50	–	
Islington	7	0.07	0.064	1.12	88	43	45
Bradford	25	0.03	0.028	1.04	71	38	33
Rochdale	20	0.03	0.022	1.61	64	60	4
Brent	2	0.14	0.066	1.98	88	68	21
Haringey	1	0.15	0.103	1.46	92	56	32
Hackney	3	0.12	0.075	1.53	98	58	36
Sandwell	24	0.03	0.04	0.73	80	12	68
Brighton	19	0.03	0.022	1.53	64	58	6

Table 4: Projected reductions in incidence of threats

<i>NDC/region</i>	<i>Rank</i>	<i>2004 threats</i>			<i>Potential % reduction with reductions to NDC minimum</i>		<i>% point difference between approaches</i>
		<i>Incidence</i>	<i>Prevalence</i>	<i>Concentration</i>	<i>Prevalence</i>	<i>Concentration</i>	
Tower Hamlets (min prev and con)	39	0.04	0.03	1.34	–	–	–
Islington	19	0.20	0.06	3.40	50	61	11
Bradford	18	0.28	0.08	3.45	62	51	11
Rochdale	5	0.62	0.09	6.91	67	81	14
Bristol	20	0.18	0.08	2.28	62	41	21
Knowsley	7	0.33	0.07	4.66	57	71	14
Hackney	1	0.77	0.07	11.00	57	88	31
Doncaster	5	0.47	0.10	4.66	70	71	1
Salford	10	0.28	0.80	3.45	62	61	1
Kings Norton	33	0.12	0.09	1.36	57	2	65
Plymouth	17	0.21	0.11	1.95	73	31	41

and concentration of threats to the 2002 minimum levels vary across the NDC areas. Tower Hamlets had both the lowest prevalence and concentration of this crime. Bringing concentration to these levels would provide greater returns than reducing prevalence in NDCs such as Hackney, Islington, Rochdale and Knowsley. The benefits of tackling prevalence are higher in Kings Norton, Plymouth and Bristol. In Doncaster and Salford the hypothetical benefits of reducing concentration and prevalence are even. The decision of whether to target the prevalence or concentration of threats could make a difference as high as 65 percentage points in Kings Norton (in favour of reducing prevalence) and 31 percentage points in Hackney (in favour of concentration), highlighting the need to make the right decision to capitalise on potential reductions.

This pattern was reflected across all crime types with analysis demonstrating that the most beneficial approach to crime prevention was dependent on a combination of crime type and area dictating that any proposals for action be informed by an

area level analysis considering all dimensions of crime.

CONCLUSION

This paper has argued that despite widespread awareness of the concepts of prevalence, concentration and incidence of crime, the benefits of understanding the relationship between prevalence and concentration are not realised or exploited in the development and evaluation of crime prevention strategies.

The process of identifying repeat victims, essential in the calculation of crime concentration, could be facilitated by improving the accuracy and detail of recorded crime data. This should include both technical innovation to crime recording databases and also staff training in the importance of accurate details. Chronic victims may be reluctant to report crimes to the police. It is important to encourage victims to report crime, either directly to the police or by providing alternative opportunities to report to other agencies.

An accurate picture of crime is essential to inform the selection of crime reduction

interventions. This accurate picture can only be achieved if the prevalence, concentration and incidence of crime are considered together. Crime analysis and audits of crime trends should include analysis of all these counts in addition to crime incidence. Currently this type of analysis is rare, with concentration tackled and analysed only as a discrete and separate problem.

Crime reduction interventions should be tailored to the degree to which high crime is the result of prevalence or concentration. High levels of concentration point to victim based targeting that focuses resources at the most vulnerable. In areas of high prevalence the focus should be wider with area based initiatives. However guidance on the selection of suitable interventions remains limited, with sources such as the Home Office crime reduction toolkits tending to list a range of 'evaluated options' rather than suggest options that are appropriate for particular crime contexts.⁵ The evidence is limited primarily because evaluations of crime prevention consistently neglect to discuss the impact of interventions on prevalence and concentration, preferring to focus upon incidence. This is usually a result of the limited budgets and time frames afforded to evaluation, with analysis of concentration branded as an expensive and time-consuming optional extra (the author herself has been involved in numerous evaluations where it has not been possible to include any analysis of concentration).

Finally, it should be noted that ignoring the influence of crime prevention on the distribution of crime leaves us blind to the thorny ethical issues that arise when crime is reduced but as a consequence either of spreading victimisation across a wider population or by concentrating it on a minority. Considerations of the fair distribution of the risk of victimisation (Wiles & Pease, 2001) can remain only academic

without knowledge of the current distribution of crime, and intelligence regarding the likely changes that intervention will bring.

NOTES

- (1) See Appendix 1 for the questionnaire wording.
- (2) It is not possible to compare directly the prevalence, concentration or incidence of 'total crime' in the MORI survey with the British Crime Survey as the two surveys include different crime types.
- (3) This total treats household crimes as personal crimes, therefore it is the number of respondents who have been a victim of crime or have been resident in a household that was a victim of crime.
- (4) The correlation between prevalence and concentration is (0.211).
- (5) <http://www.crimereduction.gov.uk/toolkits/index.htm>.

REFERENCES

- Christmann, K., & Rogerson, M. (2004). *Crime, Fear and Quality of Life* (NDC National Evaluation Research Report). Sheffield: CRESR.
- Christmann, K., Rogerson, M., & Walter, D. (2003). *Fear of Crime and Insecurity in New Deal for Communities* (NDC National Evaluation Research Report). Sheffield: CRESR.
- CRESR. (2005). *New Deal for Communities Evaluation 2001-2005 An Interim Evaluation*. London: Neighbourhood Renewal Unit.
- Deakin, E., & Chenery, S. (2002). *Analysis of Crime and Disorder Reduction Partnership Strategies* [Computer file]. London: Home Office.
- Farrell, G., & Buckley, A. (1999). Evaluation of a UK Police Domestic Violence Unit using Repeat Victimization as a Performance Indicator. *Howard Journal*, 38(1), 42-53.
- Hamner, J., Griffiths, S., & Jerwood, D. (1998). *Arresting Evidence: Domestic Violence*

- and Repeat Victimisation (Police Research Series, Paper 104). London: Home Office.
- Johnston, V., Leitner, M., Shapland, J., & Wiles, P. (1994). *Crime on Industrial Estates* (Police Research Group: Crime Prevention Unit Series, Paper 54). London: Home Office.
- MORI. Social Research Institute. (2006). *National Evaluation of the New Deal for Communities Programme: Household Survey Data 2002-2004* [Computer file]. Colchester: UK Data Archive.
- Pease, K. (1998). *Repeat Victimisation: Taking Stock* (Crime Detection and Prevention Series, Paper 90). London: Home Office.
- Sampson, A., & Phillips, C. (1994). *Multiple Victimisation: Racial Attacks on an East London Estate* (Police Research Group: Crime Prevention Unit Series, Paper 36). London: Home Office.
- Sunder, N., & Birks, D. (2004). Measuring Incidence, Prevalence and Concentration: Implications for Policing. *Crime Prevention and Community Safety: An International Journal*, 6(2), 51-59.
- Wiles, P., & Pease, K. (2001). Distributive justice and crime. In R. Matthews & J. Pitts (Eds.), *Crime, Disorder and Community Safety: A new agenda*. London: Routledge.

Appendix: MORI NDC Household survey 2002/2004 questionnaire wording

The relevant questionnaire items from the 2002/2004 MORI NDC Household Survey are detailed below. The wording of these questions was consistent between the two sweeps of the survey. The surveys included two questions for each type of crime, the first asking whether the respondent had experienced that crime in the last twelve months,

QCR4: The next questions concern things that may have happened in the last year, in which you may have been the victim of a crime or offence. I don't just want to know about serious incidents —

I want to know about small things too. In the last 12 months . . .

The second asks how many times each type of crime has been committed.

QCR5: In the last 12 months how many times . . .

The survey included seven non-vehicle crimes, the titles in brackets correspond to the category titles used in this paper.

- A: (*domestic burglary*) has anyone got into your home without permission and stolen or tried to steal anything?
- B: (*other household theft*) was anything that belonged to someone in your household stolen from OUTSIDE your home — from the doorstep, the garden or the garage for example? (NOTE: DO NOT COUNT MILK BOTTLE THEFT)
- C: (*theft from the person*) was anything you were carrying stolen — out of your hands or from your pockets or from a bag or case?
- D: (*assault*) has anyone, including people you know well, deliberately hit you with their fists or with a weapon of any sort or kicked you or used force or violence in any other way?
- E: (*vandalism*) did anyone deliberately deface or do damage to your home or to anything OUTSIDE it that belonged to someone in your household?
- F: (*threats*) has anyone threatened to damage things of yours or threatened to use force or violence on you in any way that actually frightened you?
- G: (*racial abuse*) has anyone racially harassed or racially abused you?