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Understanding neighbourhoods, communities and environments: new approaches for social work research

Sally Holland^a, Stephen Burgess^b, Andy Grogan-Kaylor^c, and Jorge Delva^d

^a Senior lecturer in social work in the School of Social Sciences at Cardiff University

^b Research associate based within the Welsh Institute of Social and Economic Data and Methods (WISERD)

^c Associate Professor, School of Social Work, University of Michigan

^d Professor and Associate Dean for Research at the School of Social Work, University of Michigan

Abstract

This article discusses some new ways in which social work research can explore the interaction between neighbourhoods and child and adult wellbeing. The authors note that social work practices are often criticised for taking an individualistic approach and paying too little attention to the service user's environment. The article uses examples of research projects from Chile, the United States of America and Wales, to discuss the use of spatially oriented research methods for understanding neighbourhood factors. Quantitative, qualitative and mixed methods approaches that are particularly appropriate for investigating social work relevant topics are discussed in turn, including quantitative and qualitative uses for geographical information systems (GIS), hierarchical linear modelling (HLM) for analysing spatially clustered data and qualitative mobile interviews. The article continues with a discussion of the strengths and limitations of using spatially orientated research designs in social work research settings and concludes optimistically with suggestions for future directions in this area.

Introduction: thinking community

Many commentators have proposed that social work practice in western nations has become increasingly individual and family oriented, rather abandoning social work roots in settlements and community work in favour of individual assessments and packages of interventions (Butler and Drakeford, 2001, Hugman, 2009, Jack and Owen, 2009). Although assessment practices in the UK (e.g. DCSF, 2006) demand that we pay attention to community and environmental factors on a child or adult service user's everyday life, there is little expectation that social work in its current form may *act* at a community level. Nonetheless, alongside this individualistic approach in statutory social work, social policy in the US and the UK concerning children's wellbeing has to some extent taken a neighbourhood 'turn'. Across the UK, from Sure Start to local authority based children and youth partnerships, local policy makers are encouraged to take an area based analysis of children's welfare needs and plan accordingly. In the US, third sector and government initiatives are working in many communities to bolster social capital in low-income neighbourhoods in an attempt to improve child outcomes (Delva, Momper, & Allen-Meares, 2010). There are fewer area-based interventions that focus on adult service users' needs such

as mental health and disability, although the Welsh Assembly Government's *National Service Framework for Older People* calls for more preventative, community level intervention (2006a: 54).

The spatial-turn across the social sciences has led to an engagement with space as process, rather than an absolute category (Crang & Thrift, 2000). Places are dynamic, contested and complex social phenomena created by the particular interaction of flows and processes such as social relationships, economics and politics operating at varying levels from the 'local' to the 'global' (Massey, 1991). One part of the recent geographic tradition (Peet, 1998), understanding changing social processes over time (Crang and Thrift, 2000) is crucial to understanding the spatial patterning of human behaviour. Within this theoretical context, child and adult wellbeing is likely to be dependent on a complex interaction between individual, family, neighbourhood and wider community factors. Social workers have a long-established tradition of mapping these factors (e.g. Queralt and Witte, 1998). Some of this work has included techniques such as genograms and ecomaps (Hillier, 2007). Research methods in social work need to develop ways of exploring the impact and interaction of these factors in order to develop a more comprehensive evidence base for social work practice and policy. This article explores how we can come to understand the interaction between neighbourhoods and residents' everyday lives using spatial methods less commonly used in social work research.

Wellbeing in neighbourhoods: common themes

This section provides a brief summary of research designs in relation to neighbourhoods and the wellbeing of the children and adults who reside there. The section is necessarily selective from a large field of literature and is intended to give an indication of key issues rather than a systematic overview.

A neighbourhood may be defined by physical boundaries such as waterways or large highways, by administrative boundaries, such as Census areas or the coverage area of a social service agency, or by social relationships. Definitions of neighbourhoods are held by residents that often differ from administrative boundaries and will often be mediated by factors such as age, gender and mobility. However, while research studies often use different definitions of neighbourhood, research reviews suggest that in quantitative studies, the area unit of analysis adopted has not always affected the results (Freisthler *et al.*, 2006).

Research on neighbourhoods includes interest in structural issues (such as income, demography, housing) and social issues (such as social networks and relationships, a sense of collective efficacy, daily patterns of activity, norms and behaviours). Data on some structural issues, such as unemployment or poverty rates, tend to be readily available and hence there is a fairly well developed understanding of the impact of structural issues in some areas such as educational outcomes. Social issues, and their interaction with structure, may require data to be generated through observation, surveys, interviews and other means, but some data are already available (Mowbray *et al.* 2007, ONS, 2009). Data that can be linked to a precise geographic location such as an address, a street intersection or a set of latitude and longitude coordinates are said to be "spatially referenced."

Research in neighbourhoods often seeks to explore residents' perceptions and experiences or to measure the effect of a neighbourhood on outcomes for child and adult residents (Leventhal and Brooks-Gunn, 2000; Sampson *et al.*, 2002). Qualitative studies of residents' views are a common method in designs seeking to explore the impact of neighbourhood on families and children's lives. Residents may be interviewed about their experiences of living in a particular type of neighbourhood (rural, poor, suburban, etc.), in focus groups or their family homes (Valentine, 2007). Methods often used in the field of children's geographies

lend themselves well to spatially-oriented analyses. These include map-making, walking tours and visual methods (Elsley, 2004). Ethnographic observation may also be used alone or in tandem with other qualitative methods (Boyce, 2006). Resident perceptions of neighbourhoods are also gained through survey techniques. These may be carried out as part of general household and other population studies (e.g. Corbett *et al.*, 2007). Seaman *et al.* (2006) and Barnes (2007) conducted surveys and follow-up qualitative interviews in Scottish and English neighbourhoods respectively investigating everyday experiences of parenting in different types of neighbourhoods. As is illustrated in case example three below, such research could be used to plan appropriate social work interventions and services for families in an area, such as parenting classes, substance misuse prevention, youth provision and community work. Despite a fairly strong evidence base of perceptions and experiences of neighbourhood in the social sciences, some of the methods used, particularly those with a spatial orientation, are rarely used in social work research.

Studies of neighbourhood effects on wellbeing have been much more common in the US than in the UK and Europe (Atkinson and Kintrea, 2004). Neighbourhood effects suggest an impact of place on people's characteristics and behaviours beyond that expected from individual and family characteristics (Raudenbush and Bryk, 2002). Conceptually, it is often useful to think about neighbourhood effects that operate at different "levels." Commonly, neighbourhood researchers think of "Level 1" as encompassing each individual's perception of the characteristics of their neighbourhood, such as the level of crime, or the number of vacant houses. "Level 2" neighbourhood effects are those phenomena which are measures of an entire neighbourhood, such as the poverty rate or the average level of trust across a neighbourhood. Neighbourhood effects are often used to discuss negative effects rather than positive effects, although there is no reason why such research could not be conducted using a strengths perspective, identifying protective and enhancing factors in community resources and relationships (Mowbray *et al.*, 2007). Studies investigating neighbourhood effects may use administrative data or generate new data through resident interviews (Woolley *et al.*, 2008) or researcher ratings of neighbourhoods (McDonnell, and Skosireva, 2009; Sampson and Raudenbush, 1999). As is seen in case examples one and two below, information on the interaction between community characteristics and outcomes (for example, mental health) can aid planning of services at the appropriate level, whether they be individual, family, group or neighbourhood.

It can be seen from this brief review that there is a rich tradition of studies of neighbourhood and wellbeing that provides important evidence for policy makers and practitioners. Many of these studies have been conducted outside of the discipline of social work. There is potential to extend our understanding of some of these patterns and phenomena found in studies to date by utilising a range of methods that are in common usage in other disciplines. Research designs that draw on the rich tradition of neighbourhood research described above, and also incorporate newer methods, such as GIS (Geographical Information Systems), QGIS (Qualitative Geographical Information Systems) and Hierarchical Linear Modelling (HLM), allow for analyses that will increase our understanding of how wellbeing interacts with place, space, community and environment.

In this paper we use examples from current and recent research conducted by the authors to exemplify the potential of using spatial data and analysis to deepen our understanding of children's and adults' wellbeing in neighbourhoods. We also comment on limitations, particularly concerning mixed methods approaches. We conclude on an optimistic note with a description of the potential for these methods for social work practice and policy.

Case examples

1. Chile

The first research example is the Santiago Longitudinal Study (SLS). This is a longitudinal study of adolescent substance use, mental health, and health that takes place in neighbourhoods of lower socio-economic status in Santiago, Chile (Delva & Castillo, 2010; Sanchez et al., in press). The purpose of this study is to prospectively examine drug use pathways among male and female Chilean adolescents. This study is funded by the U.S. National Institute on Drug Abuse (NIDA). As part of the study 1025 male and female adolescents have been interviewed. Interviews have also been conducted with a parent of each adolescent. The first wave of data collection for this study has been completed, and collection of a second wave of data is now underway. Measures collected in the study include youth substance use, mental health, and health, relationships with parents, family background, characteristics of the neighbourhood in which families live, and substance use of their parents.

The neighbourhood questions that are asked of youth and their parents include the level of crime in their neighbourhood, the frequency with which their family gets together with other families in the neighbourhood, and the perceived level of substance use in the neighbourhood. Preliminary findings suggest that the perceived level of crime is a strong predictor of both adolescent substance use and mental health problems.

The SLS also benefits from another level of neighbourhood data. In consultation with colleagues in Chile, the principal investigator developed an instrument to conduct systematic assessments from the point of view of a person walking through the neighbourhood. The instrument provided opportunities for a researcher to note various characteristics of the neighbourhood being observed, such as the amount of greenery, whether people were congregating on sidewalks or in the street, and the amount of garbage in the neighbourhood. A social work faculty member from the Catholic University in Chile, along with several graduate students from the University of Michigan School of Social work collected these data in 2009 and 2010. Importantly, separate information was collected for each “block face” or “cuadra” as the researcher walked around the block or ‘manzana’ on which the study participant lived. Thus, there are four distinct pieces of systematically collected neighbourhood information for each study participant. Analysis of these data is underway.

2. US

The second research project is the Detroit Neighborhood Health Study (DNHS) underway in Detroit, Michigan. The purpose of the DNHS is to determine whether ecologic stressors (concentrated disadvantage, income distribution, residential segregation, quality of the built environment) influence the risk of Post Traumatic Stress Disorder (PTSD) and drug abuse/dependence among adult residents of the City of Detroit in the U.S. The central hypothesis is that exposure to ecologic factors is a fundamental determinant of population mental health and that, particularly in the urban context, ecologic factors influence (a) the risk of exposure to potentially traumatic events (PTE), (b) the risk of PTSD given exposure to a PTE, (c) the risk of drug abuse/dependence, (d) the interrelationship between PTSD and drug abuse/dependence, and (e) some of the consequences of psychopathology. This is a NIDA-funded population based longitudinal study of approximately 1500 adult Detroit residents. Participants were chosen from a probability sample of households within the city limits of Detroit followed by randomly selecting one adult from each household. Simultaneously, a structured assessment of Detroit’s 54 neighbourhoods – as defined by the City of Detroit Planning and Development Department – was conducted to systematically characterize features of participants’ local environment. The neighbourhood evaluation instrument

consisted of 24 yes/no questions regarding various aspects of the environment such as quality of housing exteriors; presence of graffiti, abandoned cars, alcohol/tobacco advertisements; street and sidewalk condition; vacant buildings and construction; and street noise and traffic volume, among others.

Block groups were sampled in two ways to capture a sample that was representative of various different types of environments. First, block groups were sampled from each neighbourhood in proportion to the total number of people living in the neighbourhood using 2000 Census data (US Census Bureau 2000). Second, all of the block groups in the city of Detroit were divided into quartiles based on population density (US Census Bureau 2000) and then 10 block groups were randomly sampled from each quartile. Overall, 138 block groups were chosen for evaluation. The team of surveyors who assessed these block groups in June of 2008 was composed of 7 adults from the University of Michigan (faculty and students), and 16 adults from the City of Detroit.

This project is generating new data to examine the potential effect of ecological factors on PTSD and drug use among adult urban residents. Because most of the residents are African Americans, a majority of the sample consists of African Americans making this a unique study in its ability to study whether, and how, neighbourhoods may affect the mental health of a U.S. racial minority population with a long history of exploitation, discrimination, and residential segregation.

3. Wales

The third research example is a qualitative study in two contrasting neighbourhoods in south Wales, UK: The Safeguarding Children in Neighbourhoods study. . The research is funded as part of the Wales Institute of Social and Economic Research, Data & Methods (WISERD), and is being conducted between 2009 and 2011. Starting from the premise that safeguarding children is ‘everybody’s business’ (DFES, 2003, Welsh Assembly Government, 2006b) we are exploring how residents of two contrasting neighbourhoods understand and perform the safeguarding of children in their midst. We are interested in the informal safeguarding of children within families, between neighbours, between children and in the interaction between these informal networks and formal service providers.

The project employs a suite of ethnographic, multi-modal qualitative methods. These include participant observation, semi-structured and unstructured interviews, walking interviews, photography and diaries. To date, the research has involved members of over 30 families (aged from three to over eighty) and approximately 25 community and social work practitioners, local politicians and policy makers in the two localities. Many of the latter group are also local residents.

Particularly *spatial* approaches are embedded in the design. Four examples of how specific qualitative methods can aid our spatial understanding are as follows. Firstly, we have conducted mobile walking and driving interviews with parents, children and community workers. Some of these have included the generation of GPS tracks of the interview routes. Secondly, we have conducted qualitative interviews with residents within micro-localities – clusters of neighbouring houses- about their interactions with their environment and neighbours. This generates data not about ‘this *kind of* place’ but ‘*this* place’ and starts to build a rich picture of the interactions of perceptions and relationships involved in children’s wellbeing at neighbourhood level. Thirdly, we have collected historic data about the places we are researching, through council meeting minutes, newspaper reports and old maps to understand how the intersection of children’s welfare and place has evolved and changed over time. Interviews with older residents and activists have also aided this understanding. Fourthly, participant observation by researchers in the community centre, in neighbourhood

meetings and walking about neighbourhoods provide rich descriptions in field notes of neighbourhood life across seasons and at different times of day and evening.

The project is generating new data and analysis on three ‘spheres’ of safeguarding – the formal system, community-level interventions and everyday informal practices. We are observing spaces (physical and relational) where relationships between and within these spheres could be enhanced. We can see the potential for more recognition of strengths in informal and community safeguarding and a lessening of the distance between the neighbourhood and formal child protection services. A critical analysis of the quality of the data and analysis obtained through this design is included in the next section.

Developing research methods for understanding space, place and community interactions with child and adult wellbeing

Having briefly surveyed common research methods for understanding neighbourhoods in relation to wellbeing, and introduced three exemplar research projects, the paper now proceeds with a discussion of selected recent developments in spatial quantitative, qualitative and mixed methods. This section discusses current and potential application for social work research and demonstrates how these methods have been incorporated into the three research projects in Chile, the US and Wales.

1. Quantitative methods for understanding context: the example of GIS and MLM/HLM

The last several decades have seen the development of GIS which are essentially computer based mapping systems. More recently, desktop GIS has made GIS cheaper and more accessible with the most prominent GIS software being ArcGIS written by the ESRI corporation. Increasingly, however, free and open-source software is available alongside proprietary software. Google’s freeware GoogleEarth and the paid software GoogleEarth Pro are prominent examples of these.

Map data for a GIS can come from several sources. First, data may be available as pre-existing “shapefiles” which are the format for geographic data developed by ESRI, which has since become widespread in all types of geographic information systems. Shapefiles come in three basic types: points, for features best represented as single points like the location of homes; lines for features best represented as lines like roads, rivers or trails, and polygons for features like the outlines of neighbourhoods or counties.

Second, when there are no pre-existing spatial data in a particular situation, data may be generated by the user. For example, most GIS packages allow the researcher to electronically “draw” geographic features on top of another layer of map data such as a street grid or aerial photograph. One situation in which this is commonly useful is creating geographic data, or shapefiles, of the areas served by neighbourhood organizations. Often, such data are not available in pre-existing format, because no one has bothered to create these data.

Third, data may be available through a process known as geocoding. Geocoding refers to the process of converting a list of addresses in tabular format such as a spreadsheet, into map data that can be viewed in a GIS. For example, in the Detroit Neighborhood Study it was possible to convert participants’ addresses to spatial data and to view this information on a map. Geocoding is an algorithm which allows a “batch” of addresses to be converted into locations in a map. Geocoding allows for the automated processing of hundreds or even thousands of addresses at a time. In Chile there was no suitable geocoding database so the research team undertook the time consuming task of mapping each household by hand using GoogleEarth.

Once data have been entered into a GIS, the research team can begin to visualize the spatial relationships between the different data layers. For example, in the Santiago Longitudinal Study, researchers were interested in the degree to which adolescent drug use and mental health problems were clustered in neighbourhoods. Preliminary results indicate some small, but statistically significant, amount of clustering

In our research in Chile and Detroit we have often found that one of the primary benefits of a GIS is the ability to prepare the data for statistical analyses that are appropriate for situations where study participants are clustered inside neighbourhoods. These statistical techniques go by a number of names: hierarchical linear models, multilevel models, or mixed models. Each of these names refers to a feature of the models. Multilevel models is the term that has the broadest usage, and the one that we will employ in this discussion. Multilevel models are a type of regression model that are appropriate to use when data are clustered inside social units like schools or neighbourhoods.

A full discussion of the intricacies of multilevel modelling is beyond the purview of this article and the reader is referred elsewhere (Hox, 2002; Raudenbush and Bryk, 2002; Singer and Willett, 2003). However, within the space of this article, we can outline some advantages of multilevel modelling for understanding the interaction between neighbourhoods and residents' wellbeing. First, while maps may be visually appealing, maps may not offer the ability to precisely identify the specific factors that have a relationship with an outcome of interest. For example, in our work in Chile, we have found interpreting which, out of a group of many factors, is related with youth substance use, or mental health problems, may be difficult when using a map. However, by their very nature, regression models (such as MLM) estimate the effect of each independent variable while accounting for the effect of the other independent variables. Identifying the precise factors related to youth cigarette smoking is achieved by identifying the statistically significant parameter estimates.

Second, in addition to providing the quantitative precision that all statistical models provide, multilevel models make an adjustment for the clustering of study participants inside social units like neighbourhoods. This adjustment is factored into the calculation of standard errors and p values. While this may sound like a technical consideration it has a very practical implication. If relationships in clustered survey data are estimated with more "naive" statistical techniques such as ANOVA or ordinary least squares regression, the calculated p values will be too small (Raudenbush & Bryk, 2002). The result will be that in some cases the researcher will attribute statistical significance to certain relationships where statistical significance is not actually warranted. Thus, when data are clustered inside schools or neighbourhoods, it is crucially important to use statistical techniques that account for this clustering in order to make accurate conclusions (Kish, 1965; Singer and Willett, 2003).

The quantitative methods described above have the potential to enhance our understanding of how neighbourhood factors such as levels of community cohesion, levels of substance misuse and prevalence of violent crime affect wellbeing. They also have the potential to contribute to measuring the impact of neighbourhood interventions, such as Promise Neighbourhoods in the US and Sure Start in the UK. A potential disadvantage is the level of capacity in these techniques for the social work researchers, practitioners and policy makers who may wish to undertake such analysis. This is returned to in the conclusion of this paper. Quantitative methods also cannot adequately explore more nuanced experiences and perceptions of neighbourhood residents. Qualitative and mixed methods can explore different aspects of the interaction between neighbourhood and wellbeing and further promising spatial methods for social work research are reviewed next.

2. Qualitative methods for understanding neighbourhood contexts: the example of mobile interviews

The introduction outlined a theoretical approach to places as complex social phenomena created by the particular interaction of flows and processes. Communities and neighbourhoods contribute to this complexity. They are constituted, constructed and experienced by those who live in them. The boundaries and substance of individual senses of community and neighbourhood are built from many parts: social relationships; power relationships; history; culture; values; attitudes and topography are just some examples. Resulting notions of community and neighbourhood are dynamic and contested, these senses of community and neighbourhood also affecting the attitudes, opinions and behaviours of those that live and work within them. Various 'traditional' and more recent advances in qualitative methods may be useful in addressing these complexities and ultimately understanding better the impact of place on people's lives.

The Welsh research project has adopted various techniques for better understanding the relationships between neighbourhoods/communities and risk, as outlined above. The advantages and limitations of one of these, mobile interviews, are discussed next. This is an increasingly common qualitative method for exploring research questions concerning relationships with place (Ross et al., 2009) and we feel that a brief critical look at its strengths and limitations for social work research is warranted here.

While semi-structured interviews were conducted with people in houses and work-places, mobile interviews also allowed participants to lead the researchers through their neighbourhood either on foot or by car. Also called walkabout or go-along interviews (Kusenbach 2003), these allow a narrative to unfold while on the move.

These interviews have generated quite different data from static, indoor interviews. For example, during the 'tours' residents interact with or avoid each other; passing a boarded up house triggers an anecdote and the researcher scrambles after children through thickets of thorny bushes to enter 'dens'. In one instance, a car pulled up alongside a group of young people and researchers, and the young people explained that the driver would obtain drugs and alcohol for under-age young people. The consequential description of the availability of drugs locally was a direct consequence of the walking tour and might not have been elicited from a static interview. These interviews aid understanding of place both as physical environment and a series of relationships.

Walking tours have been mapped using a simple GPS (geographical positioning system) device which meant that a trace of the walk could be downloaded onto a digital map of the area. These allow the interviewer to remind themselves of the route taken. They also allow certain locations and features to be placed on a map. However, it became clear that the GPS routes were traces of the interview route, saying little about the neighbourhood. They were a map of where participants chose to take researchers or had time to take researchers in the hour or two given aside to the interview. This was exemplified by one group of young people who took researchers around a very small area but also talked about the large amounts of time they spent in other, further, places which they did not want to visit on the tour. From this, it is clear that the GPS tracks on their own are restricted in what they can indicate about spatial practice. This issue is compounded when it is considered that some tours were driven and others walked. It is possible to use GPS devices to indicate spatial practice, for example where you give people devices to carry around while they are going about their daily routines rather than extraordinary routines such as interviews. The Welsh study highlights the importance of considering how GPS devices are utilised, and in what contexts, in order to ensure clarity as to the extent to which they can illustrate spatial practices that are crucial in the creation and maintenance of neighbourhoods and

communities. While there are clear benefits from using qualitative spatial methods such as mobile interviews to investigate place, there is still much work to be done on using new geographic technologies.

In the Welsh study, which is still ongoing, a multi-modal approach (Dicks *et al.* 2006) combining mobile interviews with visual data, observation, geographically clustered interviews, diaries and historical data are enabling the team to build a rich understanding of the safeguarding of children in two neighbourhoods. Nonetheless, such research designs cannot provide clear indicators of how the information gained from qualitative data relates to quantifiable patterns and outcomes in children's lives. The potential and limitations of combining qualitative and quantitative spatial methods are discussed next.

3. Mixed methods for understanding space and context

In the previous two sections, cases have been made for the adoption of quantitative and qualitative research methods in order to investigate place. Each approach has been shown to contribute different understandings of spatial variation in the neighbourhood and community contexts of residents' lives. However, there has been a rise in interest in the integration of quantitative and qualitative spatial data.

The use of mixed-methods in research is often claimed when in fact multiple-methods are being used. Mixed-method working is where different methods are interlaced: it is about asking methods to talk to one another rather than investigate the same phenomenon separately within a project (Bryman, 1992). The integration of spatial data raises particular issues. First is one of scale: quantitative spatial analysis tends to focus on large areas and populations while qualitative investigations of place tend to do the opposite. Allowing these scales to talk to one another is one of the challenges and potential rewards of mixed-spatial methodology. The second issue is epistemological. Traditional GIS is concerned with the idea of space as a container, a Cartesian backdrop onto which points, lines and areas may be located and their relation to one another calculated. This is contrary to the notion that places are socially constructed as outlined above. The processes; histories; flows and relationships that construct place are not those that are traditionally easy to map within a GIS.

One emerging trend in neighbourhood research has been the advent, over the last few years, of Qualitative GIS (QGIS) (Elwood and Cope, 2009). This has emerged as one response to certain critiques of GIS including the traditional perception that GIS is a 'quantitative' endeavour supporting the idea of a value-free objectivity. To some extent, the name Qualitative GIS is a misnomer as it can be seen as a *mixed-method* approach to research that seeks to integrate quantitative (patial) and qualitative (spatial) understandings of place. QGIS adopts critical geographical understandings of space as inseparable from social processes and relations and seeks to map the "nonmeasurable properties of place, human experience, social hierarchies, power relations, and theoretical relationships that are of concern to critical geography" (Pavolvskaya 2006: 2015). The challenge to QGIS is to integrate the qualitative spatial data described in the previous section with the types of data being generated and represented by GIS analyses as also outlined earlier. This has resulted in some focussing on the re-design of GIS software and databases to represent and analyse these alternative spatial data (Elwood 2006). Moreover, this interest in the possible uses of GIS in qualitative research is concerned with "seeking ways to extend and diversify the forms of spatial knowledge that may be included and represented in a GIS" (Elwood 2006: 696).

The adoption of new methods of capturing and representing such spatial knowledge has been central to QGIS (Elwood 2006). This has included the use of graphics, journal-keeping, narratives, neighbourhood appraisal, photographs/video, poster-making, three-dimensional

representations, sound files, and various mapping techniques including sketch maps, mental maps and the use of topographical maps to collect and represent spatial data within a GIS database (Cinderby and Forrester 2005; Dennis 2006; Elwood 2006; Pavlovskaya 2006). While QGIS is still very much in its infancy, it is an approach to researching places that has the potential to bring together different forms of spatial data in order to improve understandings of spatial phenomena. These methods, and the further creation of new strategies, are necessary in order to meet the challenge of mapping both theoretical relationships and qualitative research data within traditional GIS databases in order to develop mixed-method understandings of the contexts of the lives of people in their neighbourhoods.

There are few current examples of successful mixed-methods research in spatial research investigating neighbourhoods and child and adult wellbeing. In Wales we are currently exploring the potential for integrating our qualitative data with quantitative data, collated in the research centre, about outcomes for children in the locality and the wider geographical region. It is likely that in this project the two forms of data will inform and illuminate the analysis of each data set rather than be fully integrated for analysis. In Chile we also conducted open-ended interviews with 13 parents of the youth participating in the SLS. From these in-depth interviews we learned, for instance, of the extensive feelings of mistrust, lack of faith, and disillusionment that residents expressed towards government organizations and leaders as well as towards 'delinquent' youth who would continuously deface children's playgrounds no matter how many times the residents would organize themselves to clean and repair these local playgrounds (Horner et al., in press). Essentially, the qualitative study helped identify important structural and macro level factors that would not have been identified if these interviews had not been conducted. Nonetheless the data sets' interaction thus far might be said to have been informative rather than fully integrated.

In summary, therefore, it might be noted that whilst quantitative and qualitative forms of spatial data collection are increasingly sophisticated and have strong potential for social work research into neighbourhoods and child wellbeing, truly integrated mixed methods in this field are still in their infancy.

Conclusion

Having described some current developments in methods for understanding neighbourhoods and wellbeing, and illustrating these with three case studies, the paper concludes with a discussion of the positive potential for the methods described, their current limitations, ethical issues and potential future directions.

Positive potential

There are a large number of research methods and designs available for exploring the interrelationship between neighbourhoods and child and adult wellbeing and some of these have been described in this paper. We recommend the social work research community embrace more complex spatial methods in order to produce more sophisticated analyses of interactions between place and people. We believe that there are three positive areas in which these methods have potential for social work. Firstly, we believe that these methods can improve the quality of the evidence base in social work, giving added value to social work research. If certain phenomena, such as adolescent mental health or substance use, are spatially clustered in some way, then methods that are "aware" of space or geography to some degree must be used to detect those phenomena. Methods that are "naïve" about space and geography will likely fail to detect spatial or geographic processes. In quantitative work, failure to account for the degree of spatial clustering may lead to false attributions of statistical significance. In qualitative work, research that ignores local geographies will miss

the opportunity to explore the relational and physical interaction with the local environment in people's everyday lives.

Secondly, many of the spatial research methods which have been discussed above are highly engaging and capture the imagination of research participants at all stages of the research process, from data collection through to communication of findings. Consequently, some of the methods discussed in this paper have the potential for greater community dialogue than traditional research methods alone. In Wales, the detailed attention to community factors has generally meant a warm engagement from residents and community workers, with some participants getting involved in generating data and setting new research questions as the project progresses. For dissemination of findings, the ability to generate maps using GIS data can help to make data more visually appealing and understandable.

There are also direct policy and practice applications for this research. If findings suggest that community level mechanisms are clearly involved in issues like child or adult mental health or substance use, then research reports can suggest appropriate community level targets for intervention. Accessibility of resources and services can be mapped, showing gaps or cross-over of provision. Practitioners might be helped to more fully understand the impact of neighbourhoods and communities for individual assessments of need and risk. As Hillier (2007) notes, analysis at neighbourhood level highlights disparities and inequalities in society and helps practitioners move beyond a solely individual deficit model in assessments.

Limitations

Despite our enthusiasm for the spatial methods described in this paper, it is important to note a number of current limitations and pitfalls as follows. Firstly, there is a seductive appeal of the visual in maps and graphics in research. Unless there is a clear analytic reason linked to research questions and research design for using GIS and similar tools then there is a risk that they will lead to a certain superficiality. For example, it was seen above that making GPS tracks in qualitative mobile interviews produces an appealing track on a map, but may have limited added analytic value unless nested in other analyses.

Secondly, and related to the point above, there is a risk that maps of community issues and resources, which may be fascinating to academics, may appear to create little new knowledge for residents of these communities. Several of us have had the experience of working hard to collect data, create data sets, analyse and write up results. However, after presenting to community audiences, we have been informed (usually politely) that we had found little information that was not already known to community residents.

Finally, there are ethical implications which underlie all of these methods. Of particular concern are issues of anonymity when researching small neighbourhoods, where people might be easily identifiable from the data they contribute to the research and especially when research questions concern sensitive issues such as child welfare. This is often an issue with qualitative data, but it is an issue that becomes further complicated when considering place and using multi-media methods in order to do so, as in the Welsh study. The use of visual multi-media data means that images either have to be empty of people or are full of identifiable individuals. If the locality is small, researchers may not want to identify it. But this means that all the multi-media data and GPS tracks (which clearly identify place) are not useable in any public presentation of data. It may be possible to overcome this by analysing the multi-media data and anonymising it in the writing up. However, this to some extent negates the nuance afforded by multi-media methods. Not naming the place of research also seems to undermine the interest in the particularities of that place. These

ethical considerations should not prevent such work being done, but highlight the need for careful consideration at the outset of any research work.

Future directions

Finally we wish to conclude by noting further directions in this area. It should be noted that we have not had the space to discuss in this paper a number of other spatial methods whose use in social work have been fairly limited to date (particularly outside of the US). These include social network analysis which can be used in quantitative, qualitative or mixed methods applications and which resonates with social work practice approaches that recognise the importance of social networks to wellbeing.

We also propose that more spatially informed research has strong potential to be used directly by policy makers, commissioners of services and community organisers to better understand their local communities' needs, current resources and relationships between neighbourhoods and social indicators. This includes qualitative, quantitative and mixed methods research. Social work students and practitioners should also have the opportunity to gain skills in spatial analysis for the purpose of analysing community needs and strengths and designing and evaluating interventions. For example, the University of Michigan and other US schools of social work currently offer modules in GIS for policy and practice. Social work educators in the UK and elsewhere may wish to consider this potential tool for educating future practitioners to work within a spatial dimension.

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