



No. 119

# The Spatial Clustering of Child Maltreatment: Are Micro-social Environments Involved?

Tony Vinson & Eileen Baldry

*Understanding crime and place is an important research activity of the Australian Institute of Criminology. Crime is often clustered and child maltreatment, itself a crime, is also a significant risk factor for future offending. In the locality studied by the authors of this paper, rates of child maltreatment varied from 53.0 per 1000 in one neighbourhood to 8.1 per 1000 in another, even though both neighbourhoods had similar levels of social disadvantage and comprised a similar mix of both private and public housing.*

*Children are very vulnerable to maltreatment, and understanding the social environment within which that maltreatment occurs is one step towards developing preventive measures. This paper shows that instances of maltreatment are clustered by variables such as neighbourhood cohesion, the levels of trust and distrust within neighbourhoods and the value people place on local friendships. This study found that professionals could often identify areas of risk, and outlines their proposals for relevant community-building strategies that could limit child maltreatment.*

*Work of this type will be followed up by the Institute's Crime Analysis and Modelling Program.*

**Adam Graycar**  
Director

**H**abits of mind can influence not only our reasoning processes but also the way in which relevant observations are framed. In social research the units of observation routinely employed to approximate a concept like *neighbourhood* can go unchallenged until brought into question by a discrepant finding. So well established is the link between socio-economic conditions within census tracts and child maltreatment rates that variations in the latter would, on the basis of much research, be expected to be accompanied by differences in the former. The point of departure for the present study is an instance in which the aforementioned association was, at best, only marginally upheld (Vinson et al. 1996), bringing into question the long established operational definition of *neighbourhood* in terms of standard census units. It was only when confirmed instances of child abuse within a Western Sydney suburb were spatially plotted, and the pronounced clustering of such cases revealed (see Figure 1), that the possibility dawned that the limited neighbourhood effects apparent to that point had a great deal to do with the way the relevant geographic boundaries had been drawn.

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## Initial Study

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The New South Wales Department of Community Services nominated a suburb of some 10 000 people and 3500 households in Western Sydney as a locality with a relatively high rate of confirmed child abuse (22.5 per 1000 children under 16) over a 3-year period. A southern census unit

AUSTRALIAN INSTITUTE  
OF CRIMINOLOGY

*trends*  
&  
*issues*

in crime and criminal justice

June 1999

ISSN 0817-8542

ISBN 0 642 24112 0



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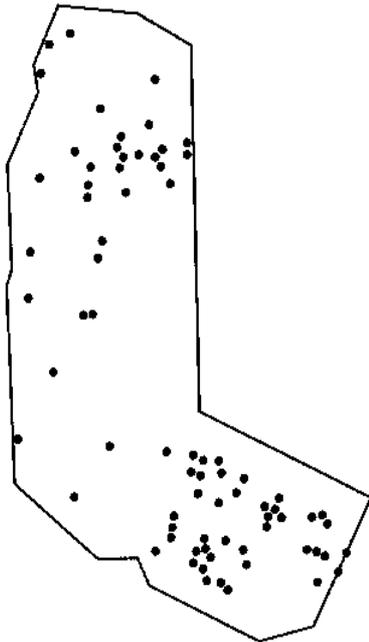
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**Figure 1: Spatial Clustering of Child Abuse Cases for a Suburb in Western Sydney**

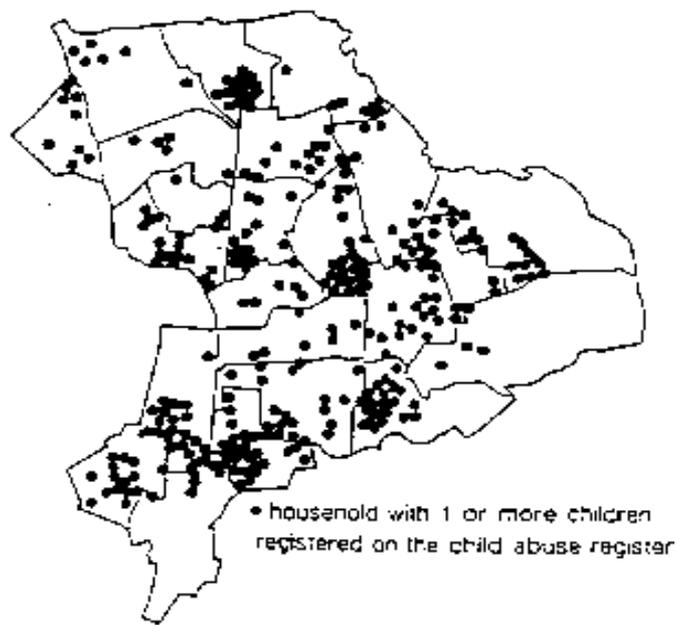


had a relatively high rate of 53.0 per 1000 children, when compared with the relatively low rate of 8.1 per 1000 in a northern unit. The units were of virtually identical population size (approximately 880) and age distribution and had roughly equivalent scores on an Australia-wide “Social Disadvantage” Index. The study compared survey responses of 51 “carers” in the southern (high risk) neighbourhood and 46 in the northern neighbourhood.

Vinson et al. (1996) presented the study findings in detail. The outstanding difference between the two localities was the structure of the networks of the two samples of residents, notably the insularity of parents in the higher risk area. Without minimising the potential importance of this finding, there were remarkably few significant differences between the two areas over the other assessment items, including those which focused on such factors as social support and social cohesion, and the perceived supportiveness of the residential neighbourhood to parenting.

Confronted by the spatial patterning of abuse reflected in Figure 1, it was decided to re-analyse the existing data, this time comparing the survey responses of people resident within one of the cluster areas to those living elsewhere in the suburb.

**Figure 2: Geographic Distribution of Child Abuse Registrations, London, 1982 to September 1985**



### Spatial Patterning of Social Problems

#### *The spatial perspective*

Sherman et al. (1989) begin their exploration of the criminology of place with the observation that the analysis of variation across space is one of the basic tools of science. Gould et al. (1990) found that the clustering of teenage suicides in America occurs to a significantly greater extent than would be expected by chance variation. Cotterill (1988) studied the distribution of instances of child abuse within an inner-London borough. Households in which confirmed child abuse occurred in the period 1982–85 were mapped and the clustering of cases is shown in Figure 2.

Cotterill gives the example of a particular ward that had an overall rate of child abuse of 1.7 per 1000, similar to the average for the borough, but upon examination the ward was found to contain an obvious and persistent concentration of child abuse which was diluted out in the calculation for the ward as a whole. The distribution of cases across the borough was examined for target areas, defined arbitrarily as 5 or more households with a registered case of child abuse in close proximity. Sixteen target areas were identified, accounting for 73 per cent of cases registered over the study period.

#### *Distribution of crime*

Sherman et al. (1989), influenced by emerging evidence that spatial variation in crime is most apparent at the sub-neighbourhood level of street blocks and multiple dwellings, have attempted to develop a sociology of place on the basis that place can be defined as “a fixed physical environment that can be seen completely and simultaneously, or at least on its surface, by one’s naked eyes”. Sherman et al. used units of analysis in their study of Minneapolis that were certainly localised and they found that crimes reported to the police revealed substantial concentrations in a relatively few hot spots.

There is a growing realisation that crime and problems of law and order are, in very large measure, “local and pocketed”. According to Trickett et al. (1995), three things are known about the distribution of crime: (i) a small proportion of offenders commits a large proportion of crime; (ii) a small proportion of victims suffers a large proportion of crime committed; (iii) a small number of areas experience an unequal amount of crime events. Farrell and Pease (1993) have demonstrated that, in Britain during the 1980s, approximately 14 per cent of the population were the subject of burglary on two or more occasions in the preceding year, accounting for 71 per cent of all burglaries. Australian research has revealed a similar concentration of

crime to that listed in the British crime survey findings (QCJC 1997).

### *Unemployment*

The recent geographic turn in poverty and unemployment research has drawn inspiration from the work of an American researcher, W. J. Wilson. In *The Truly Disadvantaged: The Inner City, the Underclass and Public Policy* (1987) and other works, Wilson has traced the interconnections between different aspects of poverty and unemployment within a geographical context. A neighbourhood environment is created that isolates residents from the world of work and promotes a culture of dependency. People growing up in an area of concentrated joblessness are less likely to gain work because they are less likely to know other people who have jobs, a finding recently confirmed in inner Sydney (Vinson et al. 1997). The importance of Wilson's perspective has been further reinforced by Gregory and Hunter's 1995 study of the increasing geographic concentration of poverty in Australia.

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## Current Perspectives on Neighbourhood Effects

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### *The 'new' urban ecology*

Recent developments in urban ecology have fostered interest in sub-neighbourhood or "micro-ecological" levels of analysis. For example, the work of Bursik and Gasmick (1993) recognises that people live in nested levels of communities, the smallest level being based on the propinquity of residents and the common use of local facilities.

A common finding in urban studies is that residents make safety-related differentiations within their neighbourhood. The typical finding is that, as they move closer to home, residents experience fewer crime-related problems and feel more able to exercise informal social control (Taylor 1997). Taylor speaks of the "collective psycho-geography" of residents on a block, or a small cluster of residents in one part of the block. The precise cause of these patterns is not known, but non-attachment

may be fostered by, and in turn influence, local behaviour patterns, social dynamics, and beliefs and understandings about the local area (called by Taylor "cognitive mapping strategies").

### *Socially impoverished neighbourhoods*

What contributes to low morale neighbourhoods? A feature of recent research in this area has been the refinement of measurement and the use of more sophisticated methodology. However, it has been the classical studies of Garbarino and associates which have shown that, in order to understand the forces that impede healthy child development, we must go beyond family life and investigate high risk environments. For example, Garbarino and Sherman (1980) argued about 40 per cent of the variation across neighbourhoods is accounted for by socio-economic status. High risk neighbourhoods can also take another form, namely socially impoverished areas that have a higher rate of child maltreatment than would be predicted, knowing their socio-economic character. Mothers in the low risk area rated their neighbourhood as a better place to raise children than did mothers in the high risk area. Garbarino and Sherman cited work by Collins and Pancoast in which the concept "free from drain" was invoked to describe people who could afford to give and share because the balance of needs and resources markedly favoured that possibility. Low risk areas seem free from drain in many respects: people keep up their houses and their families; they can afford to become involved in neighbourly exchange without fear of exploitation. In high risk environments parents are inclined to seek an advantage by getting what they can from others while giving as little as they can get away with. "There is ambivalence about neighbourly exchanges and a recognition that, overall, the neighbourhood exerts a negative effect on families (as illustrated by the low rating given to the neighbourhood as a place to raise children)."

Coulton et al.'s 1996 study using factor analytic methods found that respondents in high risk areas were more likely to expect

retaliation when they intervened with children and to rate their neighbourhood quality as poor. Scores on scales measuring residential mobility, disorder and threat of victimisation were higher in high risk areas, and residents of these areas were less likely to have an identity for their neighbourhood.

### *Neighbourhood influences on child and adolescent development*

Just how does an "unsatisfactory" neighbourhood exert an influence on the lives of residents? Does that influence flow primarily from the co-location of a majority of poor people, as the classic child abuse studies would suggest, or is it the *absence of affluence* and the life orientations and opportunities associated with it, which is the crucial factor? Brooks-Gunn et al. (1993) have used two data sets to examine how both neighbourhood and family characteristics influence outcomes at two age points—early childhood and late adolescence. The first analysis sample consisted of 895 low birth weight pre-term infants born in 8 medical centres across the United States. The second analysis sample focused on more than 2000 women, observed between the ages of 14 and 19.

The studies used employed two broad domains of development—cognitive/school functioning and social/emotional functioning. In the pre-school period the cognitive tests used measured skills associated with school readiness that are also associated with subsequent school functioning. There was no evidence that increasing the ratio of moderate-income neighbours to those of low income was associated with better developmental outcomes in early childhood; **what was confirmed were significant associations between having more affluent neighbours and achieving better scores on all of the development outcomes.** The effects of affluent neighbourhoods on childhood IQ, teenage births and school leaving persisted even after adjustments to differences in the socio-economic characteristics of families.

Coulton et al. (1995) have used factor scores as independent variables in a model, with child maltreatment rate as the dependent variable. The model explained

approximately half the variance in the maltreatment rates among census tracts. The *impoverishment factor* (embracing the conditions of poverty, unemployment, female head of households and population loss) had the greatest effect on maltreatment rates. Another factor tagged the *child-care burden factor* had a significant but lesser effect than impoverishment. Involved here was a combination of many children per adult, few elderly residents and a low proportion of adult males: that is to say, a considerable risk of child maltreatment exists in areas with a limited number of adults available to supervise, care for and support children and to involve themselves in neighbourhood social institutions. Another factor tagged *instability* (areas with greater movement) also contributed in a relatively minor way to the rate of child maltreatment. Overall, the findings lend support to the earlier observations of Garbarino and colleagues. They indicate the importance of attempting to understand child maltreatment against a background of community level social organisation and accompanying social resources, social control and solidarity.

What are the processes through which impoverishment, instability, extreme child care burden and concentration of poverty produce the high rates of maltreatment? The work of Coulton et al. (1995) is suggestive of some. Residents of high maltreatment neighbourhoods report distrust among neighbours and observe that adults are reluctant to intervene when they see children engaging in dangerous or unruly behaviour. In turn, their fear of violence and the feeling that one's neighbours are "undesirable" further limit their neighbourhood interactions. Many residents who can afford to leave do, taking with them resources, skills and pro-social influences.

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### Method

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In the present study, an attempt has been made to identify clusters of child maltreatment cases at a level below standard census counting units. An operational definition

was required and this took the form of a scaled template encompassing 200 square metres of territory within the suburb under study. A "cluster" was said to occur when such a space contained at least three or more addresses at which confirmed cases of child maltreatment had occurred over a 3-year period. Thirty-nine carers who had been interviewed in 1995 and who lived within the boundaries of the cluster areas defined by the template procedure have, for the purposes of the present study, been categorised as *cluster area residents*, and their responses to a range of psycho-social items have been compared with the responses of the remaining 177 residents of the suburb included in the initial random sample.

The items available for the comparison of "cluster" and "non-cluster" residents included Buckner's (1988) 18-item scale for measuring neighbourhood cohesion, including the dimensions of *attraction to neighbourhood*, *neighbouring* and *psychological sense of community*. The scale enables single item comparisons as well as overall scores; a number of items concerning attraction to, ease of settlement within, and attitudes towards, the immediate neighbourhood; and items of the kind which several researchers since the early work of Garbarino and associates have found highly pertinent concerning the ease or otherwise of raising children within the immediate neighbourhood.

### Sample

Twenty-seven (69.2 per cent) of the sample of 39 carers living in cluster areas were women, compared with 143 (80.3 per cent) of the remaining 177 carers drawn from the rest of the suburb. The country of birth profiles, educational background, age and household income profiles of both groups were similar.

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### Results

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#### *Neighbourhood cohesion*

Whereas Buckner's (1988) neighbourhood cohesion scale failed to

discriminate between the high and low risk areas in our previous study, it was found that the cluster area residents were significantly more likely than other residents to entertain negative perceptions of their neighbourhood in several of the aspects covered by the scale. Cluster area residents were decidedly less likely to feel that they belong to their neighbourhood, and they are much more likely to express the wish, given the opportunity, to move out of it. This perception of non-attachment has been found in several studies to be especially salient in affecting people's sense of safety and comfort within local areas. In the present study, significantly higher proportions of cluster area residents said that: (i) given the chance, they would wish to leave (84.6 per cent versus 56.2 per cent); (ii) they did not value friendships and associations with other people in their neighbourhood (46.2 per cent versus 24.7 per cent); (iii) they did not feel they belonged to their neighbourhood (56.4 per cent versus 25.3 per cent). Approximately half of them denied attraction to their neighbourhood, and they were more likely than non-cluster residents to deny visiting neighbours in their homes and to deny feelings of loyalty to other people in the neighbourhood. In 16 of the 18 cohesion scale items, a higher proportion of "cluster" than "other" residents took a negative view of their community, and the overall differences between the two groups were statistically significant (Kruskal-Wallis test). The "cluster" residents (38.5 per cent) were 1.5 times as likely as other carers (24.1 per cent) to say, for a variety of reasons including the unfriendliness of neighbours, that their settlement within the neighbourhood had been "hard", and the difference between the groups bordered on statistical significance. Carers resident in cluster areas were almost twice as likely (41.0 per cent) as non-cluster area carers (21.9 per cent) to rate their locality as a "poor/very poor" location in which to raise children.

What factors lie behind the relatively harsh judgement of the cluster neighbourhoods? In characterising their areas as places within which to raise children there was

one theme which distinguished cluster and non-cluster carers: namely, allusions to the “dangerous/criminal” environment and/or “unacceptable” lifestyles of neighbours. These elements were referred to by 15/39 (38.5 per cent) of cluster area respondents compared with 43/177 (24.3 per cent) of the remainder. There was no difference in the percentage of both groups referring to unsupervised children, a perception that in overseas research has been found to be more characteristic of socially impoverished areas.

*Practitioner awareness of cluster areas*

To what extent are human service practitioners and local community activists aware of the cluster areas identified in the present study as areas of concentration of child abuse, and do they believe these localities have social characteristics which distinguish them from the remainder of the suburb in which they are located? An additional small study focusing on these questions was undertaken in late 1998 and early 1999. Structured interviews were held with 13 respondents, 11 of whom had regular professional or community organisational involvements in the suburb, the other sample members’ acquaintance with the area being based on less regular contact as part of a wider social work service to a region. Four staff members of a State child protection agency were interviewed, as were four members of a Health Centre based in the suburb in question, two social workers (mental health and family counselling), a neighbourhood development officer, and two members of the community prominent in local affairs.

In the interviews, respondents were asked whether child maltreatment is evenly distributed throughout the suburb or is it concentrated in some areas, the basis for the opinion expressed, and why the pattern is as it is?; if there is variation in the distribution of child maltreatment—all respondents said that is the case—then do the sub-populations concerned have distinguishing characteristics?; do the social environments differ from the remainder of the suburb?; how difficult or easy is it to bring up children in the identified areas?

Figure 3 represents the four boundaries workers placed around their perceptions of concentrations of child abuse. Overall, there was a high degree of concordance between the areas within the suburb that our respondents thought to be problematic and the clusters identified on the basis of confirmed notifications. Not surprisingly, the overlap was particularly striking in the case of the four child protection agency personnel but was hardly less so with the other groups, including the two residents who played leadership roles in local affairs.

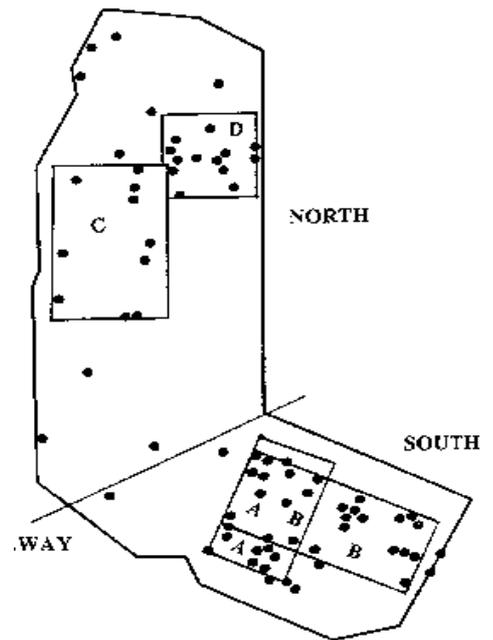
*Explanations for pattern*

Nine of the 13 respondents associated the main concentrations of child maltreatment they identified with the distribution of public housing in the suburb. In part, this observation reflected a perception about the difficulties experienced by public housing tenants before they were allocated housing in the suburb. These tenants were considered to be “families under pressure”. Several of the respondents attempted to explain the consequences of that “pressure”, indicating that, in addition to the common background of low socio-economic status, particularly on the Housing Estate, there are dependencies of various kinds, including drink and drugs, and a level of domestic and all forms of violence which has adverse consequences for children. With the possible exception of one of the community leaders, the respondents all said that it would be difficult to raise children in the areas they had identified.

*Distinguishing features*

The varying interpretations placed by the respondents on their experiences seem to constitute two “truths” about the high risk areas. The two perspectives involved—essentially that they are areas characterised by violence, clannishness, addiction, unsociability and child neglect, as distinct from cooperativeness, “normalcy” and an interest in improving community life—seem to be linked with the main focus of workers’ professional or community roles. Where those roles emphasise therapeutic or social control work with indi-

**Figure 3: Community Workers’ Perceptions of Child Abuse “Cluster Areas”**



viduals and families, the impressions of the localities are of the “darker” variety. Where community-building is the main focus, it is the other more optimistic “truth” which is emphasised, namely, the people resources and potential of the area. Examples of what they have in mind include local participation in a community clean-up campaign, the development of a children’s transport safety project, neighbourhood celebrations and socialising, and cultural exchanges.

**Comment**

The account of a single site presented in the research report demonstrates the potential utility of efforts to prevent child maltreatment, and of examining patterns of confirmed abuse *within* suburbs and *across* the census counting units which have long held sway in ecological studies of child maltreatment. The present findings indicate three things:

- (i) the spatial clustering of officially notified and confirmed instances of abuse;
- (ii) an association between living within those cluster areas and a lack of attachment to one’s neighbourhood, local friendships, and the people residing there, together with the judgement that it is a poor place in which to bring up

children, partly because of the “dangerous” environment and “unacceptable” lifestyles of residents;

- (iii) the ability of a small sample of community workers and local leaders to identify accurately the cluster areas and give an account of the social environment which, in many respects, echoed the account given by the residents who were interviewed in an earlier survey.

Our research found that the distribution of public housing was one factor in the concentration of child maltreatment and that spreading public housing more broadly could improve the social environment. On the other hand, the neighbourhood development officer felt that the higher density of housing facilitated bonds between residents, particularly amongst those who had been there longest.

Of particular interest is the finding that community workers and local leaders, whose primary role is community building, recognise neighbourhood shortcomings but also characterise “at risk” areas in terms of strengths and potential strengths. If the pattern of spatial distribution of child maltreatment uncovered by the present study were to be repeated in other Australian suburbs, that insight would invite more refined prevention strategies than has been the practice to date. Directing scarce resources at larger aggregations of families (Local Government Areas, whole suburbs or census counting units) would appear less efficient than working within, say, a small number of street blocks in which there is known to be a concentration of cases of child maltreatment. Child protection authorities would have to be willing to make available, on conditions that protected the anonymity of individual cases, the data needed for this simple mapping exercise.

One of the major revelations of the present research is the fact that experienced practitioners, with a knowledge of the suburb in question, can draw the outlines of cluster areas with a degree of precision that makes their estimates a workable proxy for the official data. The practitioners were aware

of the experience of the families prior to moving into the area. Frequently the parents lacked family support networks, had a history of abuse and violence, and consequently were deficient in parenting skills. They also tended to have fewer literacy skills and face financial and employment problems. While a small proportion of parents had allowed their lives to deteriorate to the point where they had stopped caring for their children, most did care. However, many residents in the community lacked the skill to deal with conflict without resorting to aggression.

The provision of more pre-school centres, child care and parent support and specialist teachers is necessary to help children who are displaying learning difficulties and serious behavioural problems. Recreational opportunities must also be created. Cheaper public transport would enable parents to take children to recreational facilities and places of interest. Existing local leaders, and potential leaders with roots in the local area and an authentic desire to work with others to improve conditions, need to be identified and supported, as do the existing and fledgling local organisations. The children’s transport safety group and other local campaigns testify to the capacity of locals to work together on shared problems.

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