Urban cohesion and resident social networks:

An analysis of spatial, structural and ideational forms of

interaction and consequences for deprived

neighbourhoods.

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ABSTRACT

Most studies of 'cohesion' between urban residents focus separately on either social network structure or ideations with very little attention given to the intersection between spatial, structural and ideational dimensions of networks. This is problematic on two levels: firstly because attitudes and practices are formed in the context of personal social networks; and secondly because social interactions between residents are physically embodied and therefore spatially constrained. This thesis explores empirically the relationship between spatial cohesion (the extent to which a network is geographically localised or dispersed), structural cohesion (the extent to which a network is tight-knit or fragmented) and ideational cohesion (the extent to which residents have similar attitudes and practices). The social networks, attitudes and practices of white-British residents living in deprived urban localities of North Manchester are studied (survey, n=409; interview, n=53). Variances in forms of cohesion were found to have consequences for residents and localities.

At the individual level, the spatial and structural shape of a resident's network was linked to their attitudes and behaviours. Attitudes and practices were 'framed' in the context of personal network structure exhibited through a set of resident 'roles'. This matters for urban cohesion because a person's social network structure influenced whether they liked their neighbourhood, trusted other residents, felt a sense of community or had found jobs through contacts. Previous studies have argued that contemporary urban networks have become fluid, dynamic and spatially dispersed. Yet this research found that although some people had networks that were geographically spread, most resident networks were made of localised, tight-knit, stable, long-term relations. Moreover, people with these cohesive, localised networks framed their experiences of urban cohesion differently to those with geographically spread and/or disconnected social networks. Particularly because the attitudes and practices of residents with localised, cohesive networks were very often habitual and socially reproduced. Social networks focus people's activities in such a way that not only constrains or enables current attitudes and practices but can also affect an individual's ability to change their future behaviour.

At the locality level, the type of 'deprived' locality seemed to influence network structure. The structural, spatial and ideational distribution of cohesion at locality level provided neighbourhoods with different portfolios of social capital. Qualitative differences were observed between homogeneous-deprived (very low income, white areas) and socially mixed-deprived (white deprived areas with some class/ethnic mix) localities. People living in deprived-homogenous localities concentrated their networks within the local area and had few ties to residents of bordering areas, a sign of social distance. Conversely, residents of socially mixed-deprived localities had more potential to bridge ties to other neighbourhoods because their networks were not overly focused within the local area. Given that attitudes and practices are framed in the context of social network structure, it was argued that residents of deprived-homogeneous and socially mixed-deprived areas may experience and interpret urban cohesion differently and this has implications for universal policies of cohesion in deprived neighbourhoods.

The thesis illustrates the interplay between spatial, structural and ideational forms of cohesion and highlights repercussions upon constraining or enabling individual action and for the generation of neighbourhood social capital. The originality of analysis and data synthesis are used to advance a relational and contextualised theory of urban cohesion and contribute to wider academic and policy debates on urban social networks and neighbourhood deprivation.

DECLARATION

that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

Dedication and acknowledgement

As this thesis is about social networks, it is most apt to make a note of the people who have influenced this work.

I have been extremely fortunate to be part of a hub of excellent researchers at the University of Manchester who share an interest in social networks and social network analysis. In 2007, this group was informally established as the Manchester Social Networks Group by Nick Crossley and Mark Tranmer and became pivotal in cementing my interest in SNA as a student. Last year, this group became formalised into the Mitchell Centre for Social Network Analysis and in April 2010 hosted the 6th UK Conference for Social Network Analysis.

As a supervisor, Nick Crossley has offered invaluable academic support and insight over the years, particularly in providing me with many opportunities to develop SNA skills and organise conference workshops in this field. In addition to the endless cups of tea, I have been appreciative of your honest yet diplomatic steer and also grateful that you trusted me to be methodologically creative with this thesis. I owe thanks to Martin Everett and Elisa Bellotti for bringing methodological and technical expertise on UCINet and offering training workshops and to the Cathy March Centre for Census and Survey Research (CCSR) for funding research training courses on statistics.

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This thesis is dedicated to my wonderful mother who first taught me to read and write and has since encouraged me at every step of the way. This was always for you, thank you.

Glossary of Terms

Adjacency matrix: a square matrix consisting of zeros and ones from which the data of a network graph is input. In an undirected network, a score of 1 is present in the cell corresponding to paired nodes if a relation is present, a zero indicates no connection (other numbers can be used in directed and/or weighted networks – for example, to measure reciprocity or intensity).

Clique: a subgraph in a network that is strictly maximal and complete. That is, every nodes is connected to every other node in the network, so that all nodes are adjacent.

Cohesion: In this thesis 'cohesion' or 'urban cohesion' denotes ties between individual residents. Three types of cohesion are explored, spatial cohesion, structural cohesion and ideational cohesion.

Component (Social Network Analysis): a maximally connected subgraph. This is less stringent that the clique definition because in a component nodes must be connected by a 'path' rather than be adjacent. To be distinguished from a 'principal component' (in statistical analysis, see PCA).

Core-periphery model: used to detect the presence of a central 'core' set of actors in relation to peripheral actors. A core-periphery structure can be observed when high density is found between a clique of core nodes, alongside detection of a peripheral set of actors who have more ties to the core than to each other.

Degree centrality: the number of connections that a node has in a network. A directed network can have both in-degree centrality and out-degree centrality.

Density: an index of overall connectivity or structural cohesion in a network, used to determine how tight-knit or fragmented a network is. Density in a binary network is calculated from the total number of ties divided by the total number of possible ties, expressed as n(n-1). If all nodes are all connected to all other nodes, then the density is 1. If there is no link in the network, then the density is 0.

Fragmentation: the opposite of cohesion, i.e. in situations where cohesion does not occur, there may be spatial, structural and ideational fragmentation.

Homophily: a measure of the tendency for nodes in networks to connect preferentially to other nodes that some sort of attribute similarity. See also 'residential homophily'.

Ideational cohesion: cohesiveness between residents based on patterns of collective attitudes and practices. Individual residents may be defined as ideationally cohesive (proximal in social

space) if they share similar patterns of attitudes and practices. Ideational cohesion is analysed using Principal Components Analysis.

IMD (Index of Multiple Deprivation): An overall index of deprivation providing rank scores for LSOAs and wider neighbourhoods. The IMD provides an overall rank of deprivation for a locality derived from aggregate, weighted scores across seven different types of deprivation in the Index of Deprivation (ID) income, employment, health, education/skills/training, barriers to housing, living environment and crime. IMD scores therefore reflect multiple forms of deprivation. This thesis uses data from 2007 (IMD2007). IMD 2007 scores are ranked nationally, with a score of 1 representing the most overall deprived locality in England and 32,482 being the least deprived LSOA.

Isolates: nodes that are disconnected in a network.

LSOA (Lower Super Output Area): a small-scale geographic area measurement used by the Office for National Statistics, to sub-divide neighbourhoods into local level units, which capture an average residential population of 1,500 people. In this thesis, all LSOAs feature a predominately white resident population, are located in North Manchester and ranked as highly deprived on the IMD2007 listings. In this thesis, the term 'LSOA' is used interchangeably with 'locality', in contrast to the term 'neighbourhood'.

Neighbourhood: refers to the wider residential area in which the smaller LSOA is embedded.

Personal network: a network of relations between a focal individual (ego) and his/her contacts (alters). Personal networks are defined from the subjective viewpoint of ego.

Principal Components Analysis (PCA): PCA is scaling method for data reduction that reveals latency between related variables and from this produces a set of distinct, uncorrelated Principal Components. A PCA is used in this thesis to simplify the attitudinal and practice-based survey responses into a smaller set of latent ideational constructs.

Residential homophily: describes the extent to which ego-residents associate with alters from the same local neighbourhood. In an aggregated social network of residential ties, residential homophily is expressed as the proportion of same locality (internal loop) ties out of the total number of neighbourhood ties.

Social Network Analysis (SNA): a theory and accompanying methodology primarily focused on the structure of relations between 'nodes', rather than the attributes of the nodes. As such SNA uses relational data – structural information about the ties between nodes. SNA is used in this thesis to analyse the structural form or shape of resident personal networks.

Social network: a set of social actors (vertices or nodes) and the relations that connect them (edges or arcs).

Spatial cohesion: describes the extent to which a personal network is localised or spatially dispersed and is measured using statistical compositions and a procedure for mathematical categorisation.

Spatial dispersion: the spread of a network in geographic space. A measure for spatial dispersion is developed in Chapter 4 using weighted distance categories of alter residential location, and can be calculated thus:

$$SD = \frac{\Sigma\ ia}{4\ k}$$

Where, i is the number of alters, a is the spatial category and k is total no of alters in ego-network. A SD score of 0 represents no dispersion; all alters reside in the same locality as ego. A score of 1 represents the maximal possible spatial dispersion, all alters must live beyond the Manchester area.

Structural cohesion: measures the extent to which the edges of a personal network are connected cohesively and is analysed using measures of Social Network Analysis.

Subgraph: a lower-order or local level cluster of three or more actors existing at a sub-level within the whole network.

Two-mode network: a network of relations between two different sets or types of nodes (for example, actors and events).

Introduction: *Exploring the landscape*

This thesis is a study of cohesion between urban residents in social and geographic space. It begins by sampling the personal networks of white residents living in 'deprived' urban localities in North Manchester, UK, examining effects of different forms of resident cohesion. In particular, it analyses the interplay between spatial, structural and ideational forms of cohesion (defined in Glossary and below, p.26) to assess how the organisation of personal network structures across urban space is linked to the structuring of resident attitudes and practices. The research draws on data collected between 2008 and 2009; including 53 qualitative interviews with residents and 409 personal networks collected by survey (yielding information on 2,018 alters). The study critically analyses this empirical data to examine how patterns in spatial, structural and ideational forms of resident cohesion affect the distribution of social capital across urban space, with implications for residents and localities.

Rationale

It is perhaps somewhat commonsensical that the people we know and the spaces we inhabit have a powerful influence upon our lives. Our relationships with friends, family and acquaintances, and the physical locations of our interactions, help shape our interests, attitudes and behaviours. These interpersonal ties, our social networks, also guide the portfolio of social, economic and cultural capital we have access to. Despite their importance and potential instrumentality, many of these relations are carried out habitually, established beyond our control and with little reflexivity.

Yet the evolution of personal networks is in no way random or accidental because human social networks are highly structured and stratified (Bottero, 2007). The form and content of our personal networks is influenced by the social contexts in which our everyday lives are embedded; for example, where we live, our social class, income, education, gender and ethnicity. As a consequence of a highly stratified society, it is perhaps inevitable that people experience opportunities and constraints through their personal networks differently. Social network ties are distributed unequally so that there is more cohesion, or clustering, between

some groups of society than others. Likewise, the networks of some resident groups rarely intersect and as these processes recur over time, social distance between these fragmented groups increases.

As individuals we are unlikely to notice how our everyday, routine micro-interactions, contribute to larger, macro-level social and urban consequences. Yet, if there are patterns to the interactions of residents, these structures may have wider resonance for life in urban localities, particularly so in deprived neighbourhoods. For individual residents, this may constrain or enable social action. At a collective-level, these structures may affect the generation and distribution of social capital across the wider urban landscape. The thesis explores patterns in urban cohesion to gain further knowledge about the implications of these structures for both residents and neighbourhoods.

Cohesion between urban residents is an important and interesting research avenue precisely because there may be micro and macro consequences to patterns of human social interaction. Moreover, urban cohesion is complex and multi-level; there are different forms of interaction and structure to be analysed. Cohesion is spatial because we may seek to address questions about the extent to which individuals in a network are geographically localised or dispersed (Festinger, 1950b; Gans, 1962; Fischer, 1982; Wellman, 1996, 2001). Cohesion between residents is also structural, prompting inquiries concerning the extent of connectivity in an individual's personal network, that is, whether the pattern of ties is dense or fragmented (Doreian & Fararo, 1998; Moody & White, 2003; Wasserman & Faust, 2007). Thirdly, and just as importantly, cohesion is ideational because residents may be described as 'cohesive' if they share similar attitudes and practices, that is, if their positions in social space are proximate (Sorokin, 1927, 1943; Merton, 1968; Putnam, 1995).

The effects of spatial, structural and ideational cohesion may be interwoven. In some neighbourhoods, spatially localised and structurally cohesive urban networks may create internal ideational cohesion between members (such as trust, shared culture and identity), but this may spur feelings of social distance, alienation and disconnect toward external groups beyond the neighbourhood. The internal dynamics of a unit (whether belonging to a

neighbourhood or a group) infringe upon and influence what happens externally to the unit. Understanding urban social networks therefore requires a relational or interactive theoretical paradigm based on the co-construction of network forms. In the most deprived localities, these internal-external relational dynamics may have important consequences if these areas feature closed, homophilous, localised networks, which are conducive to social reproduction and more likely to resist new information, attitudes and practices (Lin, Cook & Burt, 2008). Subsequently, networks with particular combinations of spatial, structural and ideational cohesion may be quite impervious to the social change required to overcome local urban problems such as poverty cycles, low levels of education, anti-social behaviour and unemployment.

The study of urban social networks is not new. Still, the impetus behind this study is to provide a novel analytical lens to research the intersection between forms of cohesion in urban social networks, whilst acknowledging the context of deprivation. Over the past decade, political, social and economic attention towards the 'neighbourhood' or 'locality' has risen. In a British context, policy interventions such as Neighbourhood Renewal Funding (NRF), New Deal for Communities (NDC), Local Area Agreements (LAE) and Neighbourhood Policing have been implemented to reduce localised deprivation and its effects. The emphasis of these policies has been focused upon *relationships* between people living in deprived neighbourhoods, that is, resident social networks. Indeed, the creation of the Department for Communities and Local Government in May 2006 and subsequent efforts to dissolve barriers and tensions between socially distant groups reasserted the importance of the 'local' sphere for sustaining urban cohesion.

British policy on urban cohesion has been heavily influenced by social capital theory; in particular, Robert Putnam's (2000) study *Bowling Alone*, which describes the increase of social isolation in the United States. Putnam argues that civic interactions between residents can create local social capital with positive effects on personal and collective well-being (Putnam, 2000). Putnam has made some very notable contributions, most famously his theory and analysis of the 'bonding' and 'bridging' ties of residents as 'social glue', providing collective social benefits for individuals and neighbourhoods. However, drawing extensively on Putnam's research has also led to some significant methodological shortcomings in subsequent

political conceptualisations of resident cohesion. Specifically, much UK policy-based research has focused upon the use of ideational indicators of resident cohesion rather than studying the actual pattern of network ties between residents. This has had severe epistemological and ontological consequences in terms of how urban 'cohesion' has been defined, how it has been studied and has influenced what we subsequently know about cohesion between residents.

Much of what is currently known about urban cohesion is based upon what residents think about their personal networks, rather than what they actually do. That is, cognitive assessments over empirical observations of how resident interactions are actually geographically and socially structured in practice. The result has been a methodological focus on individualistic attribute data and, at best, dyadic analysis instead of the full use of relational data, adjacency matrices and Social Network Analysis. Cohesion between residents must be captured at multiple levels to map the spatial and structural form of resident networks. Social Network Analysis, 'the disciplined inquiry into the patterning of relations among social actors, as well as the patterning of relationships among actors at different levels of analysis' (Breiger, 2004: 505) is well-suited to meet these research needs. This is not to say that ideational data is unimportant, rather these data can used to supplement relational network data. Indeed, relational-ideational data combinations can be useful for developing a typological analysis (Scott, 2007: 3). This thesis attempts to move from studying the ties *of* residents (in the individualistic-sense) to also incorporate the relational structure of ties *between* residents. Individuals have personal networks but they are also part of these network structures.

Some studies of urban social networks often tend to focus on the structure of interactions within a bounded spatial unit which is limited when we know that personal networks and communities often extend much further than the neighbourhood (Wellman & Leighton, 1979). Instead, it is more appropriate to take a relational approach that not only acknowledges ties beyond the locality, but in taking this further, studies the implications of these internal-external neighbourhood dynamics. Where other research has sought to make comparisons between neighbourhoods that are dissimilar, this study attempts to highlight differences occurring within a relatively socially similar set of 'deprived' localities. Rather than focus on differences between heterogeneous class or cultural groups, this thesis begins by taking a sample of white

residents from geographically proximate and homogeneously 'deprived' localities. Application of this distinctive perceptual lens seeks to identify differences between individuals who might otherwise be described as 'similar' and acknowledges that a diversity of personal network structures and experiences of urban cohesion can be found amongst residents living in similar types of localities.

A final motivation for the thesis is to study urban social networks and resident cohesion for critical means. Chapters of the thesis analyse how different proportions and combinations of spatial, structural and ideational cohesion in personal networks might provide neighbourhoods with variant portfolios of social capital, and at an individual-level, how this might constrain or enable the roles individuals play in their local neighbourhoods.

The analysis is critical in that I reconceptualise urban cohesion as relational and try to highlight the *consequences* resulting from patterns of cohesion and fragmentation between residents. In particular, I aim to explore and illustrate different forms of cohesion within a seemingly homogeneous sample of white-British residents living in deprived areas of North Manchester. I restrict my study to this specific sample in order to highlight the diversities of urban cohesion within a socially similar sample rather than to provide a comparative account of differences between different class or ethnic groups. It is quite obvious that factors such as class and ethnicity may contribute to the evolution of different types of networks, attitudes and practices. Less is known about how such variances of urban cohesion and social networks might occur within a socially similar sample. I do not wish to study the effects of class or ethnicity upon urban cohesion, resident attitudes or social network structure. Instead, my motivation is to investigate how individuals who are socially similar may act out, or practice urban cohesion through their social networks in different ways. It is this structural, spatial and ideational variance that is paramount to understanding forms of cohesion.

The social organisation and stratification of human interaction networks is most obviously marked out in urban environments, so cities are ideal physical spaces in which to empirically analyse the patterning of resident social networks (Park & Burgess, 1925; Park, 1952). Despite this, there has been a substantial shift away from research on informal face-to-face networks of

low-income urban resident groups and an increase in studies of social networks of more affluent, educated and mobile urbanites (Kesslering, 2006; Wellman, 2001, 2005; Urry & Elliot, 2010) and their 'fluid', shifting relations (Bauman, 2000; Beck & Beck-Gershiem, 2000). In this study, I focus wholly on the regular face-to-face interactions of white residents of disadvantaged urban localities in North Manchester. I opt to study a socially similar sample of white-British residents in deprived localities over other a comparative study of ethnic and/or class groups. Not only because white-ethnic residents form the largest and therefore most available social group, but secondly, because I am interested in how the context of neighbourhood deprivation (as opposed to neighbourhood effects per se) influence social networks and urban cohesion.

Lastly, the analysis is critical in that I explore the linkages between structure and agency; how the micro-interactions of residents give rise to macro-urban outcomes, and how these outcomes may constrain or enable the actions of individuals (Giddens, 1979; Feld, 1981; Bourdieu, 1986; Burt, 2001; Bottero, 2005, 2007). In particular, I aim to uncover structures of social interaction that may provide opportunities or constraints for the generation of social capital and resident social action.

Research Objectives:
1. To develop a multi-dimensional theoretical concept of cohesion that addresses the interplay between spatial, structural and ideational forms of resident interactions.
2. To highlight different forms and patterns of cohesion within a socio-economically similar sample of personal networks of white residents living in deprived localities.
3. To critically explore the *consequences* of patterns of resident cohesion with specific focus on neighbourhood social capital and resident social action.
4. To make qualitative observations of class and locality effects underlying patterns of cohesion and fragmentation.[1]

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[1] The study does not attempt to produce generalisable statements or undertake causal analyses; rather observations will be context-specific, relating to this data sample only.

Forms of cohesion

Resident networks are complex webs of interaction spanning social and geographic space. The thesis attempts to make these interactions digestible by breaking 'urban cohesion' down into manageable spatial, structural and ideational elements. The thesis is focused upon the interplay between three forms of cohesion between residents:

1. Spatial cohesion: the physical composition of resident ties, the extent to which personal networks are geographically cohesive (localised) or dispersed in urban space.

2. Structural cohesion: the relational structure of resident interactions in network space, the extent to which a network is tightly connected (dense) or loose (fragmented).

3. Ideational cohesion: the extent to which residents hold similar positions in social space based on shared attitudes and practices.

Empirical chapters and the analysis of forms of cohesion

The empirical chapters draw on primary data to analyse forms of cohesion between residents.

Chapter	Form of cohesion	Primary type of analysis	Type of space
3	Spatial cohesion	Statistical compositions	Geographic space
4	Structural cohesion	Social Network Analysis (SNA)	Network space
5	Ideational cohesion	Principal Components Analysis (PCA)	Social space

Chapter 3 studies 'spatial cohesion' to understand the geographic pattern of ties between residents across urban space with focus on compositions of residential homophily, propinquity and spatial dispersion. Chapter 4 uses relational data to undertake an analysis of 'structural cohesion' across personal networks to assess how tightly-knit or fragmented these tie structures are using measures of density, cliques, components and isolates. Chapter 5 introduces 'ideational cohesion' to examine cohesiveness between individuals based on similarity of attitudes and practices.

Figure 1: Analytical model of urban cohesion and fragmentation
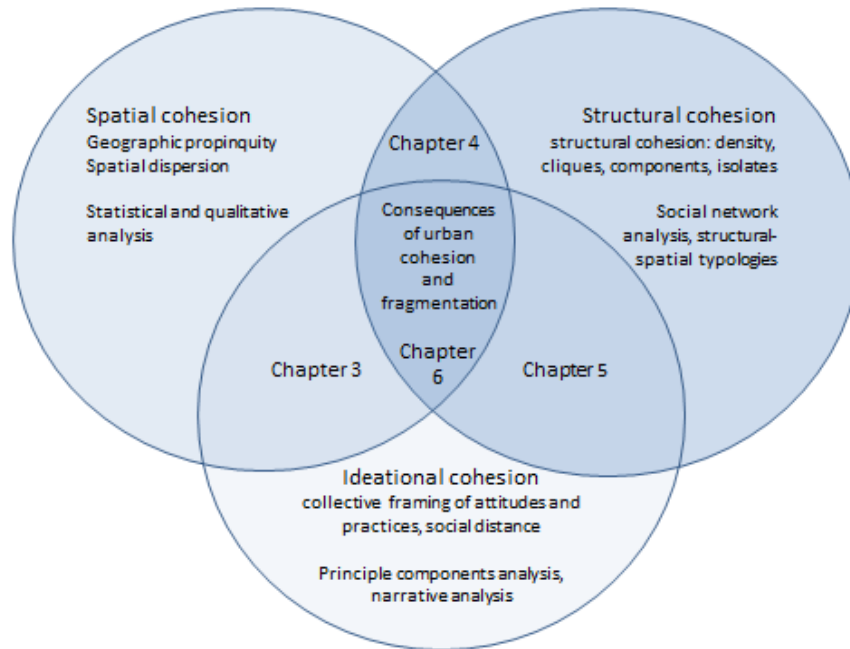
However, spatial, structural and ideational forms of cohesion do not operate independently of one another; there is much overlap between these dimensions. Accordingly, the empirical chapters attempt to capture this interplay between forms of cohesion. Though the primary focus of Chapter 3 is on spatial cohesion, attention is also given to the role of social factors in influencing patterns of resident interaction in urban space. Therefore, the chapter verifies the link between geographic and social space, for example interpreting residential homophily, propinquity and spatial dispersion through narratives of social closeness and distance. Similarly, the analysis of structural cohesion in Chapter 4 is supplemented by a data on spatial cohesion to assess whether a correlation exists between density and spatial dispersion in the sample of personal networks. Chapter 5 takes all three forms of cohesion together, merging structural, spatial and ideational cohesion to understand how resident attitudes and practices are 'framed' in the context of personal network structures. Together, the chapters aim to explore the central research question, *what are the effects of the interplay between spatial, structural and ideational forms of cohesion in deprived urban areas?* (see Figure 1).

The layout of the thesis

The thesis is organised into three main sections. The first part of the thesis sets the scene for the research by introducing the theoretical and methodological components of the study. Chapter 1 reviews academic and policy literature relating to the project scope and Chapter 2 presents the thesis methodology. The second part of the thesis is concerned with the analysis of data. Chapters 3, 4 and 5 are empirical in focus and provide analysis of spatial, structural and ideational forms of cohesion using combinations of statistical analysis, Social Network Analysis and qualitative narrative analysis. Chapter 6 discusses the empirical findings in reference to the broader theoretical issues, literature and research questions. Chapter 7 provides a conclusion to the thesis. I will now describe the chapters in more depth.

Chapter 1 provides a review of key literature pertaining to social networks, space and urban conditions. The first section deals with the concept of 'cohesion'. It is argued that the term 'cohesion' (or 'urban cohesion') between residents is often presented using vague, ambiguous and shifting definitions, with studies focused on individualistic ideational data (such as attitudes and practices relating to neighbourhood satisfaction, community and trust) over the collection of relational network data (de facto ties between residents). Consequently, the first part of this chapter is concerned with re-conceptualising 'cohesion' and argues that the interplay between spatial, structural and ideational forms of resident interaction may help us to understand the complexity of urban cohesion. The remainder of Chapter 1 embarks upon a discussion of existing literature covering spatial, structural and ideational aspects of resident cohesion. Given that these forms of cohesion have not been studied together in the manner proposed by this thesis, I attempt to present the literature on the three forms of cohesion in a way that illuminates the interplay between dimensions. This method of presentation also compliments research questions 1, 2 and 3. First, attention is given to the social and geographic structuring of interactions, for example, propinquity, social distance, embeddedness and mobilities. This is followed by literature which considers the overlap between ideational factors and network structure, for example, the social construction of attitudes and normative practices, habitus, experience and culture.

Chapter 2 sets out the thesis methodology and provides further discussion of the analytical model and concepts presented in this chapter (Figure 1). The first section also outlines some ontological and epistemological considerations relevant to a social network approach. Here, I also present the research questions and describe how these fit within the thesis. The thesis is guided by an over-arching question: *what are the effects of the interplay between spatial, structural and ideational forms of cohesion for deprived urban areas?* This broad question is explored through a set of sub-questions:

RQ.1   How are resident interactions organised in social and geographic space? How salient are geographic propinquity and social distance in contemporary personal networks?

RQ.2   How structurally and spatially cohesive are North Manchester resident networks? Is there a relationship between density and spatial dispersion of personal networks?

RQ.3   Are resident attitudes and practices framed in the context of network structure?

RQ.4   Can different network forms and experiences of cohesion be found within a relatively socio-economically similar (white, deprived locality) sample? If so, are these randomly organised or can patterns be found?

RQ.5   What are the consequences of this interplay between spatial, structural and ideational forms of cohesion for social capital and social action?

The second section of Chapter 2 describes the procedure of eliciting personal network data and delineating the boundaries through sampling residents and localities. A description of survey (n=409) and interview (n=53) data is provided, as well as the name generators used in each context. Methods for data analysis are discussed in the third section, focusing on Social Network Analysis (SNA), descriptive statistics, Principal Components Analysis (PCA) and qualitative analysis of narratives. The final section discusses ontological and epistemological issues, limitations and caveats and also presents some issues of reliability and validity inherent to the chosen methodology. I also include some honest reflections on the barriers and ethics of personal network data collection in deprived urban localities.

Chapter 3 explores the relationship between social and geographic space (RQ1) through an analysis of spatial cohesion and social distance. The analysis is informed by Blau's (1977a) argument that empirical observations of networks between neighbourhoods are manifestations of social closeness, whereas an absence of networks between residents implies social distance. The chapter analyses the spatial distribution of North Manchester networks and the extent to which social relationships are 'focused' in (Feld, 1981), or constrained by, social and physical space. The first section maps the spatial patterning of resident networks across the city and uses Social Network Analysis (SNA) to explore the distribution of ties and positioning of localities in the city-wide network. The next section analyses personal networks that are geographically propinquitous. Here, I argue that residentially homophilous ties provide localised bonding capital and that social distinctions exist between residents of some bordering neighbourhoods. Spatially dispersed ties are considered in the third section. I illustrate that different forms of social closeness and distance are evident between North Manchester and other parts of the city. Overall, the chapter illustrates that the spatial patterning of ties is underscored by social factors and that the organisation of resident ties in urban space is socially structured, not random or fluid.

Chapter 4 provides an analysis of structural cohesion across the sample of survey personal networks (RQ2) and seeks to find differences and similarities in the way resident networks are organised (RQ4). The first section applies methods of Social Network Analysis to measure structural cohesion across the 409 survey networks, assessing density, degree centrality, components, cliques and isolates. Based on existing literature, I argue that resident networks that are localised will also be dense. The second section analyses this proposed relationship between spatial and structural cohesion. I develop a measure of spatial dispersion for the personal network sample to compliment the measurement scale for network density. I use both measures to illustrate a correlation between spatial dispersion and density in the 53 networks generated by qualitative interview. The interview networks are then organised into a set of structural-spatial typologies based on their density and spatial dispersion scores. A three category typology reveals a spatial-structural order to the personal networks. In support of the survey data, most interview sample networks are also cohesive and localised. The final part of

Chapter 4 seeks to interpret the structural-spatial typologies in terms of class and locality effects.

The main purpose Chapter 5 is to explore how ideational categories of cohesion are linked to structural and spatial forms of cohesion. I address how resident attitudes and practices are framed in the context of network structure (RQ.3) and assess whether there is any pattern to diverse experiences of cohesion (RQ.4). In the first section, a principal components analysis of survey attitudes and practices is conducted to yield a simplified set of ideational constructs of cohesion. The second section uses a two-mode social network of ideational constructs and structural-spatial types to explore affiliations between attitudes, practices and network structures. The final section maps qualitative narratives on to the structural-spatial typologies. I illustrate how residents have different interpretations and experiences of urban cohesion yet again, these are not fluid or random, because ideational categories are 'framed' in the context of personal network structure. Three types of framing are found and illustrated; divergence, homophily and inconsistency. I argue that attitudes and practices are formed in the structural and spatial context of personal networks, and therefore, individual actions and normative practices are also constrained by these networks.

Chapter 6 reflects on the findings of the empirical chapters and extracts some theoretical ideas relating back to the broader literature. In this penultimate chapter I ask, *what are the consequences of this interplay between structural, spatial and ideational cohesion? Particularly, how can we theorise the effects of urban cohesion and fragmentation in terms of social capital and social action?* (RQ.5). The chapter begins by presenting the key theoretical issues stemming from the empirical data. The second part of the chapter argues that urban cohesion should not be studied as 'area effects' because social networks are relational and transcend neighbourhoods. The third section argues for a relational spatial paradigm for social capital, proposing that bonding, bridging and linking networks between residents have different functions. I argue that the distribution of these different types of ties across urban space has implications for neighbourhoods and individual residents and theorise about thresholds and balances of social capital in space, particularly, whether too much or too little of certain types of network ties may be beneficial or detrimental. Next, the chapter makes sense of the link between network

structure and ideational constructs through a presentation of the different roles residents play in contributing to urban cohesion in their locality. I argue that these different resident roles are complimentary and fit together to provide cohesion in urban space. The theoretical implications of these urban roles are discussed with reference to literature on community and society.

Chapter 7 concludes the thesis by first proving a brief summary of findings, followed by a discussion of the argument and general themes arising. This chapter also highlights the relevance of the work in terms of theoretical importance and practical impact. Finally, some closing comments are made about potential for future research and outlook.

Hopefully, this introductory section has set the scene for the research. We will now open with the first main Chapter of the thesis, *Urban Cohesion and the ecology of personal networks*, for a review of relevant literature.

Chapter 1: Urban cohesion and the ecology of personal networks

Chapter overview

This chapter presents a theoretical frame for the thesis through a critical analysis of key literature relating to spatial, structural and ideational forms of urban cohesion. The scope of contributions is wide and an attempt is made to provide a succinct review of the most central pieces of literature, whilst also investigating research gaps to set the scene for the empirical sections of the thesis.

The first section provides a definition of 'cohesion' between residents based upon the interplay between the three forms of cohesion; spatial, structural and ideational. A critical discussion of the concept of 'cohesion' in policy research is provided, illuminating its change of definition over time and between contexts. I also argue that that urban cohesion research has tended to focus upon individual level ideational variables over explicit network paradigms, which has resulted in an ideational versus relational divide. The second section of the chapter explores cohesion in social and geographic space. I examine how social conditions might influence the spatial patterning of ties through effects of propinquity and social distance. Section three focuses on the overlap between structural and spatial cohesion, particularly the relationship between density and spatial dispersion and the effects this has upon patterns of interaction. The fourth part of the chapter focuses on ideational aspects of cohesion, particularly on the link between attitudes, practices and network structure. Section five turns to the consequences of the interplay between spatial, structural and ideational cohesion, through a critical analysis of debates on community, social capital and social action. The key points of the chapter are presented in the summary.

Argument: limitations of current research

Before beginning the review of literature, it may be helpful to clarify the arguments advanced in this chapter. These can be briefly summarised in four short points.

The first point is conceptual. Cohesion between residents has three ontological dimensions: spatial, structural and ideational. To understand cohesion in urban situations we must use a

relational framework that studies spatially contextualised social networks alongside an analysis of ideational factors. Previous studies have chosen an 'either or' approach to studying network structure and ideations. Moreover, scant attention has been paid to the geographic contexts in which resident interactions, attitudes and practices occur. Further research is needed on the overlap between these three forms of cohesion.

The second point is empirical and concerns the patterns resulting from the interplay between spatial, structural and ideational forms of cohesion. Past research has revealed a relationship between structural and spatial cohesion in personal networks, in particular, that high density is often linked to network localisation. However, it is still unclear how these structures produce or are produced by social effects such as homophily and social distance in urban contexts. Studies have also shown ideational factors to be linked to personal network structure because normative attitudes and habitual practices are formed and reproduced in network contexts. This work needs updating to focus on the link between ideational constructs of urban cohesion and personal network structure.

The third point is that research has been shifting away from face-to-face relations and toward electronic and mobile relationships. This has also meant that more attention has been given to mobile middle-classes over low income groups. It is therefore unclear to what extent personal networks differ between urban contexts of varying levels of affluence and deprivation and whether class and locality effects are still important. Will personal networks in this resident sample be fluid, chaotic and spatially dispersed or stable and localised?

Finally, there has been a lack of research into the actual consequences of spatial, structural and ideational patterns of cohesion and fragmentation in resident networks. It is not enough to describe resident interactions as cohesive or fragmented or to analyse cohesion in terms of collective attitude structures; these issues must be joined together in order to study the implications of networks, attitudes and practices in urban space. To support a spatial theory of social capital that highlights different capabilities for social action in deprived urban contexts, further research is required on the impact of cohesion and fragmentation.

1.1 Defining cohesion and fragmentation between residents: the interplay between spatial, structural and ideational contexts

Various terms have been used to describe bonds between residents in cities, for example, 'social cohesion', 'community cohesion' and 'urban cohesion'. The terms 'urban cohesion' and 'cohesion' are used in this thesis to denote networks of interaction between residents in urban space. Logically, the absence of these network relations results in situations of urban fragmentation. This thesis is centred upon the idea that networks of interaction between residents can provide important and thought-provoking insights into patterns, forces and consequences of urban cohesion and fragmentation. Nevertheless, capturing the processes of cohesion is difficult precisely because these interactions are complex. As a result, researchers have struggled to define and measure cohesiveness between residents because it is a multi-dimensional and multi-level concept (Kearns and Forrest (2000).

Cohesion between urban residents or 'urban cohesion' is frequently referenced as a theoretical construct, rather than also being grounded in empirical research. Urban cohesion can be identified structurally through empirical analysis of ties between individual residents, however these social network structures are also spatial, because interaction is physically embodied and grounded. Cohesion and fragmentation in urban space can also be illustrated using ideational factors, such as shared attitudes and practices that bond individuals into groups. In this sense, cohesion is a socially binding structure and something that residents not only 'do', but as social agents, they interpret and experience. Subsequently, structures of cohesion can be simultaneously participative and constraining. Resident cohesion is not locally bounded and cannot be studied atomistically, rather it should be conceptualised through relational, co-constructed networks within and between neighbourhoods with structural changes in one part of a network likely to have effects elsewhere (consider, for example, the ramifications of migration and neighbourhood renewal).

This thesis tries to simplify the complexities of urban cohesion by breaking the concept down into the three constituent forms: structural cohesion measures the degree of connectedness in a personal network, spatial cohesion refers to the extent of network localisation (whether alters

live nearby or at a distance from ego) and ideational cohesion describes similar patterns of attitudes and practices between residents. Structural and spatial cohesion are relational variables captured through social network properties, such as density and spatial dispersion. On the other hand, ideational cohesion is better gauged at the individual level through a set of survey or interview questions and then aggregated to identify patterns of similarity or difference between groups. The next sections discuss the concept of cohesion further: first, examining its use as a political construct which privileges individualistic ideational data over the relational data of networks and second, in reference to academic debates on community and social capital.

A policy gamut

In the United Kingdom, politically driven notions of cohesion between residents have been linked to discourses of 'civic participation', 'community engagement' and 'integration', juxtaposed with messages of 'accepting diversity' and 'multiculturalism' (Department for Communities and Local Government, 2009). Whilst cosmopolitanism is being embraced by mobile urbanites who are high in cultural capital, it has confused and alienated significant proportions of residents living in areas of deprivation in the United Kingdom. In localities with high ethnic clustering and deprivation there has been public resentment by some white residents against political strategies that seek to promote multi-ethnic cohesion. Whilst forms of cohesion that are respectful of social and cultural difference are to be championed, this has been a difficult policy to sell against a backdrop of local immigration influxes and socio-economic deprivation. There may also be social network factors at play that resist population change. It is arguable that stable, closed and homophilous networks that are impervious to extra-neighbourhood influences are more likely to be found in deprived neighbourhoods where residential mobility is low and homogeneity is high. Accordingly, policies on 'urban cohesion' must be re-framed to be meaningful and resonant in local neighbourhood contexts.

As well as being ambiguous, politically driven notions of cohesion have also been specifically targeted at sub-sectors of the populace. Priorities for improving resident cohesion have been determined by the political climate with responsibility often resting with specific socio-economic, ethnic and/or religious groups, for example, 'co-operation' between Catholics and

Protestants in Northern Ireland, 'integration' of Muslim and non-Muslim residents in the North of England post September 11[th,] and acceptance of 'diversity' by white residents of deprived localities. Public policy notions of cohesion between residents claim dual effects. Striving toward cohesion is affirmed as positive for residents of heterogeneous neighbourhoods; whilst in homogeneous environments cohesion is blamed for ghettoization. Hence political commentary on resident social networks confirms observations of 'too much' or 'too little' cohesion whilst there remains a rhetorical vacuum circumventing the issue of what lies between. This has led to generalised discussions about urban cohesion, social networks and neighbourhoods abstracted from specific socio-spatial contexts. In September 2005, Trevor Philips, Chair of the Commission for Racial Equality, delivered a speech to the Manchester Council for Community Relations claiming that in British towns and cities we were "sleepwalking our way into segregation". It was widely agreed that the race riots in Bradford, Oldham and Burnley in 2001 were related to high levels of ethnic segregation but less was said about the context of deprivation in which these segregated networks operated. The onus of responsibility has therefore rested upon on heterogeneous sets of residents to become integrated whilst the underlying issue of urban social inequality was swept aside.

These abstruse politically motivated notions of urban cohesion have resulted in a spectrum of operationally problematic interventions. These strategies have been limited on two fronts: firstly, there has been a lack of proper engagement with social network theory and methods, and secondly, inadequate attention has been paid to the combined role of geographic space and socio-economic deprivation in embedding structures of cohesion and fragmentation.

Incredibly, though the language of 'social networks' and 'social capital' have become part of political white papers, analysis of these processes are not built into or captured through policy research. Social Network Analysis has been endorsed as a practical way of empirically investigating the real structural essence of ties rather than basing policy ideas upon conventional constructions of social and spatial solidarities (Bridge, 1995, 2002). Still, policy interventions are at odds with social network paradigms because they do not fully account for the structural processes of social interaction nor do they properly acknowledge how structural and spatial cohesion in networks creates social closeness and distance between individuals, for

example, through residential homophily. Stanley (2003) is critical of politically induced cohesion strategies that favour interaction between heterogeneous groups instead preferring 'cooperation without coercion' where social difference is not a prerequisite for 'positive' interaction. Some argue that cohesion may result from rational choice or affective commitment (Hetcher, 1987; Heise, 1998), yet this underplays the influence of structural constraints upon social action. For example, homophily is a powerful force underpinning much social interaction (McPherson, 2001) and this dynamic is problematic to those claiming that increased interaction between heterogeneous groups is necessary for the reduction of crime and disorder (Bellair, 1997; Desmond, 2010; Warner & Rountree, 1997).

Macintryre and Ellaway (2003) call for a move away from the 'context' versus 'composition' debate in urban policy literature, the extent to which spatial variations in localised practices are produced by resident compositions or area effects. Instead the authors argue that research needs to recognise the relational ties between residents and neighbourhoods, a link they describe as a 'mutually reinforcing and reciprocal relationship' (Macintryre and Ellaway, 2003: 26). In a very recent British study using regression analysis on two consecutive waves of the Citizenship Survey Bécares *et al* (2011) found that increased local deprivation was associated with a decrease in ideational cohesion between residents (using indicators of trust and respect for diversity). Socio-economic deprivation was claimed to be the key driver for this reduction in ideational cohesion, yet cohesion between residents was high where there were dense pockets of white ethnic homogeneity (Bécares *et al*, 2011). This thesis contributes to these findings by focusing on a sample of white residents to explore the effects of homogeneity and deprivation on urban cohesion, but rather than focus only on ideational indicators of cohesion this study will also map the spatial patterns of resident social networks. In this sense, urban cohesion is gauged through interactive as well as ideational dimensions of analysis.

Lastly, political interventions tend to presuppose the existence of 'community' or local solidarity and then make subsequent claims about the types of communities that should be 'built' or 'sustained'. In addition, spatial dimensions of cohesion are misconstrued. Artificial boundaries of cohesion are often encapsulated at the administrative neighbourhood level, without proper acknowledgement to the effect of ties transcending geographic boundaries. The

'neighbourhood' is conveniently assumed to be the only spatial context in which 'cohesion' should and does occur, so bonding ties within neighbourhoods are privileged over ties which connect neighbourhoods. In reality, cohesion between residents is not spatially bound (Wellman & Leighton, 1979: 80-81). Residents of the same neighbourhood may have different network structures; those with localised ties may feel a sense of community, whereas residents with spatially dispersed networks may be less embedded (emotionally and practically) in the neighbourhood. The overlap between these spatial, structural and ideational dimensions of urban cohesion has not been fully conceptualised in terms of implications for academic and policy initiatives and this will be the overarching focus of this thesis.

Ideational and relational data

There has been some academic debate on whether certain types of data are valued and privileged over others in studies of cohesion. Doreian & Fararo (1998) argue that individualistic ideational indicators (such as attitudes, practices, motivations and values) are favoured over the analysis of network structure in studies of cohesion in academic, governmental and organisational fields. They add that this epistemic privilege of social categories over structural analysis has paved the way for an ideational versus relational divide in cohesion research. Moody & White (2003) advance a similar argument through their discussion of social versus relational solidarity. Like Doreian & Fararo (1998), they argue for the analytical division of the study of cohesion into two measures, an ideational component and a relational component and then further distinguish between 'social' and 'structural' forms of cohesion. They define 'social cohesion' as the realm of the ideational component measured by individualistic indicators such as attitudes and practices whereas structural cohesion is gauged through social network measures yielded from relational data. Nonetheless, despite epistemic tensions between studies of cohesion, Scott (2007: 3) points out that within the field of Social Network Analysis itself, 'techniques for the analysis of ideational data are less well developed than those for attribute and relational data despite their centrality to the social sciences' and, with reference to Layder (1992), urges that ideational methods be further developed in the field of SNA.

In the United Kingdom, social network terminology is frequently woven throughout policy documentation on neighbourhood cohesion despite the featured conclusions being based upon individualist-level data analysis and at the complete avoidance of relational data. Ideational indicators are commonly found in resident surveys, for example, the *Citizenship Survey* and its accompanying output reports featured questions on place attachment, perceptions of crime, engagement and civic activity (Heath and Lawrence, 2008). In addition to surveying attitudes and values on topics as wide as gun control, sexual behaviour and altruism, the General Social Survey also asks questions about the respondent's 'core discussion' network, particularly the socio-economic attributes of alters and the structure of alter-alter ties to capture network density (Smith & Marsden, 2011). This survey design is more effective in evaluating resident cohesion because it triangulates data types, allowing researchers to develop propositions about how variance in ideational compositions may be related to structural outcomes.

The use of categorical attribute analysis in surveys feeds in to debates about whether urban cohesion is a cause or consequence (independent or dependent variable) of wider aspects of social and economic life. Such questions are particularly significant for researchers interested area effects or distinctions between social groups. In a comprehensive research audit, Beauvais & Jenson (2002: 4) state that in most research cases, correlations are found over causality, implying that there should be 'an increasing tendency to interpret social cohesion in interactive rather than unidirectional relationships'. This implies the need for a move away from causal analysis in favour of relational perspectives. For a variety of reasons, notwithstanding the logistics of data collection, resident cohesion is more often gauged at the aggregate individual level than it is captured through relations. In support of Scott (2007), Kilduff (2005: 10) argues that even in the general remit of social network research:

> there seems to be a structural hole between those who focus on networks and those who focus on the attributes of individuals. In bridging this structural hole, we address issues of individual differences from a network perspective.

Indeed, there is room for a combined relational-ideational approach. Additionally, in some circumstances more than others, attention to the spatial contexts in which these networks, attitudes and practices are embedded may also be instructive. Attempts in this thesis to unite

relational and ideational data types and paradigms may, therefore, be a welcomed contribution to existing literature on cohesion in urban social networks.

This first section of the chapter has discussed resident cohesion through academic and policy debates. It is clear that in addition to the notion of 'cohesion' being ambiguously defined, measures to capture this concept are also variable. The next section turns to explore literature on the relationship between social and geographic space.

1.2 Geographic and social space

This section of the literature chapter turns to explore the influence of space upon urban cohesion and addresses the first research question; *how are resident interactions organised in social and geographic space? How salient are geographic propinquity and social distance in contemporary personal networks?*

In this thesis, the notion of 'space' is conceptualised as both social and geographic. It is argued that these social and geographic elements of space cannot be separated in the analysis of cohesion as they are embedded and embodied in one another. This chapter section is divided into three parts. The first discusses the inter-relationality between geographic and social space. How are geographic and social dimensions of cohesion interrelated? Does geographic cohesion indicate social closeness? The second explores the notion of social distance and the resulting effects of spatial fragmentation. The third part refines the debate toward a discussion of the links between spatial dispersion and density in personal networks. The nature of network embeddedness versus mobility is discussed, particularly in reference to the effects of technology and mobility upon contemporary networks.

Propinquity, social similarity and network 'foci'

Both social and geographic distances have been proposed to effect dynamics of cohesion and fragmentation in networks of individuals. Geographic propinquity is often cited as a stimulus for clustering dynamics in networks based on assumptions that interaction is more likely

between people (or units) that are physically proximate (so reachable/available) and/or socially similar (the homophily effect). Interdependency exists between these two principles because geographic proximity is thought to induce social similarity and vice-versa. Tobler's theory of spatial autocorrelation re-states this by invoking 'the first law of geography: everything is related to everything else, but near things are more related than distant things' (Tobler, 1970). Based on theories and models of social-spatial gravity, the theory posits that for any sort of interaction to occur (social, biological, physical and chemical), proximity between units is key (Tobler, 1975; Kennedy and Tobler, 1983; Tobler, Mielke et al., 1970; Tobler and Wineburg 1971). Subsequently, spatial autocorrelation has been widely applied in interdisciplinary fields studying socio-physical ecologies, including, in housing economics (Dubin 1998), migration (Dorigo and Tobler, 1983), biological ecology (Sokal and Oden, 1978; Dormann, McPherson et al. 2007).[2] Evidence of the contact hypothesis, where geographic propinquity influences tie formation, was provided in several early studies (Festinger, 1950b; Festinger, Schachter and Back, 1950; Sherif, White & Harvey, 1955). Festinger *et al* (1950) found physical proximity to be a determinant of friendship choices of college students co-habiting in university campus dorms. In a later study, he also argued that interaction evolved between neighbours because of geographic propinquity but irrespective of social similarity (Festinger, Schachter and Back, 1950).

But does geographic propinquity really draw residents together in the absence of social drivers? *To what extent can different forms and experiences of cohesion be found within a socio-economically similar (white, deprived, urban) sample?* Geographic factors are certainly still important in the formation and sustenance of contemporary personal networks, particularly so for disadvantaged groups, but there is likely to be an underlying social impetus drawing homogeneous groups together and heterogeneous groups apart. Social and physical elements of space interact to produce network 'foci', which 'actively bring people together or passively constrain them to interact' (Feld, 1981: 1018). This is one reason why we might find homogeneity in neighbourhoods. People may live nearby to each other because of similar

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[2] Spatial autocorrelation models have been criticised as problematic for statistical analysis because auto-correlated data violate independence assumptions (Legendre 1993).

incomes, culture or shared historical links, such as intergenerational ties and residential locality acts as a marker of distinction (Butler and Robson, 2003; Savage, 2005). The draw of 'foci' may be particularly powerful in deprived localities where residents have low economic and cultural capital and the population is stable and non-gentrified. Gans (1962) was critical of urban renewal for disrupting stable local networks in areas not accustomed to sudden social change. He posited that geographic proximity between residents would be less of a catalyst for interaction in heterogeneous neighbourhoods than in homogeneous neighbourhoods, because social factors override geographic constraints so in the former residents would seek-out relations beyond the locality based on homogeneity. In a study of resident personal networks in four urban neighbourhoods in the mid-western United States, Greenbaum and Greenbaum (1985) found that propinquity effects were more pronounced in the spatial distribution of social relationships in heterogeneous neighbourhoods, than in the homogeneous neighbourhoods. They argue that proximity does not determine interaction but acts as a 'basic foundation' for ties that develop between homogeneous residents sharing local space (Greenbaum & Greenbaum, 1985: 72):

> the greater frequency of distal ties in homogeneous neighbourhoods suggests that "choice" (in the sense of ties maintained in spite of face-to-face daily contact) may constitute an added factor in those settings where more people share similar backgrounds and experiences.

In a sense, though localised 'foci' exist to draw people together; residents of different neighbourhoods may come together on the basis of shared experience or other forms of social similarity. It seems that although geographic space provides a focus and context for cohesion between residents to occur, social factors are actually the driving motivators of network evolution (Gans, 1975, 1982; Greenbaum & Greenbaum, 1985; Wellman & Leighton, 1979).

One social factor cited as producing visible spatial outcomes is social similarity, where 'birds of a feather flock together' in urban space (McPherson, 2001). Moreno (1947) describes "social gravity laws" of migration as "basic preference systems"; a network dynamic now more commonly known as homophily. For Moreno, human interaction networks consist of forces of cohesion and fragmentation visible in physical space:

According to my formulation, the movements of populations are propelled by two processes. One process draws the groups apart; the other process draws the groups together….People (P_1) and People (P_2) move towards each other in direct proportion to the amount of attraction given (a_1) or received (a_2), in inverse proportion to the amount of repulsion given (r_1) or received (r_2) and in inverse proportion to the physical distance (d) between locality X and locality Y, the residences of P_1 and P_2 respectively, the facilities of communication between X and Y being constant.[3]

He argues that pull and push processes of social attraction between groups cause similar individuals to live near one another. Similarly, Schelling's (1971, 1978) models of resident segregation are spatially contextualised, based upon preferences for similar neighbours and leads to the emergence of spatial clustering. The theoretical paradigms of Schelling (1971, 1978) and Moreno (1947) differ from Festinger *et al* (1950) because of the proposed direction of causality. Festinger *et al* (1950) claim that it is propinquity that induces cohesion between individuals; Moreno and Schelling argue that social attraction (based on social similarity/homophily) causes groups to become cohesive and propinquitous in geographic space. Additionally, the type of tie may be important in understanding social and spatial tie patterns. Geographic propinquity matters for the establishment and maintenance of long distance ties and, as a consequence, people are less likely to name those living farther away as 'close friends' (Martin and Yeung 2006). Consequently, nearby contacts may be more similar than those who live at further distances further reinforcing the combined power of geographic propinquity, foci and homophily in constraining networks in physical space. The relevance of this proposition may have class effects (for example, individuals who are mobile and affluent will be better able to act out homophily at distances than would those low on economic and cultural capital resources). Without using the terms explicitly, Moreno and Schelling discuss the relationship between social distance and geographic distance, with the latter incorporating agency through models of choice or preference.

The cause-effect relationship between social similarity, networks and geographic space are still unclear. However, the interrelation between spatial and social factors in network evolution is

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[3] Roman numeral I changed to 1 for consistency with P2.

obvious and this relational perspective seems to be a more salient paradigm than those pitching the importance of one dimension against the other. From this literature, we may establish the proposition that cohesion between residents is induced by both geographic propinquity and social homophily, the relative significance of either factor is generally unknown and instead determined by specific contexts. This raises a key issue for further research, particularly where the context is deprived neighbourhoods. Geographic propinquity encourages interaction between residents through accessibility but social factors, such as homophily, underlie the motivation to draw networks of similar people together. The different research findings suggest that the effects of geographic propinquity and spatial dispersion are not universal and may be context-dependent. Patterns of interaction must be interpreted in a nuanced, sensitive, case-specific manner. The next section explores social distance in more detail.

Social distance and spatial fragmentation

Social distance describes the extent to which groups in a society can be described as fragmented or cohesive, usually based on empirically mapping or assessing their likelihood for interaction. It captures the extent to which groups are located at dissimilar positions in social space, whereas social closeness occurs when individuals are located similarly in social space.

Consulting relevant literature, we may see that social distance has been conceptualised and measured in a variety of ways. Borgadus (1947) offered a social distance scale based on the willingness of individuals to participate in various affective social relations with members of other social groups, for example, marriage, friendship, neighbour, co-worker, citizen. However, attribute similarity has also been used as a proxy for closeness in 'social space' and thus as a determinant of interaction. This perspective assumes a preference for like to associate with like and uses individual-level attributes as markers of social closeness, such as socio-demographics like class, ethnicity and religion (Sorokin, 1927, 1943; Merton, 1968) or ideational attributes such as shared attitudes, values and practices (Roswell, 1995; Maxwell, 1996; Putnam, 1995). Others have modelled social distance dynamics combining socio-economic and ideational categories of attribute similarity with network theory (Krackhardt and Stern, 1988; Louch, 2000; Yuan & Gay, 2006; McPherson, 2001; Fischer & Oliker, 1983; Pugliesi & Shook, 1998). This type of analysis places individuals as close in social space if they share common attributes or ideations and is

based upon an assumed priori causal relationship between homophily and social interaction. Blau (1977a, 1982) takes a different approach and utilises relational data to guide observations of social distance. Unlike measures focused on willingness to interact or social attributes, Blau measures interactive social distance, arguing that empirically mapping networks of relations can identify concrete patterns of social closeness and distance, with an absence of networks between groups indicating social distance (Blau, 1977a: 32). This method is useful for more inductive studies of cohesion between urban residents wishing to illustrate, a posteriori, social closeness or distance. Indeed, Hipp (2010: 150) argues that:

> when considering the effects of social distance in a larger geographic aggregation, incorporating a network perspective provides more insight than simply considering the average level of social distance.

The analysis of this thesis will be principally informed by Blau's definition. Social distance can be empirically evidenced where few ties exist between residents. Here, observing the network structure of cohesion, the presence or absence of resident ties, may guide our analysis further. Other supplementary analysis of social closeness and social distance will be based upon ideational cohesion, the social structuring of attitudes and practices relating to urban cohesion.

Social distance dynamics are visible as clustering or stratification in cities. Chicago School theorists recognised network fragmentation as a physical manifestation of social distance which was most obviously displayed in urban environments. Park (1925: 40) described socio-spatial clustering as a natural formation in the ecology of the city, 'a mosaic of little worlds which touch but do not interpenetrate' and a process whereby the sorting of social groups in physical space could occur. Localised feelings of social distance in deprived areas can create tensions. Studies have consistently found that local perceptions of social distance are associated with reduced neighbourhood satisfaction (Adams, 1992; Davis & Fine-Davis, 1981; Sampson, 1991, Ross et al, 2000; Parkes et al, 2002; Merton, 1968; Hipp & Perrin, 2006 & 2009; Rountree & Warner, 1999; Sampson & Groves, 1989).   However, these issues are not so prominent in gentrified, affluent areas. This echoes the findings of other research (Gans, 1982; Greenbaum & Greenbaum, 1985; Wellman & Leighton, 1979) and calls into question generalised statements and policies on urban cohesion. The economic context of deprivation is crucial, as is the

competition for capitals and resources (Bourdieu, 1999) and in this thesis, it will be interesting to explore the different ways cohesion plays out in situated context.

Following the Oldham and Burnley race riots in 2001, the Cantle Report, 'Building Cohesive Communities' was published by the Home Office Independent Review on Community Cohesion. The report describes contemporary urban social distance and spatial fragmentation in the United Kingdom using language that is analogous to that of the Chicago School theorists in the United States:

> Whilst the physical segregation of housing estates and inner city areas came as no surprise, the team was particularly struck by the depth of polarisation of our towns and cities. The extent to which these physical divisions were compounded by so many other aspects of our daily lives, was very evident. Separate educational arrangements, community and voluntary bodies, employment, places of worship, language, social and cultural networks, means that many communities operate on the basis of a series of parallel lives. These lives often do not seem to touch at any point, let alone overlap and promote any meaningful interchanges (Cantle et al, 2006: 9).

Propinquity and homophily do not only influence the position of individuals and groups, but also non-human objects. In a study of spatial units in Norman City, Oklahoma, (Myint 2008) it was found that functional economic units (shops, banks, eateries) cluster together in physical space, whereas social and political functional units (such as churches and schools) repel. As spaces take on social characteristics, the Chicago School theorists claimed that neighbourhoods were representative of the behaviour and attitudes of residents. The moral character of an individual was envisioned to be encapsulated within, and inherently influenced by, the physical residential environment (Burgess, 1925, 1967; Park, 1925). These assumptions are still prevalent today and evident in associations between 'poverty' and 'roughness' (Watt, 2006). The Index of Multiple Deprivation (as well as other national datasets) reveal spatial concentrations or 'pockets' of deprivation, crime and other societal inequalities supporting claims that inequality is socially and spatially clustered. Yet, although there are some elements of homogeneity within neighbourhoods, there will also be diversity (Skeggs, 1997; Rhodes, 2011), particularly for this thesis, variance of network structure and ideations. We cannot assume a 'flatness' of social life in deprived localities reduced to a simplistic view, devoid of

character and complexity. Though openly concerned with structure, this thesis attempts to move from accounts of homogenised experience and practice. A principal aim of this thesis will be to uncover variant network structures, experiences, attitudes and practices of cohesion within an apparently socio-economically similar sample of white residents of deprived localities.

The term 'social distance' is part of a sociological discourse of stratification that makes use of a spatial metaphor (Bottero, 2005). Yet this metaphor is usually applied to social space, not physical space. To extend Blau's ideas, networks between residents can be mapped in social and physical space to produce insightful results. Spaces are expressions of identity, hierarchy and relations of power which can constrain or enable social change (Massey, 2005). Patterns of social relations are "space-forming" (Soja, 1989: 126) and geography is able to make visible the consequences social network structures (Onnela et al, 2010). Space is, therefore, not just a passive backdrop to human interaction but is constantly produced and reproduced as groups struggle for power (Skeggs et al, 2004). If social distance is extreme it may create a sense of inequality and defensiveness by groups perceiving themselves as disadvantaged (Hipp, 2010; Bergesen & Herman, 1998). Given the significance of physicality and embodiment to the patterning of social networks, there is no reason why the metaphor of social distance should not be operationalised to encompass a spatial dimension conducive to Social Network Analysis. Adding a geographic element to such analysis may spur provocative research avenues. Indeed, this thesis seeks to map the patterns of relations between residents in urban space, chiefly to identify cohesion and fragmentation across the city and to illustrate instances of residential homophily.

In summary, positions of closeness and distance are central to the discipline of sociology, though traditionally with an emphasis on the social over the socio-spatial. It is hoped that conceptualising the interdependent nature of social and geographic 'space' may provide a deeper understanding of the complex processes underpinning resident social networks. In particular, the empirical chapters will utilise Blau's ideas to map cohesion and fragmentation between residents in urban space and flesh these structures out using qualitative narratives on social closeness and distance.

1.3   Structural and spatial cohesion

Previous sections of this literature review chapter have discussed the overlap between social and spatial factors in relation to urban cohesion, we will now shift track to explore the link between structural and spatial cohesion, addressing research question 2, *how structurally cohesive are these resident networks? Is there a relationship between density (or connectedness) of personal network structure and the dispersion (or spread) of the network in geographic space?*

Network density and spatial dispersion

In this thesis, structural cohesion describes the shape or form of a personal network in terms of its connectedness and uses relational data is used to map connections between residents.[4] Descriptively, high structural cohesion has been likened to '*'dense, intimate relations among members embedded in a social group or closed social circle'* (Knoke & Yang, 2008: 72).   It can also be more formally defined in relational terms as the *'strength of the link density among subset members'* (Degenne & Forse, 2007: 78). The density of a graph is probably the most basic index of cohesion and is endorsed as a measure of group cohesiveness representing the strength of intra-group ties (Blau, 1977b).[5]

Density measures were central to early anthropological studies aiming to understand the extent to which the social networks of groups in society were close-knit or loosely arranged, for example, of Andaman islanders and Australian tribes (Radcliffe-Brown, 1922, 1931, 1940); Norwegian villagers (Barnes, 1954, 1969); Rhodesian urbanites and Malawian tribes (Mitchell, 1956, 1966, 1969); the Italians of Montreal and patron-broker-client relations between Maltese villagers (Boissevain, 1970, 1974). Curiosity toward personal networks within towns and cities

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[4] In Social Network Analysis literature, the structural form of networks may be referred to as 'social structure' or described in terms of 'social cohesion', but these terms are also commonly used to describe structure or stratification resulting from individualistic variable data (i.e. different positions of class groups). This thesis distinguishes between ideational (social), spatial and structural elements of networks, in order to highlight the multi-dimensional nature of urban 'cohesion'. In this thesis, 'structural cohesion' is used to denote relational aspects involving network connections between resident actors, whereas, 'ideational cohesion' deals with the collective structuring of attitudes and practices (see the glossary of terms for further discussion).

[5] See also the E-I Index (Krackhardt & Stern, 1988).

continued through several seminal pieces of urban research, most notably, Bott's London families (1957), Laumann's study of white males living in Detroit (1973), Wellman in East York, Toronto (1979) and Fischer on Chicago residents (1982). Moreno's early work on graph theory even involved attempts to map links between the entire population of New York City (Moreno, 1934).

Wasserman and Faust (2007: 251) state that there are multiple ways to gauge structural cohesion in networks:

> the general property of cohesion among subgroup members [is] based on specific properties of the ties among the members. However, since the property of cohesion of a subgroup can be quantified using several different specific network properties, cohesive subgroups can be formalised by looking at many different properties of the ties among subsets of actors.

The essence of Wasserman & Faust's interpretation of structural cohesion rests upon drawing on a mixture of measures to assess network structure at different levels. In the main, these comprise of: degree (to assess the number of adjacent nodes to an ego-node); components (maximally connected subgraphs); and cliques (strictly maximal and complete subgraphs of three or more actors), see Wasserman & Faust (2007: 253-256). Although Wasserman & Faust make this statement with regard to the analysis of whole-networks (thus the subgroup focus), it can also be applied to the study of cohesion across a sample of personal networks. This thesis makes use of these multiple measures to analyse tie formations across a sample of urban personal networks and from this we may obtain an indication of structural cohesion in North Manchester resident interactions.

Despite the inherent value of Social Network Analysis for assessing cohesion, as discussed earlier, individualistic indicators have tended to be favoured over structural analysis (Doreian & Fararo, 1998). Such methodological favouritism is perhaps unsurprising given the resource-consuming nature of network data collection, but gauging cohesion merely through attitudes and values provides a misleading image of social relationships that does not provide a relational account of social structure. Subsequently, some academics have operationalised Putnam's concept of social capital based upon graph theoretic properties so that Social Network Analysis can be applied to measure structural cohesion. (Burt, 1978; White, 1998; White &

Harary, 2001; Moody and White, 2001, 2003). Taking Putnam's notion of 'social glue' (Putnam, 2001: 3), Moody & White (2003: 126) produce a scaled measurement of relational structural cohesion:

> The paths that link actors are the relational glue holding them together. We show that structural cohesion scales; in that it is weakest when there is one path connecting actors, stronger when there are two, stronger yet with three, and finally when, for the n actors, there are almost as many (n-1) independent paths between them. As such, we have identified an essential dimension upon which structural cohesion rests. Namely, that for a group to be cohesive it cannot be easily separated. Thus, the essential substantive feature of a strongly cohesive group is that it has a status beyond any individual group member.

Here, structural cohesion increases with the establishment of each additional independent path in a social network and achieves a maximal n-1 independent paths for n actors when all actors are directly connected in a clique. At this point, the 'distance' between network actors is at an absolute minimum because connectivity is optimal.[6]

Of course, network structure is not just social; there are spatial implications to structural cohesiveness. In particular, space matters for tie intensity; strong ties are most likely to be dense and localised, whereas weak ties can be sparse and geographically dispersed (Granovetter, 1973; Putnam, 2000; Martin and Yeung, 2006). Epidemiological research has demonstrated the importance of structural and spatial cohesion between network nodes as structural embeddedness becomes strengthened locally through processes of triadic closure (Rothenberg et al, 2005; Zenilman, et al, 1999).

Spatial dispersion and density are useful measures of assessing the geographic and structural range of a resident's immediate social world, but the link between density and spatial dispersion is perhaps context-dependent and also mutually reinforcing. Bott (1957) was unable to link network structure with ideations but did provide exemplary insight into the relationship between social network structure and class using empirical data on 'ordinary' married couples

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[6] White and Harary (2001) build on Moody & White's (2001) early draft paper by providing a ratio measure of structural cohesion that integrates network density and edge-connectivity with node-connectivity that distinguishes between levels of cohesion *within* given levels of *k*-connectivity.

in London. She revealed that families with close-knit networks were more likely to be working class, with the caveat that not all working class families had dense networks. Spatial dispersion and density appeared to be the result of lifestyle variances affecting how individuals organised their social relationships and daily activities across space. Bott (1971: 121) argued that most working-class participants had little demand for physical mobility and low opportunity for social mobility, with predominantly homogeneous networks with residents of similar occupational status, property tenure and neighbourhood residence. Similarly, Laumann (1973) found that the long-term local residency of lower class groups resulted in dense, geographically clustered networks caused by the recurrent intersecting of multiplex relations within localised contexts. More recently, Atkinson & Kintrea (2001) found an association between network localisation, high density and homogeneity in deprived localities in the United Kingdom, noting that:

> The local neighbourhood is an important source of social contact through mechanism of spatial proximity, residents are likely to have more contact with nearby residents than they are with those who live further away…. In predominately poor areas, residents necessarily associate mainly with people like themselves (Kintrea and Atkinson, 2001: 10).

Wellman (1979) also studied urban personal networks, focusing on residents of East York, Toronto. Wellman concluded that on average half of all ties recorded were kin (supportive relations) with the remaining ties being important for sociability, primarily consisting of friends, co-workers and co-residents (Wellman, 1979: 1217). He also analysed the physical organisation of social ties in an exploration of the 'community question' in East York. Wellman found that most residents (regardless of class and income) had sparse, spatially dispersed networks transgressing beyond the boundaries of their home neighbourhood, so argued that modern communities had become liberated from the constraints of space (Wellman, 1979; 1996, 2001; Wellman & Leighton, 1979). Drawing on Wellman & Leighton's (1979) definition of network as personal community, Blokland *et al* (2003) found that the locality of Hillesluis, the Netherlands, was not a community because resident interactions transcended geographic space; community was found in personal networks rather than the spatial confinements of the neighbourhood. Likewise, using a snowball sample of 307 personal networks, Frei and Axhausen (2007) found that the networks of Zurich residents were spatially dispersed; with two-thirds alters living within twenty-five kilometres of ego, rather than being confined to the

local area. More recently, Bridge (1995; 2002) used the geographical distribution of ego's network as a counter-argument against traditional assumptions that working-class networks tend to be dense and physically proximate.

The research of Wellman (1979), Blokland *et al* (2003), Frei and Axhausen (2007) and Bridge (1995; 2002) stand in contrast to that of Bott (1957), Laumann (1973) and Atkinson & Kintrea (2001). The former endorse the theory personal networks may have become less dense and more spatially dispersed over time, whilst the findings of the latter exemplify how deprivation and class affects urban cohesion. However, literature on social networks and space proposes that network structure is contextually and/or temporally dependent (Faust & Skvoretz, 2002; Entwisle et al, 2007). In effect, this means that we must be cautious in making universal statements about network structure. Instead, measures of Social Network Analysis should be interpreted in light of the social, economic, cultural or institutional context in which the structure of relations is embedded. Subsequently, spatial dispersion and density in personal networks may be variable across time and space contexts. Spatial dispersion of relations may not be a prevalent trend in all contemporary urban societies, particularly in contexts that facilitate closure (Coleman, 1998, 1990; Burt, 2000), for example, if deprivation prevails or local culture is strong. The context-specific nature of ties should be a key element for understanding the constraints and opportunities in personal networks.

Following the results of past research, there are strong suggestions of a relationship between high structural cohesion and network localisation, although the distribution of structural and spatial cohesion scores across cases is not obvious. Perhaps there will be difference, pattern or regularity across cases. This thesis will undertake a structural analysis of the personal networks will confirm the extent to which most networks are cohesive and it is anticipated that spatial clustering of networks will be linked to structural cohesion (Durkheim, 1893/1933; Simmel, 1901/1955; Blau, 1977a; Freidkin, 1984). Given the findings of previous studies we might ask how density and spatial dispersion is likely to be distributed in our sample of personal networks. It will be interesting to see if the personal networks of this study from deprived white localities are predominately localised and cohesive or spatially dispersed and fragmented

and if there are variances in the distribution of spatial and structural cohesion in this socially similar sample.

Embeddedness versus mobility

Research focus is increasingly switching from geographically embodied face-to-face interaction toward networks based on modern forms of electronic and mobile communication. Interactions are assumed to be less geographically grounded and subsequently less constrained (or even unconstrained) by physical space. This thesis argues that studying face-to-face, spatially contextualised, embodied social interaction is still sociologically meaningful and critically insightful, particularly for less mobile populations.

It has been claimed that in this information age (Castells, 1996) human interaction networks can be 'fluid' (Bauman, 2000; 2003, Beck and Beck-Gernsheim, 2000) as many individuals have become dislocated from local residential contexts, instead living their lives as members of global networked societies (Sassen, 1991, 2002). Some argue that this has resulted from personal networks becoming increasingly dispersed as technology facilitates long-distance or non-face-to-face relationships (Fischer, 1977, 1982; Wellman, 1979, 1982; Bulmer, 1985). Shaw and Shaw (1999: 318) associate technological changes, especially mobile technologies, with a reduction of local cohesion, arguing that high density, 'tight-knit' networks in neighbourhoods are 'a thing of the past'. Wellman's (2001, 2005) critique of community and social networks overlooks the differential abilities and inclinations to be 'networked individuals' and consequently pays insufficient attention to those whose networks are spatially localised by habit. Arguably, spatial and structural cohesion may be curtailed in the networks of some people or groups more than others.

Urry (2010) also claims that mobilities are becoming more prevalent in contemporary society, arguing that individuals with mobile lives build spatially dispersed networks, have larger, more diverse networks and consequently find themselves at advantageous structural hole opportunities. However, Urry also recognises the inherent inequality generated by the social

and spatial distribution of ties and comments on the consequences this has on people's lives
(Urry, 2010: 1):

> there is heightened anxiety of being too localist and not networked enough, not able to exploit
> the structural holes. Variations across mobility capabilities are structured by gender, age,
> dis/ability and social class….Movement makes connections….Networking is a form of working
> with consequences for people' lives…networking requires substantial resources, of time, objects,
> access and emotion. Those high in what I call network capital enjoy many benefits that are over
> and above their possession of economic or cultural capital.

Perhaps those with more resources at hand are better able to develop and maintain mobile lives
and spatially dispersed networks. Fischer (1982) argued that distant ties may be maintained
because of their quality, although the ability to sustain such relations depends upon the
resources that can be expended between ego and alter (financial, time and mobility allowances).
If there are differential capabilities for mobility between individuals and this in turn produces
variant network structures, ranging from localised and embedded to fluid and dispersed, this
will have implications for urban cohesion. This perspective implies that network inequality
makes possible various combinations of spatial, structural and ideational cohesion.
Conceivably, people with different personal network structures will contribute differently to
urban cohesion because their lives are ordered in spatially and socially diverse ways. The study
seeks to investigate the extent to which there are differences between individuals but also
whether there is pattern and structure to resident personal networks, instead of chaotic and
randomly occurring interactions. This leads us into research question 4, *can different network
forms and experiences of cohesion be found within a relatively socio-economically similar (white, deprived
locality) sample? If so, are these randomly organised or can patterns be found?*

Despite the complexity of personal networks, it is expected that these network types will yield
pattern and order rather than be fluid and chaotic. The structure of human interaction is
complex, but not random. It is proposed that personal networks for this sample of residents of
disadvantaged localities are more likely to be habitual and routine (Bourdieu, 1984; Savage,
2001, Southerton, 2001) than dynamic, because class and deprivation effects will constrain the
distribution of personal networks. This is somewhat of a theoretical oxymoron because 'urban'
networks are associated with fluid mobilities, yet networks of lower-class groups or deprived

residents in urban localities may be less transient. It will therefore be valuable and meaningful to confirm how these networks are distributed in social and physical space and whether these forms can be better classified and understood.

1.4 Ideational cohesion and network structure: the social construction of attitudes and practices

This final section of the literature review chapter turns to explore the role of ideational factors upon cohesion in relation to research question 3, *are resident attitudes and practices framed in the context of network structure?*

In the most simplistic sense, to 'ideate' is to form a set of ideas and is traditionally related to the cognitive realm. However, critically and sociologically speaking, a broader definition to include both attitudes and practices may be more applicable to this thesis. From a sociological standpoint, ideations such as attitudes, identities, ideologies, knowledge are extra-cognitive; determined by external or environmental influences beyond the individual. Znaniecki (1940) called attention to the effects of a thinker's "social circle" on his or her ideas and actions. Knoke and Kuklinski (1992) argue that the structure of network relations has important behavioural, perceptual and attitudinal consequences for the individuals embedded within. Similarly, McPherson (2001) validates the casual influence of ideational homophily upon social tie formation. Ideations are socially constructed as individuals evolve attitudes and practices intersubjectively (Mead, 1934; Goffman, 1974; Jenkins, 2003; Merton, 1949: 523–4) and network structure provides a context for social identity and the development of attitudes and practices. The relationship between network structure and ideations is further supported through the link between cognitive balance and structural balance (Cartwright and Harary, 1956). Cognitive balance can be achieved when an individual holds complimentary friendships, interests and values with those around them (Heider, 1946, 1958), rather than situations of social distance or ideational conflict. Structural balance can be maintained through transitive closure, that is, when ties between all members of a group are positive, in other words, not being friends with your friends' enemies (Davis, 1963). The assumption is that individuals are inclined to ensure

that their social relationships are not conflictual or contradictory, safeguarding a sense of well-being and equilibrium for ego and amongst the group, which in turn underpins motivations to sustain these social interactions.

Highlighting the structural aspects of attitudes and practices leads to the argument that ideations have a practical element. This is because ideas rarely remain isolated in the cognitive domain; they are often implemented. Bourdieu (1984: 190) emphasises both attitudes and practice in his conception of the class 'habitus', because ideas and practices are functionally linked in both mind and body (Bourdieu, 1981; Crossley, 1995). Ideations are also reflexive because cycles of feedback occur between cognition (the developmental process of idea conception) and practice (the actionable outcome of an ideation). Ideations become reproduced or adapted in response to feedback within the social environment which conditions the scope of future actions. Given these cognitive and actionable aspects of ideations, in this thesis the term 'ideational' is used to represent both attitudes and practices and Chapter 5 aims to find ideational cohesiveness between residents through patterns of collective attitudes and practices. Following Markovsky's (1998) note on the linkage between 'social' and 'structural' cohesion, a key research question that follows from this analysis is how does ideational cohesion link with structural and spatial forms of cohesion in personal networks? Or rephrased, to what extent are attitudes and practices formed and experienced in the context of network structure?

Normative practices, systems of ideas and habitus

Social order and norm enforcement is more likely in organic societies where networks are dense and communal bonds increase social accountability (Durkheim, 1893/1933). Simmel (1902: 170) provided an early account of the link between normative communities and network density, though others have also observed that norms are more firmly held and easier to impose in dense social networks (Festinger, Schachter and Back, 1950; Cartwright & Zander, 1960; Heider, 1958; Newcomb, 1961; Coleman, 1990; Granovetter, 2005). Bourdieu (1977/2003) argues that 'doxa' can occur when attitudes become taken for granted within particular societies and when unquestioned, steadfast beliefs can act as structural constraint. Although there is consensus on the association between cohesive networks and norm enforcement, researchers using social

network paradigms disagree about the implications of these conditions, that is, whether density and localisation produces positive or negative effects for urban cohesion.

Coleman (1988) stresses the role of cohesive ties in fostering a normative environment that facilitates cooperation between individuals, whereas Burt's structural-hole theory views cohesive ties as internally constraining and detrimental upon an individual's ability to act innovatively (Burt 1992, 2001, 2005). The distinction is insightful and interpretation involves delineating between network resources as individual benefits and social goods. This, of course, mirrors social capital debates about resources as individually owned or collective assets (Bourdieu, 1984; Coleman, 1994; Lin, 1999; Putnam, 2000). This thinking implies that the presence of social networks between residents creates cohesion because ties between people, in and across neighbourhoods, develop pockets of trust and collective efficacy in urban space (Sampson et al, 1997; Putnam, 2000; Moody & White, 2003). In situations where networks are sparse and spatially dispersed, individuals may feel less attached to their residential locality or local community networks; perhaps increasing 'anomie' (Durkheim, 1893/1933) or isolation (Wirth, 1938) and privacy (Keller, 1958). However, low density and spatial dispersion in networks allow ego better access to non-redundant information and ideas (Keller, 1958; Burt, 1992, 2001).

In addition to norms, social networks have been linked to practice. Research supports the link between structural cohesion and ideational cohesion through systems of shared ideas and practice (Durkheim, 1933/1984; Markovsky & Lawler 1994; Martin, 2002; Moody & White 2003). Personal networks create a referential sphere of social influence (Bridge, 1994, 2002, 2003, 2006) within which the capabilities of the evolving habitus are developed. Yet the attitudes and practices of social actors are embedded in social networks and this can constrain opportunities for action. There are additional constraints upon switching between ideational structures beyond the reallocation of personal resources because ordinary practice is habitual and socially conditioned (Bourdieu, 1984). Crossley argues that this habitual embodiment of practice is conditioned by and contextualised within social network interactions (Crossley, 1996, 2001). Moreover, personal resources must be invested when developing new social circles and contacts, it is not conducive to frequently shift from one set of attitudes or behaviours to

another. Rather, embedding oneself in new practices and attitudes involves disembedding from old ones (Granovetter 1985; Giddens 1990).

Practices of embedding and disembedding between social and spatial contexts can have implications for urban cohesion, particularly through 'glocalisation', where a duality of local and global perspectives that give rise to a diversity of local effects. As Forrest (2008: 6) argues the 'revival of the neighbourhood is also part of the parallel rise of localism and globalism'. He refers to Castells' (1997) discussion of people's local social and spatial contexts becoming infiltrated by non-local network influences, especially global media and politics, producing contradictory images, meanings and identities. This local-global dualism describes the strengthening of local identity but at the same time illustrates that local networks are susceptible to exogenous influences, perhaps 'weakly constraining structures' (Friedkin, 1998) of 'norms and counter-norms' (Merton & Barbet, 1976: 17). The thesis uses qualitative data in Chapter 5 to explores norms related to attitudes and practices relating to urban cohesion, but perhaps more intriguingly tries to understand these normative frames are interpreted in the context of residents' personal network structures. The next section picks up on this issue in more depth.

This corpus of literature linking structural cohesion, norm enforcement and systems of shared ideas with network localisation and density together suggest that the attitudes and practices of individuals with networks encompassing high density and low spatial dispersion are more likely to be susceptible to tight normative frames. Furthermore, there may be some ideational cohesiveness (attitude homogeneity) between residents with localised and dense networks. It is perhaps more difficult to hypothesise about the ideations associated with low density, spatially dispersed networks. We might expect these residents to either share similar attitude and practice constructs to one another, or to construct entirely heterogeneous ideational frames. Such a theory speculates that mobilities and social fragmentation can give rise to a multiplicity of interpretations and experiences of urban cohesion, whereas on the other hand, this might also indicate that social networks shape ideations irrespective of network type and that habitus and normative constraints exist even in supposedly 'fluid' structures. Chapter 5 of the thesis addresses these research issues against survey and interview data.

Ideational frames: interpretation, experience and culture

If attitudes, practices and experiences are developed socially, it is perhaps logical to expect ideational aspects of urban cohesion to bear some correspondence to personal network structure. Do people experience and interpret cohesion differently and is this related to personal network structure?

A study by Savage, Warde & Ward (2003) found homophily of social and political attitudes between local residents, but the authors were not able to determine whether this was a consequence of neighbourhood embeddedness or the social network because neighbourhood and network effects could not be untangled. In order to understand the link between ideational motivations and network structure, it is necessary to explore qualitatively the network positions from which interpretations and experiences occur. The notion of 'framing' is useful and has been applied in social contexts. Goffman (1974: 21) defines 'frames' as interpretational schema allowing people 'to locate, perceive, identify, and label' events and experiences, in effect, to make sense of the world. Frames are laden with subjective bias (Nelson, Oxley, & Clawson, 1997: 221) as actors consciously or unconsciously 'construct a point of view that encourages the facts of a given situation to be interpreted by others in a particular manner' (Kuypers, 2009: 8). Framing is therefore tied up with morals, judgements, norms and habitual practice and best located in discourse and rhetoric. Framing can take many forms and, in this thesis, two notions are particularly useful. Firstly, 'frame alignment' describes a situation of ideational consensus between individuals, where their interpretations are congruent and complimentary (Snow & Benford, 1988: 198; Snow et al, 1986: 464). Secondly, 'frame disjuncture' (Crossley & Ibrahim, 2010) occurs where ideational shifts are found between individuals in a network, where people's attitudes or perceptions differ.

In addition to finding relational fragmentation (gaps in network interaction in the Blau sense) we may also observe ideational fragmentation between groups that is representative of social distance. In their discussion of social fragmentation, Prandy and Bottero (2003) describe how social distance is accented in two different ways; from the psychological to the structural. In this thesis, and in accordance with Blau (1977a), we can seek evidence of the 'structural' kind of social distance, as well as ideational cohesion through 'cognitive' elements (Prandy and Bottero,

2003) and explore the relationality between both. Breiger (1974) highlights the duality of social networks; individual agents create social structures while, simultaneously, these same structures shape the behaviours of the individuals embedded in them. In this sense, Social Network Analysis can be used to make connections between similarly located categories of individuals on the basis of their ideational co-location in social space (see also 'fields' Bourdieu (1984) and 'catnets' White, (1965/2008).

Individuals have been described as socially cohesive by nature of their shared tastes, cultural preferences and consumption patterns (Bourdieu, 1984; DiMaggio, 1987, Savage *et al*, 2003). Studying ideational features of networks opens the door to aspects of culture and identity (Emirbayer and Goodwin, 1994), reducing structural determinism and allowing potential for agency including the opportunity to 'switch' between narratives (Mische & White, 1998). In attempting to understand ideational consensus and shifts, this study will analyse how the social construction of attitudes and practices relating to urban cohesion vary by network type and whether different framing strategies represent social distance between groups.

1.5 Consequences of spatial, structural and ideational cohesion

This final section discusses the consequences of interplay between forms of cohesion in light of academic literature on community and social capital, to address the question, w*hat are the consequences of this interplay between spatial, structural and ideational forms of cohesion for social capital and social action?* (RQ5).

Community, networks and urban space

Though the concept of community is not intrinsic to this thesis, studies on this topic have been important in conceptualising cohesion because they have focused upon the nature of social bonds within spatial environments. Durkheim (1893/1933) was preoccupied with the problem of social order in terms of the structure of social relations between individuals in a given society. Mechanical solidarity was characterised by a homogeneity and pressure to conform, whereas the more modern organic solidarity was functional, departmentalised and based on the division of labour (Durkheim, 1893/1933). For Durkheim, cohesion is a social fact existing

beyond the realm of the individual and is exhibited though patterns of social bonds and or collectivism in social structure. Tonnies (1887/1957) attempted to represent ideational and structural cohesion between residents using a qualitative descriptives of 'community' and 'society' (gemeinschaft and gesellscaft). In a similar vein, Keller (1958) offered a distinction between urban and rural networks. These theories are consistent in their depiction of modern urban society as made of networks that are disjointed, sparse and dispersed across physical space as opposed to the networks of rural inhabitants of villages and small townships or traditional communities which were portrayed as geographically and socially dense overlapping social circles. Although this typology makes sense in ideal type format, it is overly simplistic in reality as it assumes that residents living in the same environment (urban or rural) will have similar network structures and ideational motivations. These distinctions and classifications assume that the spatial environment determines the structure of social networks and so do not account for difference or inequality within the same context.

Like cohesion, the concept of 'community' is analytically problematic, especially when applied interchangeably with the term 'neighbourhood'. The word 'community' connotes deep and long-term solidarity, therefore implying emotional and temporal dimensions, but the term has also been applied spatially. Elias (1974: xix) defines 'community' in terms of geographically localised, close social ties; *'a group of households situated in the same locality and linked to each other by functional interdependencies'*. For Elias, 'community' is territorially constrained to the neighbourhood and assumes some level of social solidarity that is encapsulated spatially. Forrest and Kearns (2000: 8) provide a definition of community cohesion between residents at the most basic observable, measurable level as *'groups who live in a local area getting together to promote or defend some common local interest'*. The key elements of this definition are that 'cohesion' has spatial, structural and ideational dimensions. Moreover, 'community cohesion' exists where these dimensions are found to be nearby, close and dense. For Forrest & Kearns (2008), cohesion is inherently spatial because the focus is on residents of a physical locality (*'live in a local area'*). Cohesion is also ideational and structural, conceptualised at the *'group'* level, in *'getting together'* residents form a social network structure. Finally, geographic space and social space are related because these networked residents have shared ideational interests that are ingrained in physical space (*common local interest*).

Community may be better understood as being physically embedded in networks of embodied interaction than bounded in preconceived spatial units. Indeed, Wellman and Leighton (1979) recommend that an alternative to propositions of 'community lost', 'community saved' or 'community liberated', researchers should endeavour to empirically locate resident networks. Social networks are implicit structures of shared identification and practice; those looking for 'community' structures should study social networks. In such a sense, we may analyse the salience of geography in constituting community networks, perhaps finding that the spatial context of community is important for some but not others. Whilst communities may be developed within localised networks, particularly in contexts of social deprivation, it is essential to acknowledge that some resident personal networks will also transcend local spatial boundaries. This makes community and neighbourhood analytically disparate concepts. Community can be found or located through an analysis of network interactions between urban residents rather than being assumed as existing a priori to empirical research.

Much has been done to understand the structures and processes of residential interaction in academic studies of residential cohesion and fragmentation, albeit without the use of relational data. Some studies have moved beyond the idea of neighbourhood and community as interchangeable units, instead theorising that social networks have the capacity to strengthen or dilute local bonds. Gusfield (1975: xvi) puts forward two dimensions of community relating to local space and social networks: the territorial and the relational. Riger and Lavrakas (1981) also link geographic space to social networks using a factor analysis of neighbourhood attachment variables to identify two empirically distinct but correlated factors. The first factor, 'social bonding', refers to the ability of a resident to identify other people in their locality by first name. The second factor, 'behavioural rootedness', the extent to which a resident felt part of a community, was correlated with years of residency and expected length of local residency. Age was correlated with both high bonding and high rootedness. McMillan & Chavis (1986: 14-16) using the Sense of Community Index (SCI) found that resident participation and integration was related to having local social networks and local social influence via normative attitudes. The research of Riger and Lavrakas (1981) and McMillan & Chavis (1986) indicates that there may be domains of urban cohesion, where ideational markers map on to network structural

types. An interesting avenue of research explored in this thesis is the link structural, spatial and ideational forms of cohesion – in other words the relationship between network structure, attitudes and practices. Chapter 5 embarks on such an analysis to ascertain how different types of personal network structure influence resident's proclivity to construct positive opinions on their locality, conduct locally embedded practices and feel a sense of community.

This study will draw on theories of community to understand patterns of resident cohesion in urban space. Instead of finding community, this study will try to illustrate how cohesion and fragmentation is constituted through social network and ideational structures.

Social capital and social action

Robert Putnam's well cited text *Bowling Alone* (Putnam, 2000) describes the decline of social capital in contemporary American society and has been highly influential upon cohesion theory and practice in both academic and political settings. His work has informed British polic, notably through the inclusion of social capital variables in national surveys.[7] For Putnam, cohesion can be measured through the distribution of social capital, 'connections among individuals - social networks and the norms of reciprocity and trustworthiness that arise from them' (Putnam, 2000: 19). His definition of social capital is centred on formal ties; membership or participation in official civic associations. This principal focus upon formal over informal associations advocates ontological value of particular types of ties over others, especially the importance of civic ties over everyday relations in policy research (see also Li *et al*, 2002, 2003; Mohan *et al*, 2005). Besides, Putnam's approach does not make full use of relational data, forfeiting adjacency matrices and alter-alter relations in favour of dyadic relations and attribute data (Putnam, 2000). This is ontologically limited as it seeks to produce an account based on generalisable trends over contextualised, case-based understandings. This has led to claims that Putnam's research is geared toward providing evidence of individualism and privitism rather than the relational processes (Fischer, 2005: 159). In the absence of relational data, the real strength in Putnam's approach has been to make connections between cognitive and behavioural components of resident activity (to link cohesion with what people think and do)

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[7] See Harper, R. (2001) for a review of social capital by the Office for National Statistics, including an appendix of operational survey measures of social capital.

and in his distinction between types of ties through the identification of bonding and bridging forms of capital (Putnam, 2000).

Whilst Putnam prefers to focus on the civic elements of social networks, for Bourdieu, social capital is just one type of capital existing alongside economic, cultural and symbolic forms of capital with inter-relationality between these resources. He defines social capital as 'the aggregate of the actual or potential resources which are linked to possession of a durable network…of relationships of mutual acquaintance and recognition' (Bourdieu, 1984: 249). Bourdieu's opposition to rational choice models, assumes that social action is not consciously or economically motivated and is instead informed by a 'logic of practice' (Bourdieu 1990). Rather than objective criteria for rational action, it is an individual's habitus that determines, through pragmatic embodiment, how they interpret environmental hierarchy and struggle to occupy or defend a position in and across 'fields'. For Bourdieu, more is better; it is the amount of access to capitals an actor has vis a vis other actors that holds salience. Though he does not use Social Network Analysis and pays little attention to actual patterns of interaction (Bottero, 2009), his use of correspondence analysis offers a sophisticated alternative relational analysis of cohesion and conflict between individuals in 'fields' stabilised by balances of 'credit' and portfolios of capitals. Bourdieu's claim that social capital can be measured from the size of an individual's network and the volume of each type of capital one has access to is limited, given that network size is a rather crude proxy for social capital, especially because some networks can lack efficiency not simply because of a quantitative lack of non-redundant connections (Burt, 1992) but also because not everyone views their networks instrumentally and even if we did, not all ties are equal. Indeed, a great deal of informal interaction is performed habitually and not fully rationalised; some individuals may lack the awareness or ability to access or even recognise resources in their network.

 Bourdieu stands in opposition to Putnam, claiming that due to the competitive struggle for resources that ensues between actors and fields, social capital actually reproduces socio-economic inequality and reproduction of disadvantage (Bourdieu, 1984), rather than providing a general social good (Portes, 1998; Putnam, 2000). Fine (2001) goes further, arguing that Putnam's doctrine is obliquely aligned with neo-liberalist paradigms, which shift the cause of

poverty, inequality and disadvantage from the political economy and on to individuals' lack of engagement. This is problematic as civic disengagement and social inequity are also spatially varied across regional contexts (Radcliffe, 2005). Coleman offers a more nuanced approach which acknowledges the complexities and inequalities of social capital beyond class. Social capital 'is not a single entity, but a variety of different entities, having two characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure' (Coleman, 1994: 302). Still, this definition omits mention of constraint upon individuals and so ignores the dark side of social capital.

Blokland and Savage (2008) have argued that social capital theory and debate has failed to address the operational complexity of power and inequality in deprived neighbourhoods. Opportunity and constraint is not amassed from the 'quantity', or even the 'quality' of ties, rather the 'function' of social capital (Coleman, 1988, 1994) is much more complex and based upon an individual's entire portfolio of resources which encompasses both spatial and social range, vertical as well as horizontal relations. The type of tie is essential.

Putnam (2000) distinguishes between 'bonding' and 'bridging' social capital. Bonding social capital describes ties between individuals in homogeneous social situations, for example, between kin, close friends and neighbours. These ties are therefore between people located at similar positions in social structure, and social familiarity is likely to be accompanied by ideational similarity, such as shared attitudes, practices and experiences. Bridging social capital encompasses less close relationships of acquaintanceship, such as workmates and friends-of-friends and as such is often captured through 'weak ties' (Granovetter, 1973). Weak ties may provide horizontal access so acquaintances but need not be socially heterogeneous, especially because homophily principles still operate at geographic distance.

Individuals with networks incorporating weak ties and spatial dispersion may have contacts in different social circles, but these alters may be socially similar to one another and occupy similar positions in social space. Woolcock (2001: 13-14) builds on Putnam's horizontal model by introducing 'linking' social capital, ties to alters who are located at vertically dissimilar social positions in social space (thus providing access to a diversity of resources, experiences, attitudes

and practices). It is important that the vertical reach of linking capital is conceptualised as having higher and lower points so that, for example, on a theoretic economic scale, one might have access to more as well as less affluent alters.

Social capital theories are principally suited to notions of social space, but of course, network inequalities also have implications in geographic space. Massey (2005) argues that much social capital literature ignores space or treats it as static, when in reality space is a physical territory for mapped inequalities. A spatial element can also be incorporated into these social capital definitions for the purpose of this thesis, so that 'bonding' ties involve geographic propinquity and 'bridging' or 'linking' ties can be conceptualised as having some level of spatial dispersion. Subsequently, residential homophily *within* localities may provide an indication of internal cohesion or bonding capital. Conversely, networks between neighbourhoods may fulfil the function of 'bridging capital' or even 'linking capital' where ties are to socially different residents or neighbourhoods. This theorisation of the spatial dimension of social capital begs further questions and is explored further in Chapters 3, 4 and 6.

Allowing social capital to be 'spatial' provides an analytical distinction between the types of ties needed for urban cohesion; those that bond residents within a locality, which may foster trust, norms and collective identity (Coleman, 1988, Putnam, 2000) and those bridging across neighbourhoods, perhaps offering resource diversity through heterogeneity (Lin, 1984; Burt, 2000; Woolcock, 2001). This thesis explores the potential of individuals to mobilise or 'activate' these various types of capital (Lin, 1999) and investigates the consequences of this resource mobilisation upon urban cohesion by way of ideational outcomes.

Kintrea and Atkinson (2001) point to the existence of 'constraining social capital' in deprived areas. While there may be strong reserves of social capital (defined as the resources which are inherent in one's social relationships) in poor areas, the nature of social capital may be 'sustaining but constraining', thereby providing adequate means to help people to 'get by' (i.e. to survive daily life under difficult conditions) but scant means to help them to 'get on', that is, to move beyond their current situation to become more included in the economic and social mainstream (De Souza Briggs, 1998; Pettit and McLanahan, 2001). It will be interesting to

explore how given these variants of tie structure and accompanying types of social capital, how different networks might enable or constraint cohesion between residents. Chapter 6 will address these issues and make reference to a theory of spatial social capital.

In summary, this thesis will build on the spatial, structural and ideational dimensions within Forrest and Kearns' (2000) definition of 'community cohesion'. Rather than attempting to measure social capital or to prove the existence of community, this study attempts to demonstrate how cohesion and fragmentation between residents is constituted through networks of relations and how different structures produce different types of social capital, yielding different opportunity and constraint outcomes for individuals and neighbourhoods.

Summary

This chapter has reviewed literature on resident cohesion in urban and social space. It argues that cohesion between residents has three ontological dimensions; spatial, structural and ideational. To understand cohesion we must triangulate data to capture the interplay between forms of cohesion.

The spatial patterning of personal networks may be conditioned by social factors, such as social distance (Park, 1925, Blau, 1977a), homophily and propinquity (Moreno, 1947, Festinger *et* al, 1950; Schelling, 1971, 1978). This mutual dependency of social and geographic space may create pattern, order and focus to urban interactions (Feld, 1981). The literature also highlights a relationship between spatial and structural cohesion by proposing that tight-knit, densely connected tie structures may also be localised (Bott, 1957; Laumann, 1973; Atkinson & Kintrea, 2001). We know that attitudes and practices are formed in personal network contexts (Knoke and Kuklinski, 1992; McPherson, 2001) but there is also literature supporting the link between ideational cohesion and structural-spatial cohesion in networks (Durkheim, 1893/1933; Simmel, 1902; Festinger, Schachter and Back, 1950; Cartwright & Zander, 1960; Heider, 1958; Newcomb, 1961; Coleman, 1990; Granovetter, 2005). Personal networks not only create reference points for identity and attitudes but also guide the reproduction of habitual practice (Crossley 1996; Crossley 2001).

Patterns of cohesion between residents may have wider urban consequences. Building on Putnam's (2000) theory of social capital, localised residentially homophilous ties may create spatial 'bonding' capital, whereas geographically dispersed networks between residents of different neighbourhoods may provide spatial 'bridging' or 'linking' capital. At an individual level, residents may have different capacities for forming network types (Fischer, 1982; Urry, 2010) and this might be evidenced by empirical observations of different forms of cohesion within a socio-economically similar sample. These differential capacities to develop particular network structures may also affect individual social action (Lin, 1999; Burt, 2001) and community participation (Wellman, 1979; 1982; Bridge, 1995, 2006; Bellair, 1997; Amin, 2005).

The thesis will highlight the distribution of spatial and structural forms of cohesion across the sample of resident networks and explore any class and locality effects underlying these patterns (Bott, 1957; Laumann, 1973; Atkinson & Kintrea, 2001). It will also disclose whether contemporary North Manchester personal networks transcend physical space (Wellman & Leighton, 1979), the extent to which resident interactions are 'fluid' (Beck & Beck-Gersheim, 2000, Bauman, 2000) and mobile (Urry, 2000; Urry & Elliot, 2010). If different network structures are found within this relatively socio-economically similar sample, they should be interpreted in the urban context in which they occur (Faust & Skvoretz, 2002; Entwisle et al, 2007).

CHAPTER 2: A critical paradigm for studying resident cohesion and urban social networks: methodological considerations

Chapter overview

This chapter presents the methodological rationale for the study and a framework for engaging with the thesis research questions. The chapter is organised into four main sections.[8] The first part sets up the research design by presenting an analytical model and set of research questions. The second section describes the process of data collection including sampling residents and localities and delineating network boundaries. Section three provides a description of methods for data analysis. Section four outlines the ontological and epistemological foundations of the research and puts forward a set of assumptions on which the study is based. Section five discusses reliability and validity and presents the limitations and ethical issues arising. Finally, a summary section concludes the chapter.

2.1 Research design and operationalization of theory

This part of the chapter is divided into two parts. The first part provides a set of research questions. The second part presents an analytical model intended to operationalize the research questions, introduce data types and define measures and concepts.

Research questions

The over-arching research question of this thesis is *what are the effects of the interplay between spatial, structural and ideational forms of cohesion in deprived urban areas?* This question and the assumptions and propositions above give rise to five sub-research questions. The first three questions deal with contexts of cohesion and the overlap between these contexts, the fourth focuses on examining diversity or difference with a socio-economically similar sample and the fifth question explores the consequences of urban cohesion. Questions 1, 2 and 3 are explored empirically in Chapters 3 to 5. Whilst the elements of Questions 4 and 5 are cross-cutting are woven throughout the thesis and revisited for theoretical reflection in Chapter 6.

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[8] The chapter is confined to discussion of issues central to the methodology, some additional materials and notes have been included in the appendix.

1. How are resident interactions organised in social and geographic space? How salient are geographic propinquity and social distance in contemporary personal networks?

2. How structurally and spatially cohesive are these North Manchester resident networks? Is there a correlation between density and spatial dispersion in personal networks?

3. Are attitudes and practices framed in the context of network structure?

4. Can different network forms and experiences of cohesion be found within a relatively socio-economically similar (white, deprived locality) sample? If so, are these randomly organised or can patterns be found?

5. What are the consequences of this interplay between spatial, structural and ideational forms of cohesion for social capital and social action?

An analytical model of urban cohesion: data types, measures and concepts

The thesis aims to explore forms of cohesion and fragmentation between urban residents. For the purposes of this research, states of 'urban cohesion' (or fragmentation) result from the interplay between spatial, structural and ideational forms of resident interaction. Elements of 'urban fragmentation' may occur where low rates of interaction or social distance are found between resident groups (Blau, 1977a).[9]

To explore the analytical model of this thesis, Figure 1 (first displayed in the Introduction) has been re-presented here to illustrate the interplay between the three dimensions of urban cohesion. The overlap between dimensions contributes to a relational paradigm for studying and understanding the structure of urban cohesion and fragmentation.[10] Indeed, several of the research questions of this study are based on this overlap between dimensions of cohesion. The analytical model illustrates how the research questions feed into or cross-cut the empirical chapters.

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[9] Whilst acknowledging urban fragmentation, for ease of communication most reference is made to 'cohesion', 'urban cohesion' or 'resident cohesion' rather than 'urban cohesion and fragmentation', with mention of fragmentation where relevant.

[10] The analytical model does not include a temporal dimension because this was not central to the focus of the study and research questions. The influence of time upon social networks is discussed at several points within the thesis, especially in relation to processes of social reproduction.

Figure 1: Analytical model of urban cohesion and fragmentation
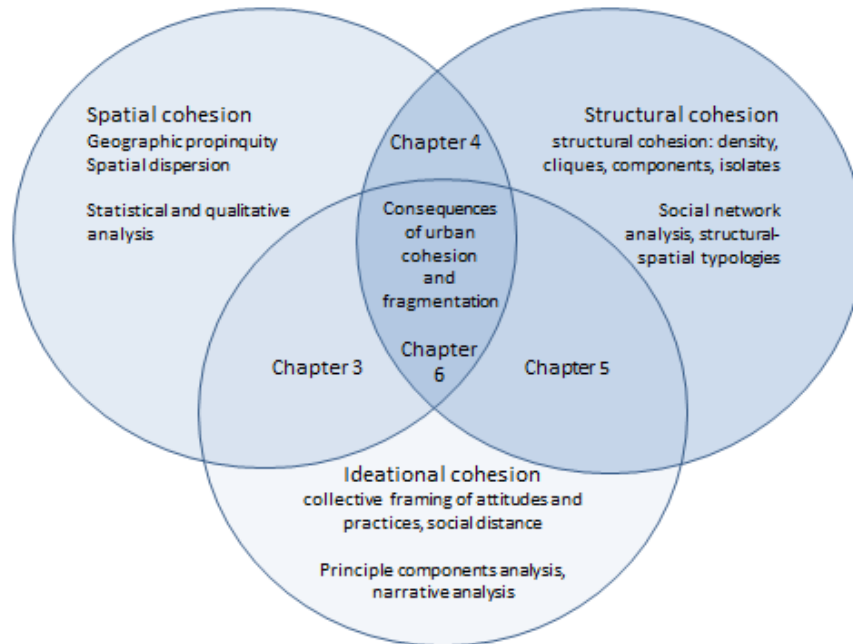
The three types of cohesion in the analytical model are intended to operationalize the theoretical issues noted in Chapter 1. Each requires different methods of measurement, mixing statistical analysis, Social Network Analysis (SNA) and qualitative analysis, as defined and described below.

Spatial cohesion: the extent to which a network is localised or spatially dispersed. Networks across the city are studied using Social Network Analysis, the distribution of ties explored through statistical analysis of residential homophily, geographic propinquity and spatial dispersion. Defining ties as spatially propinquitous or dispersed was undertaken in the context of the sample distribution. Spatial dispersion was defined in the context of the data. Given that none of the resident egos named alters located beyond the United Kingdom and very few people named alters living beyond the counties surrounding Greater Manchester, national or international definitions of spatial dispersion were not applicable to this sample of networks. The calculation derived for measuring spatial dispersion was therefore tailored to suit the

sample. This process involved first mapping the spatial distribution of networks and then deciding what should constitute 'localised' and 'dispersed' in a way that was true to the data and also meaningful for residents. Additional analysis of spatial cohesion is also gauged qualitatively through resident narratives on perceptions of social closeness and distance.

Structural cohesion: the extent to which the edges of a personal network are connected, being cohesive (tight-knit) or fragmented (loose). Following Moody and White (2003), Carrington, Scott & Wasserman (2007) and Wasserman and Faust (2007), structural cohesion is analysed using Social Network Analysis measures of degree, components, cliques, isolates and density. The analytical model shows overlap between structural and spatial cohesion because structural-spatial typologies are created in Chapter 4. As with the contextual definition of spatial dispersion outlined above, classification of networks as 'dense', 'fragmented', 'localised' or 'dispersed' had to be made appropriate to the distribution of cases in the sample. Scores for density and spatial dispersion had to be normalised so that the personal networks could be compared and a suitable typology was created inductively in a way that was meaningful to the data.

Ideational cohesion: describes cohesiveness between residents based on patterns of collective attitudes and practices, this perspective is influenced by the approaches of Sorokin (1927, 1943), Merton (1968) and Putnam (1995, 2000). Drawing on the link between cognitive balance and structural balance (Cartwright and Harary, 1956; Heider, 1946, 1958) in situations of social distance or ideational conflict, explanations for such patterns of interactions are also explored. Overlap between ideational and structural cohesion is illustrated through the 'framing' of attitudes and practices on urban cohesion in the context of network structure (see Chapter 5).

2.2   Eliciting & delineating the boundaries of personal networks

Decisions about where to draw network borders affects the type of data generated. Knoke & Yang (2007) stipulate the importance of setting the network boundaries in a manner that is meaningful, not arbitrary, to the research questions of a study. The research design of a whole network study imposes network boundaries from the onset. In this study, interactions were sampled at the personal network level and so boundaries were set by both the name generators

and sampling strategy. We will now turn to further discussion of these boundary setting elements.

Data collection tools: survey, interview and name generators

It has already been mentioned that data was collected using surveys and semi-structured face-to-face interviews. A total of 409 valid survey responses were obtained across eight localities and interviews were conducted with 53 residents in four of these local areas. Both the survey and interview methods involved asking respondent (egos) about their contacts (alters) and thus produced a dataset of independent personal networks.   Figure 4 provides an example illustration of some of these personal networks using the SNA software UCINET (Borgatti, Everett & Freeman, 2002).[11]

Figure 4: A sample of independent personal network units extracted from the dataset
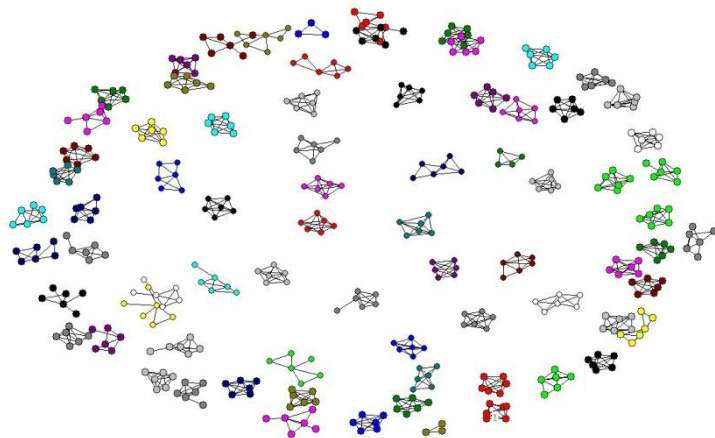
The next sections will briefly discuss the process and tools in more detail.

Stage 1: Survey

The purpose of the survey was to collect relational data on 'core' strong-tie networks (Name Generator 1, max 5 alters) as well as ideational data on ego's attitudes and practices relating to

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[11] Asub-sample of personal networks has been visualised here because as the image of all networks in the total dataset makes the independence between cases unclear.

urban cohesion. Some ideational indicator questions were borrowed from other surveys on cohesion (Buckner, 1998; Milligan, Nario-Redmond & Coulton, 1997; Heath & Laurence, 2008). The survey was short (4 pages), written in plain language and was relatively simple to complete (see Appendix). Qualitative elements were omitted in order to reduce literacy barriers. The survey was piloted with four resident individuals who found no significant difficulties with completion and during door-knocking rounds the first fifty respondents completed the survey with the help of a researcher in situ. To ensure that the tool was reliable, respondents were asked how they interpreted some questions in order to check the validity of variable measurements. Following these trials, a freepost address was established for postal return and an online version created for those who preferred to respond electronically. Interviewees also completed the survey.

Stage 2: Semi-Structured Interviews

Resident interviewees were recruited using a purposive sampling procedure. I advertised in local newspapers and put posters in schools, libraries, cafes, pubs and community centres. I was also fortunate to receive a small grant from the Manchester statistical Society which, in addition to covering costs for printing, stationery and Dictaphones, enabled me to train and recruit two resident-interviewers (who conducted 15 interviews). A total of 53 semi-structured interviews were conducted with residents from localities in the following four areas; Middleton (15), Blackley (14), Collyhurst (12) and Prestwich (12).

The gender composition of this sample was similar to the survey dataset; 20 interviewees were male, 33 were female. Interviews lasted between 1 ½ to 2 hours. The interview schedule used can be found in the Appendix. In addition to completing the survey and answering Name Generator 1, two additional name generators were used during interviews. Interviewees were assisted in drawing their social networks by manually on large sheets of A3 paper and alters were coded using coloured pens and highlighters. The interviewee networks varied in size, the smallest had 7 alters and the largest included 58 alters.

Name generator questions

Various name generator techniques have been applied in past research, with the choice of wording having direct implications upon the nature of data yielded. Some studies have used subjective and ambiguous affective style name generators, for example, asking respondents to name their 'best friends' (Laumann, 1973) or those they feel 'close to' (Wellman, 1978). McCallister & Fischer (1978) argue that the term 'best friend' is problematic in personal network surveys as respondents employ overly subjective interpretations resulting in differential methods for excluding alters. Fischer (1982) used specific prompts linked to a range of support exchanges between ego and alter, for example, 'who could you borrow money from?' or 'who helps you with childcare?' Lin & Dumin's (1986) Position Generator and Snijders' (1999) Resource Generator were used to produce compositional measures linked to network diversity and individual social capital (van de Gaag and Snijders, 2005).

Individuals employ cognitive schemes to recollect their personal networks. Social relationships organise memories and alters tend to be clustered by affiliations with social groups or social circles (Bond *et al*, 1985; Fiske, 1995; Brewer, 1995). Some studies have explored the spatial organisation of social networks by asking interviewees to mark out 'important places' on maps (see Holstein, 2002; Kesselring, 2006). Rather than focus on social or spatial ordering, Spencer and Pahl (2006) highlight the temporal, wording their name generator to focus only on relations in the present time frame. This study investigates the spatial organisation of personal networks in two ways, by collecting data on ego and alter residential locations and by using a spatial diversity name generator.

This study is also concerned with gauging informal social networks. In the Northern California Community Study (NCCS), Fischer and McCallister (1978) suggested normative-based recall (where a respondent might feel obliged to list *all* members of a role category (even if they are not important or close ties) should be substituted for research methods that tap into the respondent's 'core network'. This subset of ties is made up of those alters who are *'most likely to be the sources of a variety of rewarding interactions'* and will be most influential upon the behaviour, attitude and well-being of the ego (Fischer & McCallister, 1978: 135). This is very much in line with the intentions of this research, to capture the core of residents' personal networks akin to a 'social circle' (Simmel, 1908), 'first order zone' (Barnes, 1969) or 'primary

social world' (Bott, 1971:159). But, acquaintances as well as close friends and family can be perceived as important informal personal network contacts (Morgan, 2008) and can provide opportunities by offering non-redundant bridging capital (see Granovetter, 1973). This study avoided using the word 'close' to include acquaintances that were informal but important.

Three name generators were used in the study, the first was answered by survey respondents and interviewees answered all three questions. Due to time constraints, the survey name generator (Name Generator 1) was limited to a maximum of five alters whilst the interview schedule was allowed for exploration of weaker ties using position generators to widen personal network composition (Name Generators 2 and 3). Following Spencer and Pahl (2006) all name generators were limited to the present time frame. The name generators used are as follows:

Name Generator 1: Important and frequent contacts (survey respondents and interviewees)

Name Generator 2: Spatial diversity (unlimited alters, interviewees only)

Name Generator 3: Position generator (unlimited alters, interviewees only)

Name Generator 1: Important and frequent contacts

Respondents were asked to '*name up to five people that you see most often in your spare time and who are important to you*'. The focus was on frequent, intimate (Wellman, 1990, 1992) informal social contacts because these were assumed to have most influence upon ego's practices, identities and attitudes (Wellman, 1988: 61-65). The survey collected attribute information on alters, including residential locality and occupation. The main purpose of this name generator was to test whether social relationships had become dispersed and whether geographic proximity mattered.

During interviews, residents were able to name an unlimited number of alters from Name Generator 1. The wording of Name Generator 1 may have encouraged the naming of local contacts and introducing the two diversity generators during interviews resulted in opportunities to observe larger and spatially dispersed networks. Some personal networks captured by interviews are larger and feature wider circles of friends and family, as well as acquaintances. However, for individuals with smaller networks, Name Generators 2 and 3

resulted in re-naming the same alters.

Name Generator 2: Spatial diversity

This name generator was used to gauge the amount of spatial heterogeneity in ego's network and this diversity was likened to a spatial form of bridging capital and included the naming of places, neighbourhoods and other foci (pub, school, gym etc). A secondary use of this tool was to prompt qualitative attitudes on the resident's immediate locality, other neighbourhoods and narratives on social distance relating to physical space. The results also provided some insight into areas which were blind spots or empty-spaces in the city, from the resident's perspective (Auge, 1995; Kociatkiewcz & Kostera, 1999).

The spatial position generator was first introduced verbally. The interviewer suggested towns at random from a list categorised into North, South, East and West Manchester. The verbal prompt being: *'I am going to mention some places in Greater Manchester. Each time, please tell me if you know anyone from that place or if you know someone from near that place'*. In later interviews, verbal prompts were substituted for cards marked with place names. For a task assessing knowledge, especially that which might be considered 'local knowledge', it was especially vital that residents felt at ease and that the researcher made clear that interviewees were not expected to recognise all place names. An instructive statement was included on the interview schedule, but more often than not, the interviewer delivered this quite colloquially to suit the informality of the situation:

Interviewer: Ok, so I've laid these cards out on the table. Each card has a place name on it. All the places are in Greater Manchester. I'd like you to pick out any places you'd particularly like to talk about. Either because you like it, you don't like it, or maybe you don't know it.

The statement was accompanied by a series of prompts, depending on the researcher's judgement of the situation based on cues from the interviewee (how many alters had he/she named already? Did their network appear to be exhausted/complete?). For example:

Interviewer: You've said you don't like X locality, do you know anybody that lives there?

Or

Interviewer: You haven't named anyone from South Manchester. Is there anyone that you'd like to add to your network that is from South Manchester?

Name Generator 3: Position generator

A position generator was used to gauge social diversity through the occupational class and ethnicity of alters (Nan Lin, 1986; Snijders, 1999). This was useful for finding out whether ego had vertical access to alters through 'linking' social capital (Woolcock, 2001) in addition to horizontal forms of 'bridging' social capital. Interviewees were asked if they could add to their network anyone employed in occupational fields of professional and/or civic responsibility, for example, a policeman, teacher, doctor, lawyer, accountant, MP. Or if any of their existing network alters fit this criteria. The same questions were also posed with regards to the ethnicity of ego's contacts.

The compositional data obtained using this name generator does not form a large part of this thesis, except as a reference to interpret network structure (for example, if ego had a spatially dispersed network it was also helpful to explore if their alters were heterogeneous or homogeneous). Brief mention of this name generator is necessary because it formed part of the interview schedule (see Appendix) and contacts yielded from this question were included in ego's network. There are future opportunities for analysis using the compositional variables of this name generator, particularly to study the link between social heterogeneity and network structure.

In this study, both interviewees and researchers influenced network content and boundaries. Interviewees were actively involved in the data collection process, not only in constructing their sociogram but by informing and validating the researcher's interpretations of network processes, deciding who was included and omitted from their network. The interview process allowed resident-egos to name a larger number of contacts and following the name generator sections, a final prompt was given to ensure that appropriate alters had been named; '*Looking at*

your network, is there anyone that is missing?', *'Is there anyone who you think should be on here but isn't?*, *'Is there anyone else that you'd like to add?*, *'Are you happy that this is a good representation of your own network?'*. Although the Name Generators guided network boundaries, the face-to-face interview process allowed residents to construct their network and see it develop visually, so it was easier to spot missing alters. It is hoped that this process would create a relatively accurate picture of the specific subset of ties that we are interested in without being too restrictive upon interviewees.

Sampling localities and residents

The sampling strategy existed at two levels; first in selecting local neighbourhoods in North Manchester and secondly in yielding a sample of residents from these localities who were willing to act as participants. Diverging from urban studies that have analysed differences between working-class and middle-class groups (Savage, Bagnall & Longhurst, 2005), this research aimed to uncover differences *within* a socio-economically similar resident sample so the aim was to identify a set of North Manchester localities that were socially and economically comparable as predominately white-ethnic areas of deprivation.

The English Indices of Deprivation (ID 2007) was consulted in order to identify and then sample 'deprived' residential areas in North Manchester.[12] The ID 2007 data set offers information at the level of Lower Super Output Level Areas (LSOAs). LSOAs are very small-scale spaces with roughly 1,500 inhabitants. LSOAs may differ in geographic size, for example, LSOAs in densely populated urban areas tend to cover a smaller spatial scale than those in sparsely inhabited rural areas. Seven different measures of weighted deprivation categories are used (income, employment, health, education/skills/training, barriers to housing, living environment and crime).[13] It is not, therefore, an economic measure of affluence, rather it gauges multiple deprivation. The ID 2007 guidance advises, *'not all deprived people live in deprived areas and not everyone living in a deprived area is deprived'*.[14] Deprivation scores are provided for each of the indices and there is also an overall Index of Multiple Deprivation (IMD

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[12] A more recent version was released after data collection (IMD2010).

[13] Deprivation categories are weighted in order of presentation from maximum to minimum.

[14] IMD2007 Guidance document, Department for Communities and Local Government, p.3.

2007) which combines the seven multiple measures. IMD 2007 scores are ranked nationally, with a score of 1 representing the most overall deprived locality in England and 32,482 being the least deprived LSOA.   It was most appropriate to sample localities at LSOA level because this

Figure 2: Map of Greater Manchester

Figure 3: Map of North Manchester

small spatial scale might increase the likelihood for homogeneity. All eight LSOAs were amongst the top 12% most deprived in England. In the IMD 2007, the second most deprived LSOA in the country was Collyhurst South in the Harpurhey ward.

To avoid spatial differences (for example, urban/suburban distinctions) all neighbourhoods were within 5 miles of Manchester city centre and were of relatively similar geographic and population size. It is important to note that the wider neighbourhoods in which these localities were embedded were not necessarily of equivalent deprivation rank and similar ethnic, social and economic compositions. The sampling procedure meant that the LSOAs were similarly deprived but the wider neighbourhoods in which they were embedded were somewhat socially heterogeneous. It was hoped that this method of sampling would give rise to a mix of network types. Although all LSOA areas were ranked as having high deprivation, these small administrative areas exist in larger neighbourhoods (whose overall IMD ranking differs from the LSOA level). In this thesis, LSOAs will be referred to using the name of the wider neighbourhood in which they are embedded. These are Harpurhey, Cheetham, Crumpsall, Moston, Collyhurst, Prestwich, Middleton and Blackley (the last four were also the sites of qualitative interviews).[15] Table 2 provides further information on the deprivation ranks of sampled LSOAs and the number of survey respondents from each locality.

Table 2: List of sample LSOAs and deprivation ranks

LSOA Code	LSOA Name	N	Wider Neighbourhood	IMD Score	IMD Rank	Top % most deprived nationally
E01005204	Collyhurst South	53	Collyhurst/Miles Platting	84.02	2	
E01005203	Harpurhey	49	Harpurhey	75.18	84	
E01005552	SW Langley	61	Middleton West	69.32	272	
E01005104	Blackley	61	Blackley	67.63	343	
E01005142	Cheetham	41	Cheetham	66.34	411	------Top 1%
E01005225	Lightbowne/Broadhurst Park	45	Moston	53.31	1732	------Top 5%
E01005165	Crumpsall	53	Crumpsall	51.22	2070	------Top 6%
E01005032	Rainsough	46	Prestwich	42.47	4011	------Top 12%

Source: IMD2007.

* IMD Score (highest = most deprived). ** IMD National Rank (lowest = most deprived, out of 32,482 LSOAs).

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[15] All neighbourhoods are under Manchester City Council, except Prestwich (Bury Metropolitan Borough Council) and Middleton (Rochdale Metropolitan Borough Council).

Using Census data from 2001 and local authority documentation we can provide some background on these eight local neighbourhoods from which the deprived LSOAs were sampled.

Collyhurst

Collyhurst is an inner-city residential area which borders with Manchester city centre. This neighbourhood is highly deprived. Indeed, the Collyhurst South LSOA of this study (E01005204) was ranked as the most deprived LSOA in Manchester and the second most deprived LSOA nationally in the IMD 2007. The neighbourhood has a predominantly white population (96.2%). Under half the working age population were employed (45.6%) at the time of the last census in 2001 and 10.6% of those who were not working were long-term unemployed or had never worked. Collyhurst was marked as a slum clearance area during the 1950s. During this time, many local residents were rehoused with a large number moving to Langley in Middleton, Wythenshawe in South Manchester and the bordering county of Cheshire. This local population shift as well as national economic change has also led to the closure of many local shops, pubs and factories over the past half-decade, resulting in a local decline of manufacturing employment opportunities and local communal amenities. Housing in Collyhurst is almost entirely Council owned (North Manchester Strategic Regeneration Framework, 2009:12). Collyhurst is part of the Manchester City Region Development Programme.[16] The Manchester City Council Local Area Plan for Collyhurst claims that the area still has some signs of a strong community identity but this is accompanied by high levels of deprivation and crime, stating that;

> The decline in local expenditure and population has had a profound effect on the community infrastructure and left certain parts of Collyhurst suffering from severe multiple deprivation. This has impacted heavily on the urban form and function of once-strong and vibrant neighbourhoods such as Collyhurst. (Collyhurst Local Area Plan, 2008: 19).

Harpurhey

Harpurhey is approximately 2 miles from the city centre. It is a residential conurbation with a long established local market, supermarket and local shopping centre. Harpurhey's population

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[16] Following the Planning and Compulsory Purchase Act 2004, City Councils are required to produce a Local Development Framework (LDF), which will set out guidelines for spatial development to include neighbourhood renewal, housing and residential environments. Manchester City Council has produced LDFs for Harpurhey and Collyhurst to cover the years 2010-2013.

is predominately white (97.1%). Harpurhey has a ranking of 62.41 on the Derived Index of Multiple Deprivation 2007 and a ranking of the third most deprived ward in Manchester. Along with Collyhurst, the area has seen a decline in local services and industry over the past 50 years and it is also part of the Manchester City Region Development Programme. Harpurhey/Lighbowne Local Plan verifies the extent of local deprivation across the wider neighbourhood:[17]

> 'The area suffers from high levels of unemployment - particularly amongst the 16-24 year old age group. In some areas of Harpurhey, less than 40% of residents of working age are in employment… and 50% of adults have no GCSE or higher education qualifications. The area suffers from poor health in general, with particularly high rates of limiting long-term illness and high rates of teenage pregnancy. These, combined with high rates of crime, further contribute to the levels of deprivation in the area.'

Recent regeneration has resulted in a new college and library and the Local Development Framework for Harpurhey also clarifies the need for selective clearance of back-of-pavement pre-1920s terraced homes and social rented housing stock.

Middleton West

The ward of Middleton West is part of the Middleton Township. The town has a well-established shopping centre, a well-connected bus station, many local pubs and several schools. As well as having a commercial centre, Middleton is an industrial area with many factories and warehouses. In Middleton West, 96.7 % of the population is White-British, this is higher than the figure for Manchester (81%). Though there have been some recent waves of immigration to the area, Middleton is relatively homogeneous in terms of class and ethnicity. Just over half of all working age people in Middleton are employed (53.7%). The largest proportion of households in West Middleton (46.2%) live in rented social housing and 40.3% own their own home. The LSOA of South-West Langley (E01005552) was ranked 272nd most deprived out of 32,482 national LSOAs.

Cheetham

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[17] Harpurhey/Lightbowne Local Plan is not yet available as a PDF document, web-view only:
http://www.manchester.gov.uk/info/500104/north_manchester_regeneration/2878/harpurhey__lightbowne/4

Cheetham is the most ethnically diverse of the study neighbourhoods and has a mixed population of white-British, white-Jewish, South Asian and Polish residents (although the sampled LSOA is predominately white). Compared to other neighbourhoods in the study and North-West averages, this area has experienced resident influxes and has a changing, transient population. The area encompasses several multi-faith schools, a shopping centre as well as several culturally specialist food and clothing shops. The Local Development Plan for Strangeways (2009: 14) makes reference to Cheetham stating that Cheetham is a 'main arrival point for migrants'.[18] The Collyhurst Local Development Plan (2008: 12) describes high levels of business and vehicle crimes, drug dealing and antisocial behaviour problems in Cheetham, claiming that a growing population is putting pressure on service delivery, particularly in terms of accessing education and leisure facilities.[19] Of the working-age population, 20% were classified as 'long-term unemployed' or 'never worked' at the time of the 2001 Census. This figure is much higher than in other sample neighbourhoods and above the Manchester average of 8.8%.

Table 3: Socio-economic statistics for the wider neighbourhoods in which the LSOAs are embedded

	Population	Employed	Long-term unemployed or never worked	Owner occupied housing tenure	Social or council rented housing	White residents	IMD Score (2007) Population Weighted Average
Collyhurst/ Miles Platting	13,905	45.6%	10.6%	32.3%	56.5%	92.6%	63.16
Harpurhey	8,834	47.35%	11.8%	32.6%	50.5%	92.5%	62.41
Middleton West	11,261	53.7%	7%	40.3%	46.2%	96.7%	57.13
Cheetham Ward	12,846	39.6%	20.0%	36.6%	40.7%	50.7%	54.28
Higher Blackley	12,332	56.5%	7.5%	48.4%	43%	87%	48.37
Moston Ward	13,957	59%	4.6%	66.8%	23.9%	94.1%	41.74
Crumpsall	11,363	58.5%	10.3%	52.2%	20.4%	74.7%	41.15
Prestwich	11,441	64%	2.6%	75%	13%	94.7%	19.16

Source: ONS, Crown Copyright, 2001.

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[18] Strangeways Local Plan, Manchester City Council, April 2009.
[19] Collyhurst Local Plan, Manchester City Council, June 2008.

Moston

Moston had a 94.1% white residential population at the time of the 2001 Census. Though over the past 10 years, Moston has experienced population change with an increase of ethnic diversity, following the settling of immigrants of African and Polish descent. In 2005, Moston was the only Ward in Manchester to experience a decline in residents and population change. 66.8% of residents own their home which is above the Manchester average of 41.1%) and 23.9% live in rented social housing (similar to the Manchester average of 28.6%). These data on home ownership suggest that although Moston is home to transient or mobile residents, there is also a stable, long-term resident base. In Moston, 59% of working-age residents are in employment, with 4.6% classified as 'long-term unemployed' or 'never worked' (this latter figure is just over half the Manchester average).

Higher Blackley

Higher Blackley has some population mix; 87% of residents are white (comparably lower than some other study localities). It has also has some class-mix and has become an affordable area for young, professional first-time buyers. In this area, 48.4% of homes are owner occupied and 43% are rented social housing. The North Manchester Strategic Regeneration Framework (2010: 95-96) describes Blackley and neighbouring Moston as 'the most stable part of North Manchester', claiming that:

Continued good management of stable estates addressing early signs of deterioration is required….Many of the issues in specific neighbourhoods across Blackley and Moston relate to social issues around crime, youth nuisance and anti-social behaviour which threaten to undermine otherwise healthy communities'. There still remain pockets of obsolete terraces and poor environmental quality which need to be addressed here to maximise the area's potential…the community here is very committed to the area and actively contributes to its stability.

Higher Blackley has some local shops, churches, schools, a library and health centre. At the time of the 2001 Census, 56.5% of working age residents were employed and 7.5% of residents had never worked or were classified as long-term unemployed.

Crumpsall

Crumpsall is situated between Cheetham and Prestwich. Like Cheetham, Crumpsall is known

for its ethnic mix; 74.7% of residents in this neighbourhood are white, lower than the Greater Manchester average. Yet Crumpsall differs from Cheetham in terms of its deprivation score and class mix. The wider neighbourhood of Crumpsall is the second least deprived of this study (Prestwich being the least deprived). A proportionally low number of people rent social or council housing (20.4%) and 52.2% of residents own their homes. Of working age people, 58.5% are employed and 10.3% have never worked or are long-term unemployed.

Prestwich

Prestwich is the least deprived neighbourhood of the study. It is also the most suburban neighbourhood, located five miles from the city-centre of Manchester. It is an area of class gentrification with a mix of working and middle-class residents. It is also well-known as the home of Manchester's affluent Jewish community. The area has a main high street with coffee houses, bars and chain restaurants, a modern city apartment block and Metrolink tram line. Prestwich has a mixed housing composition. Prestwich is quite ethnically heterogeneous with 82% of the local population being white-British; this is similar to the Manchester figure of 81% and lower than the North-West average of 92%. It has the highest employment rate of the sample neighbourhoods; 63% of working-age people are in employment, but this is still below the Manchester average of 74%. Most residents own their home outright or with a mortgage (75%) and 13% rent social housing.

Response rate

It was appropriate to sample egos independently for both survey and interview so that a diversity of network structural types could be captured. Participants for survey and interview were sampled independently; however, it is possible that some respondents knew each other and were part of similar social circles because sampling occurred at street level amongst neighbours. Interviewee respondents may have known one another as friends, neighbours or acquaintances (though this was not mentioned during interviews).

A total of 3,000 surveys were sent to random streets within the LSOAs and this initially produced a low response rate (13.6%) which was boosted by sending out subsequent reminder letters and through door-knocking. There were several issues that may be attributed to the low

response rate. Some residents were hard to access; the localities had not previously been the focus of academic research so there was some local scepticism. Another big barrier was formed by literacy issues and attempts were made to combat this by producing a simple plain language questionnaire, avoiding jargon where possible and assisting residents to fill this in. Some neighbourhoods produced a high number of responses initially whereas others were harder-to-reach.[20]

The aim was to generate around 400 questionnaire responses (these 400 egos would provide data on a maximum of 2,000 alters). Following door-knocking, this figure was achieved at 409 responses, at which point the survey data collection stage was halted.[21] The final response rate was equivalent to 3.4% of the total population (based on an average population of 1,500 individuals in each of the eight LSOAs, 12,000 residents) with a similar number of responses obtained from each LSOA (see ego compositions below).

Composition of survey egos and alters

In order to explore variances in forms of cohesion within a relatively socially similar sample, all ego-residents of this study were of white-British ethnicity and were residents of deprived urban localities. The findings and conclusions of this and other chapters must therefore take into account the overwhelmingly white bias in respondent sampling as well as acknowledging that a large proportion was unemployed or earning low-incomes and lived in social housing.[22] Despite this apparent social homogeneity within the sample based on neighbourhood deprivation rank and ethnicity, there were of course differences between individual residents. Certainly, quantities of cultural and economic capital varied across the sample, some

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[20] I did not keep figures on the number of responses achieved by locality after the first survey wave. However, there were some response differences between localities. Interestingly, Cheetham and Crumpsall produced the highest proportion of online responses and the lowest number of paper responses. The highest number of responses to the first survey wave came from Middleton, Prestwich and Moston. It was initially very difficult to recruit respondents in Harpurhey and Collyhurst, but these areas responded very well to subsequent door-knocking. In fact, across all localities there was, overall, a positive reaction to door-knocking People seemed to be more inclined to participate when I offered to fill-in the survey on their behalf.

[21] A total of 418 North Manchester ego-residents took part in the survey. After removing partial completions and non-valid responses, a fully usable survey sample of 409 ego-residents remained.

[22] As surveys were sent to random households and invitations to participate did not stipulate that the research was focused on white-British residents only, there were a small number of survey responses from non-white or non-British residents which were subsequently excluded from the sample. Only white residents came forward for interview. The high proportion of responses from people of white-British ethnicity (94%) was related to the predominately white composition of these areas.

individuals were dependent on social benefits and others had experienced social or geographic mobility.

Survey responses were quite equally distributed across the LSOAs; with the following proportions of surveys from each Middleton (15%), Blackley (15%), Collyhurst (13%), Crumpsall (13%), Harpurhey (12%), Moston (11%), Prestwich (11%) and Cheetham Hill (10%). All respondents were of working age, from 16 to 67 years old, with a mean of 31.86.[23] Although there was a slight bias in favour of female respondents (54.8%, n=224). A range of ego occupations was captured and classified according to Standard Occupational Classifications of the Office for National Statistics SOC2000.[24]

The occupational class composition reveals that egos were predominately lower-working class. The largest segment of residents was unemployed at 35.7%, followed by elementary occupations (29.5%); this category included a large number of warehouse workers, unskilled labourers, cleaners and domestic assistants. Sales and customer services occupations formed 15.6% of ego occupations; these were most likely to be lower-level service sector jobs in restaurants, bars, shops and call-centres. Ego-respondents with skilled trades formed 8.3% of the sample with administrative and secretarial staff in close numbers, at 7.8%. No respondents fell into the highest category, 'managers or senior officials', though 2.7% were employed in associate professional and technical occupations (for example, a web developer, a librarian, a psychologist and several high school teachers). Finally, 0.2% of respondents were students. These data on ego-resident compositions identify that the appropriate target sample of residents and neighbourhoods was achieved; North Manchester small area localities ranking highly in terms of deprivation with a resident sample that was mostly white, working age,

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[23] The variance in age was revealed through the distribution from the mean (standard deviation = 13.483) with most ego-respondents falling within the 18-46 grouping.

[24] The governmental occupational classification scheme was chosen for two reasons. Firstly, occupations of ego and alter were collected in the raw form of job titles. It was straightforward for the researcher to code these into the ONS-SEC scale. Secondly, although the ONS-SEC is relatively simplistic compared to other more academic scales - for example, the Weberian status-based Goldthorpe class scheme (Goldthorpe, 1987; Goldthorpe & Erikson, 1993) and Cambridge Scale (Prandy, 1990) attempting to apply these categories would have been problematic for this thesis given the additional variables required (for example, in this study data was not collected on alter educational qualification or marriage patterns). Also, though the thesis explores 'distance' between residents through patterns of social interaction, occupational categories are used to capture the nature of the sample, not as variables for analyzing social distance.

being predominantly of lower working-class or unemployed occupational status. So, using the IMD deprivation data for locality sampling and study data on resident composition, we begin with what appears to be a relatively socio-economically similar class and ethnic sample. It is not assumed in this thesis that the people and localities of this study are entirely similar, especially in terms of their experiences of urban cohesion, so the aim is to explore patterns of both similarity and difference emerging from the personal networks of this resident-ego sample group.

A brief look at alter compositions is necessary for comparison with the ego data set. A total of 2018 alters were named by the 409 egos.[25] Initial analyses of the alter data set revealed some compositional differences when compared to the ego data set. The age range was wider for alters (16-77 years) and the mean higher (34.08 years). As a consequence, distribution of age differed; there was more variation across age range for alters than there was for egos and a wider standard deviation (14.7 years). This was because in addition to including working age individuals, the alter data set also incorporated some retirees. This raised the mean age slightly to 34 years (from 32 years in the ego dataset). A histogram revealed that most alters fell in to the 18-50 age range, slightly older than the ego set where respondents mainly fell into the 18-45 year old category.

Table 4: Age compositions for survey egos and alters

	N	Min	Max	Mean	Std. Deviation	Variance
Alter age	2018	16	77	34.08	14.70	216.24
Ego Age	409	16	67	31.86	13.48	181.84
Valid N (listwise)	2422					

The consistency of gender compositions between ego and alter data sets was noteworthy. As with the ego data set, female alters outnumbered male alters (41.6% male, 58.4% female) so the proportions of gender compositions remained relatively similar between datasets. This proportional stability hinted at a possibility of gender homophily in the social selection of close-tie alters. Perhaps female egos had been more likely to select female alters, with similar trends

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[25] The study design allowed for five alters per ego (a maximum of 2045 alters) but as some egos named fewer than five contacts the final alter dataset was based on 2,018 individuals. The total dataset including egos had 2,427 nodes.

in gendered selection for men. On the other hand, another reason for the consistency of gender proportions between ego and alter samples could have been that the gender balance of social selection for men and women differed. For example, if one sex were to over-select from the opposite sex and the other under-selects, this may again produce equilibrium effects and stabilise the sample proportions whilst giving the impression of underlying homophily. Where homophily trends would show male egos and naming more male alters and vice-versa for women, differences in gender balances of alter selection would show that women and men name different proportions of male and female alters. Either way, overall, female alters were named more frequently than male alters.

Also noteworthy, was that ethnic diversity increased slightly in the composition of the alter dataset when compared to the original set of ego compositions. Although the alter sample was still predominately white (89.2%), non-whites contributed to 10.8% of alter composition as opposed to only 6.3% in the ego sample. These numbers are not starkly different but may point to some growth in ethnic diversity because some white resident egos were naming non-white alters. Although, the conservativeness of these relative compositions implies that ethnic homophily still plays a key role in the structuring of social relations for this sample of white North Manchester residents. Figures 5 and 6 visually represent gender and ethnic clustering in the personal networks using a sub-set of data.[26] The vertices (nodes) have been colour-coded but all edges have been removed to allow a clearer picture. Visualising these ego and alter datasets simultaneously allows for a general comparative assessment of how gender and ethnicity cluster or fragment in networks.

Figure 5: A sociogram of gender clustering in personal networks (red=female)

Figure 6: A sociogram of ethnic clustering in personal networks (grey=white alters)

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[26] It was not possible to visualise all 2,427 nodes of the dataset as the image was extremely dense and unclear. A random subset of nodes was included in the visualisation to allow for a general comparison between clustering patterns for ethnicity and gender.
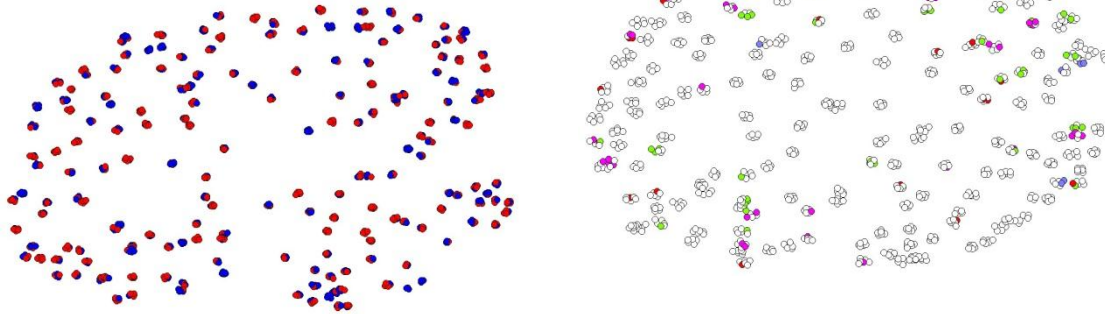
Figure 5 reveals that gender is quite equally distributed across these social networks; personal networks cross gender boundaries because males and females interact closely with one another. Looking at the data this way indicates that gender heterophily may be at work, rather than the initial homophily alluded by the descriptive statistics. Conversely, in Figure 6, ethnic variables display much more social fragmentation. Rather than observing non-white alters across many networks, ethnic mixing takes place in some personal networks but not others. Turning to the occupational class, there were differences between the ego and alter dataset. As with the ego data set, the largest category of alters were unemployed (24.4%), followed by those in elementary occupations at 19.9%. Unusually, there were higher frequencies of higher occupational class groups in the alter data set, than for egos. Associate professional & technical occupations formed a large 14.1% (compared to only 2.7% of 'professional' class ego-respondents). Of the remaining alters, 12.9% were employed in Sales & Customer Services, 7.3% were Students (HE) and 7.2% worked in Administrative & Secretarial functions. A further 6.4% worked in Skilled Trades, 4.9% were retirees and process, plant & machine operatives combined at just 2.8%. These results demonstrated that there was a different distribution of occupation class for alters, perhaps because some egos had named alters in higher class groups. This raises theoretical questions about the differential 'access' or 'reach' egos of similarly deprived residential areas have to alters at different social positions. This also prompts questions about opportunities and constraints upon social mobility and gentrification through network diversity (Burt, 2005; Woolcock, 2001). Chapter 6 picks up on these ideas.

In summary, the network compositions show ethnicity to be clustered, whereas gender was well distributed. A large proportion of egos are lower-working class, with the alter data set

comprised of slightly higher class groups. This suggests that some resident-egos in this study may have named alters at different class positions to themselves. However, class compositions between ego and alter data sets were not different enough to assert that these urban personal networks were heterophilous; rather most networks were likely to be class homogeneous.

2.3 Methods for data analysis

This study uses a mixed-method design and yields a range of data types. The analysis in this thesis uses individual attributes, ideational variables, relational network data and interview narratives. Therefore, multiple methods of analysis were required; these include Social Network Analysis, statistical analysis and qualitative analysis. Overlap between dimensions of cohesion involved mixing these types of data and analysis together (as illustrated in the analytical model). Chapter 3 analyses the spatial patterning of ties across the city using Social Network Analysis, but also brings in qualitative data to understand if these structures of interaction represent social closeness or distance. Chapter 4 is first focused on analysing structural cohesion in personal networks, then introduces a measure of spatial dispersion to explore the relationship between structural and spatial cohesion in order to create structural-spatial typologies from the data. Chapter 5 attempts to merge the three forms of cohesion, structural, spatial and ideational, by studying the framing of resident attitudes and practices in the context of their personal network typologies. To do this, Chapter 5 uses Social Network Analysis, principal components analysis and narrative analysis. Scott (2007: 3) describes the utility of using ideational data alongside relational data to highlight the "meanings, motives [and] definitions" behind network structures and subsequent applicability to typological analysis. The empirical chapters of this thesis attempt this mixed-method process by merging Social Network Analysis, statistical analysis and qualitative narrative analysis. The next sections will discuss each of these types of analysis in turn.

Social Network Analysis: personal and whole networks

This thesis uses relational data collected at a personal network level. Network data (collected by survey and interview) were assembled into adjacency matrices featuring symmetrical, undirected ties. Personal network analysis was undertaken using Ego-Net (McCarty, 2006). Some chapters visualise networks at aggregate levels, these were produced in UCINET

(Borgati, Everett & Freeman, 2002).

Personal network analysis maps sets of relations between a focal individual (ego) and his/her alters, as perceived from the subjective standpoint of ego. Personal networks are therefore constructed upon cognitive perceptions (Krackhardt, 1987). Personal networks of individual residents are sampled independently of one another (though interdependence between connected individuals within a personal network is assumed). Analysis is then undertaken across the sample of personal networks to identify the structures found within each network. Rather than being led by a priori assumptions about urban cohesion, this thesis is the result of primary fieldwork data on actual de facto ties between urban residents. A central aim of this thesis is to illustrate the variances of network structure, attitudes and practices within an apparently socio-economically similar sample. Chapter 4 uses SNA measures of structural cohesion across personal networks (in Ego-Net) to identify similarities or differences between resident networks and produces a set of typologies.

The study of personal networks is not only an adequate method to describe who ego is connected to, but also acts as a starting point from which we can explore the consequences of such connections (McCarty and Wutich, 2005: 83). Personal network mapping was developed in the work of British anthropologists seeking to understand how the form and composition of informal ties could positively or negatively impact upon individual and group outcomes. Chapter 3 attempts to understand the consequences of the spatial patterning of ties in terms of social closeness and distance (Blau, 1977a) and visualises these ties at an aggregate city-level in UCINet. Chapter 5 also explores implications of network structure. Here a two-mode network of affiliations between ideational constructs and structural-spatial types is undertaken (in UCINet) to understand the relationship between network structure, attitudes and practices.

Statistical analysis and Principal Components Analysis (PCA)
Elements of statistical analysis were undertaken in all chapters using SPSS (Statistics Package for Social Scientists, IBM), for example, descriptive statistics and analysis of spatial cohesion (residential homophily, geographic propinquity and spatial dispersion) in chapter 3 and for correlations between spatial dispersion and density in Chapter 4. The main use of statistical

analysis was to undertake a Principal Components Analysis (PCA) in Chapter 5. The PCA method will be discussed in more detail here.

Principal Components Analysis (PCA) is used in Chapter 5 to analyse ideational cohesion. Individual residents may be defined as ideationally cohesive (proximal in social space) if they share similar patterns of attitudes and practices.

PCA is part of an umbrella of descriptive methods (such as cluster & factor analysis) which reveal latency in complex data sets. The uniqueness of these methods lies in their capacity to describe patterns geometrically by locating each variable or unit of analysis as a point in a low-dimensional space. Applying a scaling method allows for data reduction whilst at the same time illustrates the complexity of theoretical concepts in operational practice by identifying a number of related variables that tap into one meta-concept. The focus here switches from network ties between people and/or localities (as in the preceding chapters 3 and 4) to indirect linkages between individuals based on correlations of attitudes, behaviours and networks. Residents who have similar attitudes and practices can be described as being ideationally cohesive, or proximate, in social space.

Constructing ideational components involves a higher level of abstraction from the original raw data to produce a social space in which everyday practices occur. PCA applies a matrix manipulation procedure to combine a barrage of related variables into fewer uncorrelated principal components. The PCA output then communicates this to the researcher using a condensed image of this object as a lower-dimensional summary-set of components, in this case, constructs of ideational cohesion. The most important dimension is the first principal component, carrying accountability for the largest possible segment of variability, followed by other components incorporating the remaining variability in a descending order of importance. Statistical variance scores reveal the degree to which various items are correlated to one another and to what extent they address several latent dimensions. The latency is used to reveal how micro-level attitudes and practices of individuals construct a macro-level ideational cohesion or 'conscious collective' (Durkheim, 1893/1933).

Drawing on the work of others using ideational variables to study factors of urban cohesion (Riger and Lavrakas, 1981; McMillan & Chavis, 1986), a PCA is conducted in order to simplify the variables of the survey attitude and practice questions to identify a set of latent ideational components. These ideational constructs could then be analysed alongside network typologies in Chapter 5 (as described above).

First the 53 interview residents were organised into 3 categories based on their network structural type; A, B or C (derived in Chapter 4). I printed out visualisations of each ego-network graph and grouped these according to typology and spread these into three piles on the floor. Next I conducted a PCA which generated Anderson-Rubin (A-R) scores for each resident based on their responses to the attitude/practice section of the study survey. The A-R scores therefore allowed me to summarise the resident-interviewee's alignment with each of the 4 principle components. From this cross-analysis data of types it was possible to assess the link between network structure, attitudes and practices. For example, it became evident that individuals with Type A (dense-localised) networks scores higher on components 2 and 4 (Sense of community and Local embeddedness), than did residents with more spatially dispersed networks (Type C). Similarly I was able to establish that individuals with looser, less tightly-knitted network types were more akin to using their social networks to access job information and opportunities.

Qualitative narrative analysis

Rather than following principles of traditional qualitative analysis, in this thesis, resident narratives were drawn upon to analyse social networks qualitatively (Emirbayer and Goodwin 1994; Mische 2003; Crossley 2009), a perspective stemming from the methodologies of British 'Manchester School' Anthropologists (Barnes 1954; Bott, 1957; Mitchell 1969).

Qualitative analysis of interview data was crucial to understanding, fleshing out and illustrating the subjective motivations and lived experiences behind structural and spatial elements of network cohesion. The relational and ideational data provided excellent overviews or snapshots of structural forms but prompted further questions about the nature of urban cohesion and fragmentation. Qualitative analysis of personal networks was necessary to understand the processes of cohesion from the lived experiences of residents. For example,

Chapter 3 draws on interview narratives to understand the spatial patterns of ties across the city. Here, qualitative perceptions of social closeness and distance were used to provide insights that were not available through quantitative data alone. Qualitative interviews were recorded, partially transcribed, codified and analysed without software. I felt it was much more appropriate to use coloured highlighter pens to manually code and dissect the qualitative material and then interpret it alongside the other forms of data analysis. This was possible with a sample of 53 interviews and allowed me to remain close to the data.

In Chapter 5, elements of the PCA and SNA were combined with qualitative analysis to investigate similarities and differences within and between types (see Chapter 5). After highlighting relationships between the principle components and network typologies through cross-analysis of network structure, attitudes and practices, I next went through the interview transcripts and manually coded sections relating to four ideational constructs of the PCA. The interviewee narratives added a further level of complexity to the analysis because it became possible to explore how and why residents of the three network typologies aligned with the same or different ideational constructs. For example, cross-checking between network typologies and the PCA scores we see how residents with two different types of networks associate highly with the first component 'General neighbourhood satisfaction', yet further exploration of the resident narratives reveals that each group provides distinct ways of rationalising this satisfaction. Using their own words as justification, I was able to better understand how residents interpreted, constructed and practiced urban attitudes in the context of their network structure. In effect, how these residents acted out urban cohesion and how their networks were pivotal in such choices and constraints.

Interview narratives offered a depth of insight that helped to better interpret spatial and structural processes resulting in a balanced, valid position from which to tell 'network stories' (White, 1998). The process of mixing methods was also useful in acting as a quality-check procedure to test the validity of the survey data against the interview data; making sure the qualitative story made sense against the structural picture. The ideational and relational data provide interesting detail about aggregate level structures whilst the qualitative data illuminate why and how these structures had been sustained in everyday practice from the micro-

perspectives of individual residents.

2.4 Framing knowledge

In addition to discussing the methods used to collect and analyse data, it is important to outline the theoretical or philosophical position from which knowledge has been approached. This part of the chapter attempts this by first providing an outline of epistemological and ontological issues, followed by an acknowledgement of the assumptions on which this research is based.

Ontological and epistemological considerations

This section discusses the choices made in assembling the methodology. I outline the path linking the selection of theory, methods and analysis by discussing the ways that knowledge can be built about the social world (epistemology) and describing the units or entities constituting this social world, which allow it to function (ontology).

This thesis is first and foremost concerned with analysis of interdependent relations over analysis of independent categories; the perspectives and arguments have been built from a relational epistemology. The framework also draws on other influences to produce a critical analysis of networks informed by structuralist and interpretivist-constructivist theories. A structuralist paradigm drives the mapping of networks and underpins questions about how individuals become bonded or divided in structures of interaction. Additionally, an interpretivist paradigm is used to claim that the utility of knowledge is geared toward understanding (*verstehe*n), but the subjective nature of research means that knowledge lacks predictive power and therefore is not theoretically generalisable. Whilst this study does not seek universality or undertake modelling techniques, it does claim that interaction is structured by social networks, and that the activities of individuals can be constrained or enabled within these contexts. As well as drawing on measures of social network and statistical analysis, attempts to illustrate structural processes of cohesion are delivered through the words of those who contribute to the these spatial, structural and ideational structures, so understanding is obtained through the perspectives of the experienced. This thesis makes use of different methods and in the selection of these methods, ontological and epistemological choices and

priorities are made clear. This section advances a position from which the research begins and presents the methodological decisions deriving epistemological and ontological foundations of the study.

Relations, ties and nodes

A principle aim of this thesis is to explore how patterns of interaction between residents can help us better understand urban cohesion. Accordingly, the research illustrates cohesion and fragmentation through interactive structures (Blau, 1977a). Particularly, a Social Network Analysis (SNA) based methodology was selected as a fit-for-purpose and original way of approaching the research topic. In addition, when combined with qualitative and statistical analysis, SNA is well suited to critically assessing the consequences of relational structures and thus has emancipatory potential.

SNA is both a theory and a methodology, a perspective and a paradigm; it is an ontological framework accompanied by a set of tools and techniques that allow researchers to make sense of the world (Martin & Wellman, 2010). Taking a social network approach therefore involves making important philosophical decisions about the elements constituting social reality and the ways in which research can build meaningful knowledge about these units of analysis. Social Network Analysis focuses on relations as units of analysis. It therefore offers 'a theoretical alternative to the assumption of independent social actors, and a framework for testing theories about structured social relationships' (Wasserman and Faust, 1994: 7). This relational approach is exactly what makes SNA based methodologies stand apart from research on independent categorical units. By switching focus from categorical units to networks and mapping patterns of relations, Social Network Analysis can uncover elements of social structure not immediately visible through other methods (Cross, Parker and Borgatti, 2002). Categorical units (nodes or vertices) also feature in SNA studies, although the primary emphasis of SNA rests in examining the co-dependency of nodes, so it is the structure of relations binding nodes that is of key ontological importance. This thesis presents networks with two types of node, networks of residents and networks between neighbourhoods. Nodal attributes are brought into question, for example, class and deprivation, but rather than lead the study, these individualistic categories or variables help to better interpret the network types arising from the analysis,

acting as a backdrop to the findings.

Pattern, complexity and levels of analysis

This thesis features an analytical model based on interrelated forms of cohesion and a view of social networks as complex but patterned. These assumptions warrant brief justification. There have been recent contributions to the field of social complexity, including theoretical applications of complexity theory and network analysis in the social sciences (Luhmann, 1986; Byrne, 1997, 1998; Urry, 2004; Walby, 2007; Crossley, 2010); spatial dimensions of social complexity (Urry, 2000; Edmonds, 2003; Dorling, 2004; Urry, 2005) and social physics (Watts and Strogatz, 1998; Barabási and Albert, 1999; Watts, 2003). Network theory and complexity theory both aim to identify the emergence of patterned macro-structures from seemingly chaotic local interactions and also explore how macro-level conditions contribute to, or constrain, micro interactions. Events of activities in one part of a network may have consequences elsewhere (Moreno, 1934; Schelling, 1969, 1971, 1972; Christakis & Fowler, 2009). In his study of urban social networks, Laumann (1973) was concerned with relationality and interdependency and posed questions about how the macrostructure of the city might be germane to the microstructure of interpersonal relations. Of interest in this thesis is how micro-patterns of network and ideational of cohesion operating at the level of individual agents (egos) contribute to wider macro-structures of urban cohesion (for neighbourhoods or North Manchester as a whole).

The analytical framework of this thesis captures cohesion through interplay between constituent spatial, structural and ideational forms and is concerned with relationality in complex patterns of resident interaction. Social Network Analysis often explains what has already been created and despite advances in modelling, cannot make clear predictions under the conditions of complexity, chaos and contingency. Rather than predicting social behaviour, it is certainly worth looking for patterns in social structure, which may help address social issues and explain differential urban outcomes. How is social order maintained in conditions of complexity and diversity? Chapter 3 explores the dispersion of social networks in physical space; asking are personal networks spread in a linear fashion determined by geographic propinquity (does the number of alters decrease with distance from ego)? Or is the

arrangement of ties more complex, ordered beyond geographic constraints, perhaps influenced also by social factors? Chapter 4 attempts to understand the relationship between spatial and structural cohesion through correlating density and spatial dispersion and the production of a typology.

 The results contribute to debates on whether personal networks are random and fluid (Bauman, 2000, 2007; Beck & Beck-Gersheim, 2000) or habitual, socially and spatially constrained (Feld, 1981; Bourdieu, 1986). Chapter 5 explores whether 'switching' between narratives (Mische & White, 1998) is easier for some individuals more than others. The emphasis on patterns and complexity is to propose that different personal network structures and forms of cohesion may be found within this socio-economically similar sample group, but this diversity will be structured, not random.

Network context: deprivation, class and homogeneity
Epistemologically, adequate attention must be given to the issue of network context because social networks are not only embedded in wider networks, but they are also influenced by environmental, institutional and cultural contexts. There is no established method for analysing cohesion and fragmentation between residents. Interpreting levels of cohesiveness between social agents depends very much on the groups, structures and relations to be analysed. So, in order to understand networks we must also have knowledge about the contexts in which these relational structures have evolved and are embedded (Faust & Skvoretz, 2002). As areas of deprivation, the socio-economic specificity of the sampled localities will form an important backdrop to the interpretation of this data. Also, the residents sampled from within these localities are all white, working-class or unemployed. There are also some small differences of internal composition between the localities; some have very homogeneous class and ethnic resident populations, whilst others are socially mixed. The context specific nature of these personal networks means that care has been taken in interpreting the data and claims made beyond this particular sample have been limited.

Moody & White (2003: 39) acknowledge that their theoretical construction of 'structural cohesion' was derived in the context of basic topological features stemming from their own

investigations (networks of high school friendship and interlocking directorates), defined "without respect to the particular features that might be relevant in any other given case…researchers may modify aspects of our conception of cohesion as theory dictates". Friedkin (1981: 43) also acknowledges the sensitivity of empirical research settings, adding that application of multiple structural properties will provide better indicators of cohesion than any single property alone, though "it remains to be determined which among the many possibilities ought to be included in such a battery of indicators". It is prudent to argue that interpreting measures of cohesion depends very much on the sample in question and the wider contexts in which these data are embedded.

As well as the specific issues of class and local homogeneity, the wider urban context of deprivation across all localities is likely to be important in influencing findings. Feld (1981: 1016) claims that social and spatial environmental contexts, or 'foci', determine the organisation of social ties around specific activities and "without such contextual information, conclusions about networks and their consequences are likely to be incomplete and even misleading". It may be that, contextual idiosyncrasies in North Manchester create patterns of interaction that may differ from network patterns found in other cities. However, there may be distinctive patterns inherent in this data set relating to the context of deprivation and which may be comparable in other similar contexts. Rather than providing generalisations about urban networks, it is hoped that this study may draw attention to important spatial, structural and ideational processes underlying this specific resident sample as well as highlighting interaction patterns in the context of urban deprivation.

The intersection between network structure and individual agency
Mische describes how SNA influenced the growth of academic research involving 'relational sociology' (Mische, 2011: forthcoming), a perspective that allows a role for agency and culture in structural analysis (see also Emirbayer & Goodwin, 1994). In this thesis, attempts are made to study structure from macro and micro perspectives. It is acknowledged that whilst structure can constrain individuals, it is also constructed by them and some people may actually be enabled by their structural position. Despite some structuralist accounts claiming that the social world is made of objective structures of relations and individuals are constrained to act within

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the boundaries of those relations, the stance of this thesis permits agency (Giddens, 1984). But agency and reflexivity is structurally limited and accessible to some more than others. Though some agents are able to manipulate their personal networks to secure opportunities, most actors behave within the confines of structural constraint (Bourdieu, 1986; Burt, 1992). Therefore, structure and agency in social networks operate under conditions of inequality; different people have different tie structures and network compositions, but this diversity is structured not random.

The study takes a critical perspective to focus on informal and mundane interactions in an attempt to uncover elements of urban cohesion that may not be obvious, even to those reproducing structures of interaction. As such, the research paradigm recognises that social action can be habitual and unconscious (Bourdieu, 1986). Individuals are still agents contributing to urban cohesion structures through their collective patterns, but the capabilities of agents to act against structure is not guaranteed. Interactions are intersubjective (Mead, 1934; Goffman, 1974; Jenkins, 2003) and underpinned by perceptions of social distance. Intersubjectivity exists in the sense that in perceiving the social world, multiple individuals may share the same reference point. They may come to some agreement on how to interpret a situation and as a result, respond to it in similar ways. However, Bourdieu's structuralist approach is useful in adding the caveat that to share similar reference points, individuals must also share similar positions in social space.[27] For Bourdieu, multiple interactions in different 'fields' forms a particular context-specific 'habitus', individuals must learn to mediate between conflicting environments in constantly adapting fields. Bourdieu also, therefore, acknowledges the difficulties involved in acting against structural constraints, it is not so simple to switch identities (Bauman, 2000, 2007; Beck-Gershein, 2000) and to jump between social circles and narratives (Mische & White, 1998).

This thesis takes a relational paradigm laden with realist assumptions about structural constraint and inequality but borrows in part from interpretivism and constructivism to acknowledge the roles individuals play in creating or upholding social structures (albeit within

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[27] Here closeness in 'social space' is not defined in a network sense (through connectivity), rather Bourdieu locates individuals as proximal based on common ideational categories, for example, similarity of attitudes, tastes and practices.

constraint remits). The choice of methods in the study is also informed by its critical stance. An interest in patterns of collective forms of (inter)action and structure lend themselves to Social Network Analysis and statistical analysis, whereas qualitative methods are used to help understand these structural patterns through the 'narratives of ties' (White, 1992: 67). Whilst ultimately interested in relations rather than individuals, this thesis does attempt to engage with the role of agency in social networks. In particular, chapter 3 uses qualitative interviews to help make sense of observed structures of cohesion and fragmentation through manifestations of social closeness and distance in urban space. Chapter 5 merges relational data with narrative analysis to study the link between network structure and ideational frames of urban cohesion. Chapter 6 draws this combined analysis of structure and agency back in reference to the broader literature of Chapter 1 in an exploration of how micro level activities contribute to macro-level patterns of relations, using examples of the different roles residents play in urban cohesion.

Derived assumptions

The framework of this thesis has been informed by a set of assumptions guided by the review of literature in Chapter 1 and choice of methods. Knowledge obtained through the research process was therefore generated or constructed from the point of these prior assumptions (Hammersley, 2000; Holloway and Jefferson, 2000). The assumptions are now presented briefly in four main sections below.

Assumption 1: Cohesion between residents has three ontological dimensions; spatial, structural and ideational. Paying attention to the relational interplay between these network contexts is crucial (Faust & Skvoretz, 2002; Entwisle et al, 2007). As well as the relationship between ontological dimensions of cohesion, attention is given to the structure of interaction between residents. The thesis therefore requires a relational analytical framework.

Assumption 2: There will be a relationship between spatial cohesion and structural cohesion in resident networks. That is, tight-knit, densely connected tie structures are linked to network localisation. For the purpose of this thesis, it will be interesting to note how these forms of cohesion are distributed across a sample of resident networks. The relationship between social

and geographic space produces structure in social networks, for example homophily and propinquity effects (Moreno, 1947; Festinger *et al*, 1950; Schelling, 1971, 1978). This patterned organisation can constrain interaction in physical space (Feld, 1981) and may contribute to social distance between resident groups (Park, 1925).

Assumption 3: This thesis proposes that ideational structures of cohesion (collective attitudes and practices of residents) may be linked to structural-spatial personal network types because attitudes and practices are formed and reproduced in network contexts (Knoke & Kuklinski, 1992; McPherson, 2001). The link between normative rule following and network density has been well-illustrated (Durkheim, 1893/1933; Simmel, 1902; Festinger, Schachter & Back, 1950; Cartwright & Zander, 1960; Heider, 1958; Newcomb, 1961; Coleman, 1990; Granovetter, 2005). As well as attitudes, social networks influence the habitual embodiment and reproduction of practice (Crossley 1996; 2001; 2006).

Assumption 4: Social networks between residents and neighbourhoods are manifestations of social closeness or distance in urban space (Blau, 1977a). Empirical observations of high proportions of strong-tie interactions between neighbourhoods may connote social closeness, manifested as intrinsic ideational features of common identity, shared history and trust. Conversely, an absence of network ties reveals fragmentation and is suggestive of social distance between individual and localities. Building on social capital theory, localised ties of residential homophily may create spatial 'bonding' capital, whereas geographically dispersed networks between residents of different neighbourhoods may provide spatial 'bridging' or 'linking' capital.

Assumption 5: This thesis assumes that although social networks are complex, they are structured, not random or chaotic. This differential structuring makes networks highly contextualised (Faust & Skvoretz, 2002). A main aim of this thesis is to look for different forms of cohesion and fragmentation within a supposedly socio-economically similar sample of residents. Variances in measures of spatial, structural and ideational cohesion in personal networks will be interpreted in context.

Assumption 6: Patterns of cohesion and fragmentation in resident networks will have urban consequences relating to social capital and social action. The non-random and unequal distribution of network ties will result in differential opportunities and constraints for individuals and neighbourhoods, particularly relating to mobilisation of social capital and potential for social action. Residents will have different capacities for forming networks and this is particularly relevant for understanding density and spatial dispersion in personal networks (Fischer, 1982; Urry, 2010). It is also proposed that there may be class and locality effects underpinning cohesion and that these differences may affect the activities of individuals (Bott, 1957; Laumann, 1973; Atkinson & Kintrea, 2001). Balances of spatially conceptualised bonding, bridging and linking ties may have implications for neighbourhood social capital.

2.5 Limitations and Caveats

This section explains the limits of the research design and implications upon generating inferences and conclusions. The first section discusses reliability and validity, this is followed by methodological limitations and finally a discussion of ethics is provided.

Reliability and validity

As some data collection and analysis was undertaken using quantitative methods, it is worth making a few notes on the issues of reliability and validity, particularly in reference to the survey data and methods of Social Network Analysis.

Admittedly, research is not value-free and subjective bias exists. This study does not attempt to produce generalisable findings; rather it presents some contextualised findings relating to this particular data set of urban personal networks from 'deprived' localities. In this study, validity was not defined by causality but sought through attempts to best approximate social truths (Cook & Campbell, 1979). The empirical findings of this thesis are presented in a top-down manner; that is analysis of macro or aggregate structures and patterns are provided first, which are then followed by qualitative explorations. Choosing survey methods was conducive to achieving a large sample, through which patterns and structures of cohesion could be studied. The structured survey was designed to achieve consistency by ensuring that the same questions were asked of each resident-respondent. As previously mentioned, some piloting of the

questionnaire was undertaken to assess whether the survey questions were interpreted reliably by different residents. Indeed, the use of multiple datasets increased the validity of researcher inferences and conclusions. In Chapters 4 and 5, analysis of structural and spatial cohesion in resident networks is undertaken across two different data sets; the small survey networks (maximum of 5 alters) and interviewee networks (between 7 and 58 alters). Interestingly, both samples revealed similar distributions of scores for structural cohesiveness. This type of mixing and cross-checking of data sets was integral to the design and execution of the research. The empirical content of the thesis has been generated inductively and is presented to the reader in a step-by-step way, so that the direction of reasoning is clear. Accordingly, each chapter builds on the findings of preceding sections.

There are also several drawbacks of the Social Network Analysis method that may hinder reliability and validity. The network data and sociograms in this study were collected at a single time-point so are a temporally defined snapshot of relations as they existed at the time of data collection. Some networks may be more dynamic than others, but even networks of action that are constrained by processes of social reproduction are also subject to change via agency. In defence, the same can be said of any sort of data – even longitudinal data are a set of multi-snapshots, not continuous streams of data. The thesis makes an attempt to embed longitudinal legitimacy in the dataset through the use of qualitative interviews. Much of the qualitative data involves discussion of attitudes, social identities and habitual practices, rather than constantly shifting motivations and actions. The inferences in this thesis result from using qualitative data to make sense of network structures.

The personal networks are also subjectively defined from the viewpoint of North Manchester ego-residents. As stated previously, social networks are based on cognitive perceptions rather than being an objective measure of relations (Krackhardt, 1987) and subsequently, recall issues are problematic for reliability (Killworth & Bernard, 1983). This is particularly the case when egos are asked to provide information on relations between alters (alter-alter reporting). Depending on the specificity and complexity of questions asked, ego may not be able to provide accurate answers. For example, it would be relatively simple to ask ego about ties between alters based on a tie definition of 'knowing each other' in order to calculate density. It would be

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more problematic to ask ego to comment on other types of alter-alter tie classifications, such as those based on shared opinions or attitudes or even asking ego to weight the intimacy of relations between alters. The best approach when researching alter-alter relations would be to ask alters themselves; but this process is extremely time-consuming and is beyond the resources of most studies (including this one). In this study, it was necessary to measure network density so collecting information on alter-alter ties was crucial. Resident-respondents were asked whether a tie existed between alters in their personal networks ('do a and b know each other?), egos were not asked to rate or rank these ties. It seemed reasonable that residents would be aware of which contacts knew each other and given the relatively small size of the personal networks in this sample, it is likely that resident respondents were able to assess alter-alter density with a high level of accuracy (survey, <5 alters; interviews, n<58 alters). To avoid over-burdening respondents, a choice was made to limit questions about the nature or quality of ties and instead focus on the presence or absence of relations.

There was also a chance of ego-respondents knowingly providing misinformation. Exaggeration of network size may have been probable if respondents felt the need to appear popular or well-connected. As the interviewer, I abstained from communicating any response expectation during the interview process; for example, by commenting on average number of contacts named by other respondents or using a pre-numbered sheet to enter alter names. Still, in instances where respondents named very few contacts, name generators were rephrased as prompts which may have encouraged some individuals to continue naming alters that may have otherwise been omitted from their network.

There are common issues faced when using name generators, particularly definitional problems and ambiguities around certain terms. Selecting a name generator method is extremely important in framing the sample of alters to be included (and excluded) and also for defining what is meant by the term 'network' within the parameters of a particular research project. Significant alters may be omitted due to the pitching of the name generator question. It is easier to identify kin or co-workers compared to acquaintances. Likewise, multiplex relations encourage similar considerations; if asked to name 'friends' can we include family members? The same is true when asking about 'people living in your local area' without defining what

exactly is understood by the term 'local area'. This study has allowed an element of subjectivity on the part of the respondents interpretation of 'important' and 'frequent' alters. Questions may be biased to include some sub-sections of a personal network at the expense of others. Measures of affection, such as 'close to' or 'best friend', tend to be personally construed and the validity of the data may be compromised by subjective misinterpretations by both the respondent and the researcher.

Methodological limitations

The selection of some paradigms over others inadvertently results in sacrificing some quality of data over another. This section describes the general limitations of this thesis resulting from methodological choices.

The thesis considers inequality and constraint from a relational viewpoint not a traditional structuralist perspective. Consequently, the thesis is focused upon network structures and limited in attention to forms of inequality based on socio-economic structures such as gender, class and ethnicity. Though these issues are mentioned in brief, they are not fully explored. It is the aim of this study to focus on relational structures, though some discussion is provided on the intersection between relational structures and socio-economic structures (for example, in Chapters 3, 4 and 6 there is some discussion of class and locality effects).

The research design and combination of methods in this thesis is somewhat unorthodox, not only mixing Social Network Analysis with qualitative analysis, but by also adding a further element of complexity through statistical data. Merging different types of research perspectives and data was difficult; particularly, shifting from objective to subjective positions. As such, this may have hindered validity of inferences made at some points. One example is illustrated in Chapter 3, where I (as the researcher) was depicted as an outsider, without local knowledge, in resident narratives ('don't you know?', 'can't you hear?'). In this instance, I was in a strange position of attempting to interpret structural and spatial patterns in resident networks using statistical and relational measures, but still required sufficient knowledge of local, subjective perspectives to understand these patterns and structures. Reflecting upon this, it became clear

that despite having access to a range of 'objective' statistical and relational tools, interpretation of these networks needed to be context specific. Without the qualitative narratives of residents, I would not have been able to properly understand these structures of cohesion and fragmentation in a sense that was meaningful to the residents. Indeed, the final combination of analytical methods provided the optimum way to address the research questions in a way that was true to the data.

As well as encountering problems with developing a research stance or position, it was also difficult to create methodological coherency when merging the different data types. This thesis seeks to find structure and patterns in complex networks of human interaction, but does not undertake a traditional Social Network Analysis of the problem. In an attempt to overcome structural determinism, I also try to understand these structures of cohesion between residents from micro-level activities. Subsequently, the thesis may be viewed by some as falling victim to a structure-actor paradigm, rather than taking an overtly structuralist, network analysis or, interpretivist stance. In fact, the research design actually began as focused on network structures, but it was necessary to conduct interviews during a second stage of data collection as it became apparent that these personal networks would be best interpreted in qualitative context. This engagement with structure alongside qualitative difference is affirmed by the methods of classification and categorisation undertaken in each of the empirical chapters.

Perhaps there is room for non-traditional Social Network Analysis research. There have been calls for Social Network Analysis researchers to critically and reflexively examine the structuralist base of network research and move toward a poststructuralist analysis (Breiger, 2002; Emirbayer & Goodwin, 1994; Mische & White, 1998; White, 1994). Such analytical developments would see progression from stable, objective, concrete, universal, deterministic perception of relations in favour of dynamic, agency, context-specific network analysis to include qualitative aspects such as culture and symbolism. Indeed, recent calls for mixed-method approaches to the design of social network studies have realigned the analysis of relational data with Bourdieuian theory and certainly widened the potential for agency in networks (Bellotti, 2011; Crossley, 2010; Edwards & Crossley, 2009).

This study explores the links between network structure and ideational indicators of urban cohesion but there are several caveats to the findings. Though quantitative and relational methodologies are used to derive classifications, correlations and typologies, the associations made are entirely qualitative. This is because social network data are incredibly context dependent and therefore difficult to reliably and confidently assess through statistical significance and generalizability.[28] Still, these associations are nonetheless interesting and shed light on how residents with different network structures may perhaps play different roles of urban cohesion. Indeed, in Chapters 3 and 6, some qualitative associations are also drawn between network structure, class and local deprivation. These linkages are reported not only because they were empirically evident, but because they provide a back-drop to this much contextualised data-set and avoiding reference to these issues would have resulted in a misleading interpretation. Instead, the aim is to provide the reader with a comprehensive picture of findings in the order and context in which they were observed.

Ethical issues

There were two main routine ethical matters for consideration. The first was related to data collection, storage and confidentiality, and the second concerned collecting information on consenting research participants and third party network contacts.

1. Data collection, storage and confidentiality

Data was collected by survey and semi-structured, face-to-face interview. Posted surveys were accompanied by an information leaflet with contact details. Residents who expressed an interest in particpating in interviews were sent a confirmation letter on University of Manchester letterhead and during the interview were provided with an information sheet and consent form, which assured confidentiality and anonymity of information and made clear the right of the respondent to withdraw from the project at any time. Tape recordings and questionnaire responses were held on a password-protected computer and/or in a secure filing cabinet. The raw data will be destroyed after use.

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[28] Although the ego-network data were sampled randomly, the interview network data were not. Social network data violate conventional criteria of random sampling so statistical significance must be approached cautiously. For the same reason, predictive power and generalizability are also limited though methods have been developed to address this issue, for example, stochastic models, ERGMs. Subsequently, network dynamics are often case-dependent, providing associations between variables but not clear cause-effect analysis.

2. Information on consenting research participants and third party network contacts

Residents were asked about their social network contacts (alters) and also asked to provide some socio-demographic details on their named contacts. This, a methodology is central to the social network approach but means that the researcher receives information on third party individuals without their prior consent. This ethical issue has been discussed, not only with regard to collecting information on non-consenting alters, but also with regards to ambuguities surrounding ownership of the data (Kadushin, 2005; Klovdahl, 2005). In the interests of protecting individuals from harm or distress, Borgatti & Molina (2003: 342) advise that 'anonymity can be addressed by offering confidentiality—all analyses and reports generated from the data will use disguised names or untraceable identification numbers'. This study does not name individuals or LSOAs so it is hoped that this level of anonymity is sufficient, especially when labelling areas as 'deprived'.

There were some ethical issues arising in the field, which may be specific to this study, but perhaps warrant further mention. Firstly, there was an initial difficulty in communicating the purpose of the research in terms of local impact over academic or policy justification. Most residents were not interested in taking part for academic or research purposes; rather, they were more likely to take part if they perceived me to be credible and trustworthy, or if they felt the research had local importance. Secondly, some residents were initially resistant and asked if I was working with the local authority or police. Assurances of impartiality, confidentiality and anonymity were important. I suspect the response barrier might have been more evident in this research due to the specific nature of the sample and the context of neighbourhood deprivation. Indeed, some residents did not like their area to be described as 'deprived', some felt this label was unfair and there were instances of defensiveness on the issue (see Chapter 5).

The study may be been hindered by an unfamiliarity with social network studies and a general lack of academic research in the localities. Residents were also concerned about providing data on alters. These worries were again related to the personal nature of the information being offered. The information collected was not personal in the private or secret sense; rather some residents were sensitive because the questions were about themselves, their friends and family. The SNA method of asking about personal relations was interpreted by some as more intrusive

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than asking about attributes. The pilot study showed most respondents to be unsure about the social network method, some residents felt it was particularly 'personal' and did not understand how their network information could have any useful purpose for research. As a result, additional time was spent explaining the aims and objectives of the study, the purposes of collecting data on alters and assuring respondents of confidentiality and anonymity.

Summary

This chapter has attempted to set out the methodological rationale for the study. The first section presented a set of research questions and an analytical model to describe the structure of the thesis and reveal how the three forms of cohesion fit together conceptually. The second section was focused on eliciting personal networks and delineating boundaries. Details were provided on the sampling of localities (LSOAs) and residents, response rate, data collection tools and name generators. The third section switched to the methods for analysing data with descriptions of Social Network Analysis, statistical analysis and qualitative analysis of narratives. The final section discussed the limitations of the study, particularly in terms of reliability, validity and ethics. A set of ontological and epistemological issues were described to illustrate the methodological choices made regarding elements constituting the social reality and the tools to obtain knowledge about the world.

The next chapter begins to introduce the empirical data and analysis, focusing upon patterns of spatial cohesion in urban networks.

CHAPTER 3: Patterns of spatial cohesion: influences of geographic propinquity and social distance in resident networks

Chapter overview

Analyses of social networks and studies of urban cohesion are often undertaken without proper reference to the social and spatial contexts in which resident relations occur. The main purpose of this chapter is to address this issue by studying the geographic patterning of resident ties in urban space whilst also explicating important social factors contributing to the evolution and maintenance of these networks. Here I attempt to address the link between spatial cohesion and ideational cohesion by asking, how do social space and geographic space combine to create and reproduce patterns in urban social networks?

The chapter presents some empirical illustrations of social networks with qualitative narratives to unpack the motivations behind trends of urban cohesion. The chapter is divided into three sections. The first section begins with a macro-level picture of the spatial distribution of resident ties across the city. The second section explores the importance of geographic propinquity for these urban personal networks. Geographic propinquity is analysed at three spatial levels; residential homophily (ties to alters in the same immediate locality as ego), ties to alters living in neighbouring localities and ties alters residing in other North Manchester areas. The aim is to establish whether the proportion of alters decreases with geographic distance. The final section analyses the social conditions encouraging spatially dispersed ties to East, West and South Manchester. The interplay between social and geographic space is discussed throughout the chapter. The findings are summarised in the conclusion.

3.1 The spatial patterning of resident networks: ties across the city

This section considers the macro-organisation of resident networks across urban space. The aim is to provide the reader with a visual reference to the aggregate structure of resident personal networks across the city and a context for interpreting data in the rest of the chapter.

In this first section, descriptions of the spatial patterning of resident personal networks are presented using Social Network Analysis and visual sociograms using UCINet and Netdraw software (Borgatti, Everett & Freeman, 2002) and statistical analysis in Statistics Package for Social Scientists (SPSS). The following analysis is based on the personal network data of the 409 residents that took part in the survey and who subsequently became survey egos. The data underlying these networks include a total of 2,418 individuals (egos and alters) aggregated into nodes representing their residential locations.[29] The first sociogram presents the network data geographically in the configuration of a Manchester map. The second sociogram uses a spring-embedded layout of nodes in relational social space.

This section presents the personal network data geographically using north-south-east-west coordinates of the city of Manchester. Figure 7 depicts strong-tie networks between ego and alter residential locations using a map configuration.[30] A green line divides the map into North and South Manchester across the city-centre. Neighbourhood nodes are connected by weighted edges, which indicate the strength of connection between these localities. The central nodes (in red) are the eight sampled localities and the outer blue nodes are other localities named as alter residential areas.[31]

Broadly speaking and taking into account the data limitations, some interesting observations can be made concerning the nature of cohesion and fragmentation of these urban personal networks in geographic space. Most ties are concentrated in the upper half of the graph (north of the city-centre line) rather than being randomly spread across the city space. This reveals an unequal spatial distribution of ties. Statistical analysis in SPSS was undertaken to explore this network clustering, revealing that kinship ties dominated the upper-half of the graph.

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[29] The survey name generator was designed to yield a maximum of five strong ties per ego and was constructed as follows, "please name the people you see most often in your spare time and who are most important to you".

[30] The lengths of arcs do not correspond to actual metric distances between places.

[31] Not all Greater Manchester localities feature in this sociogram; only the localities named by the 409 survey egos are included. No dyadic ties exist between blue neighbourhood nodes as resident ego-networks were not assessed from these areas. Blue nodes are capable of receiving only in-degree connections from red nodes when named as alter residential areas.

Figure 7: A sociogram of North Manchester resident networks, geographic layout
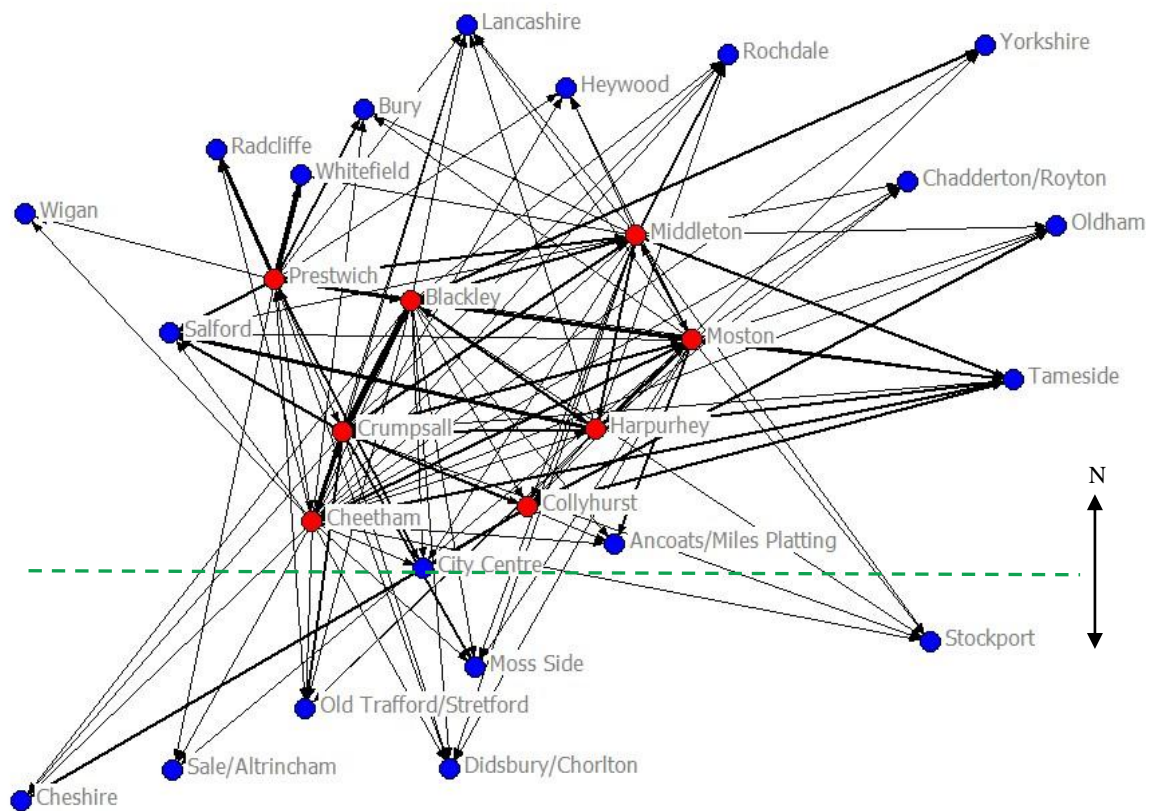
North Manchester residents are well-connected to each other, in fact, social networks are incredibly localised within North Manchester as opposed to being dispersed across the whole city and beyond. Only three areas outside Greater Manchester feature in this graph (Cheshire, Yorkshire and Lancashire), all other alters residential localities were within the boundaries of the city space. This finding reveals these North Manchester networks to be very localised in comparison to urban networks in other studies (Wellman, 1979; Blokland *et al*, 2003; Frei & Axhausen, 2007). This localisation of networks may be due to social closeness between residents based on ideational factors such as shared identity, history or culture, or the presence of dense overlapping social circles that enable mutual friendships to develop between residents.

Of all relationship types, friends were named most often as strong-tie alters (44.5%). The second largest category of alters were family members (32.7%), followed by work-mates (9.9%), partners (7.7%) and neighbours (4.8%). It was interesting to find that an overwhelming 88.8%

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of family members, like ego, resided in an area of North Manchester, with South and East Manchester each sharing only 5.3% of kinship ties.[32] Family ties therefore formed a proportionally large segment of localised resident networks.

The results can be interpreted in comparison to Wellman's study of personal networks in East York (1979). In East York, friends comprised 38.1% of all alters (Wellman, 1979: 1209) compared with 44.5% in this study. Moreover, Wellman (Wellman, 1979: 1217) found that kinship ties accounted for around half of all intimate alters, compared with 32.7% in North Manchester, although this difference is perhaps because Wellman allowed egos to name children, whereas the survey in this study was based on alters over 16 years old).[33] Still, there was a difference in the spatial locations of alters. East York alters lived at comparably further distances from egos than that which we find in North Manchester, 'situated in a broad field of interaction in Metropolitan Toronto and beyond, and less frequently in the same local neighbourhood or other areas of East York (Wellman, 1979: 1211-12). Alternatively, the findings of this study point to a marked localisation of family ties because North Manchester egos live in close proximity to their kin. The nature of these relations initially indicates that these networks are long-term and intergenerational rather than dynamic and transient, which may induce a high degree of localisation and social reproduction of relationship patterns. Certainly, family ties are both strong in intensity and spatially cohesive in this dataset. In other sections of this chapter, I will explore whether other tie types are equally as localised or spatially dispersed.

There was another indication of the interplay between social and geographic space producing effects upon the patterning of resident ties. Localities that were close in geographic space also seemed to be clustered in the social space of the network graph. This implied that some of the sample LSOAs may have been socially similar because they were socially close in an interactive sense (Blau, 1977a) as well as geographically close (Tobler, 1970). The next section will explore this clustering further.

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[32] There were no kinship ties to West Manchester.

[33] The East York survey included the following response categories for alter tie-type; child, parent, sibling, other relative, friend, neighbour, co-worker. The inclusion of a high number of categories for family members may have biased responses toward naming kin alters.

The second network graph, Figure 8, visualises relations between localities in a format more conducive to Social Network Analysis. Rather than using a geographic visual (as in Figure 7), the positioning of nodes is conditioned by a 'spring embedded' layout. The graph theoretic algorithm treats each tie as a spring; the more ties two nodes share, the closer together they are positioned. Nodes with no or few ties in common are repelled apart.

The overall structure of resident networks across the city told a story about the relative positions of LSOAs based on the distribution of neighbourhood ties. In Figure 8 it is immediately possible to see some dense clustering of nodes at the centre of the graph and that most nodes in this central cluster are the sampled LSOAs. In addition to being geographically near to one another in the city space of Figure 7, the spring-embedded layout hints at some structural cohesiveness between the North Manchester localities determined by the pattern of interaction between residents underpinning the graph.

Figure 8 also reveals some peripheral actors in the graph. Finding one of the sampled LSOAs (Collyhurst) at the periphery was unexpected because the other LSOAs are clustered together. On closer inspection, it appears that another LSOA (Prestwich) might also be slightly peripheral, though not to the extent of Collyhurst.[34]

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[34] Though it was surprising to find two sample LSOAs at the periphery it makes sense that the other very peripheral actors are not LSOAs. This is because non-sample localities, unable to reciprocate (out-degree) relations, had lower overall degree centrality scores than sample LSOAs.

Figure 8: A sociogram of North Manchester resident networks, spring-embedded layout
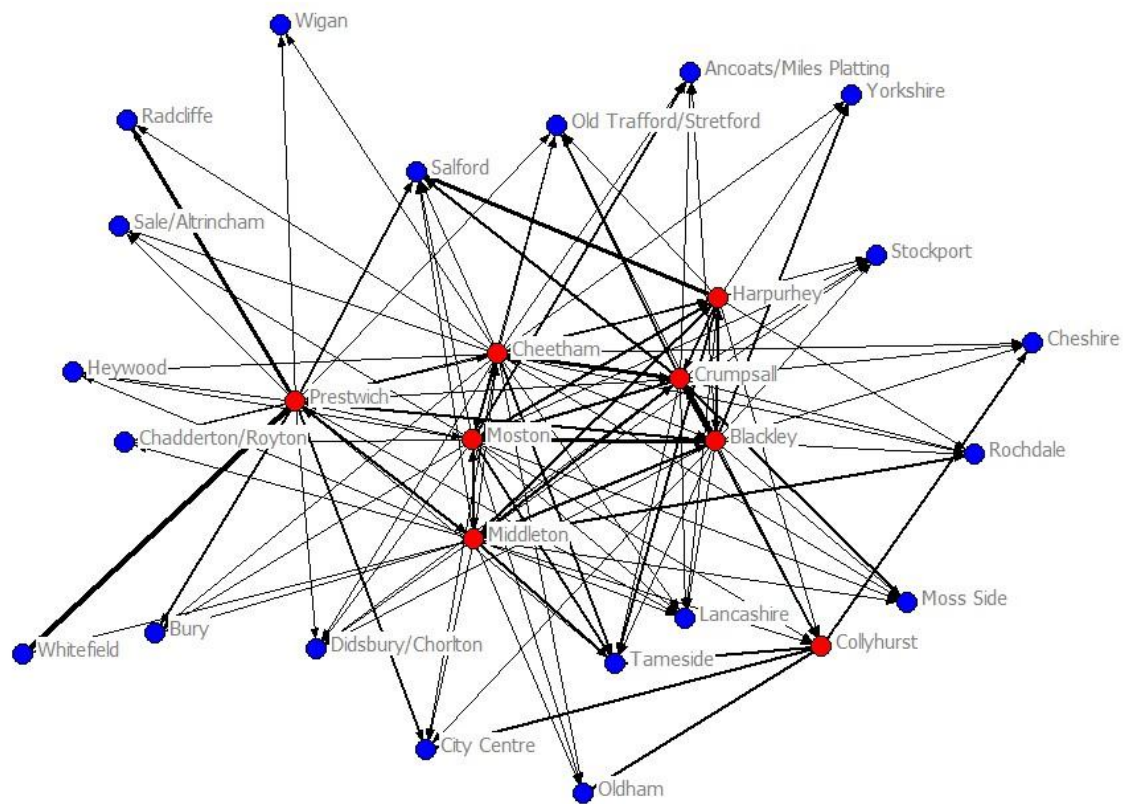
To further explore the structure of relations between neighbourhoods in this network, a continuous core-periphery analysis was undertaken in UCINet to test whether the peripheral positioning of these LSOA nodes was meaningful and the extent to which each LSOA node could be described as being part of a network 'core'. A core-periphery analysis can be used to detect the presence of a central 'core' set of actors in relation to peripheral actors. [35] A core-periphery structure can be observed when high density is found between a clique of core nodes,

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[35] UCINet features two core-periphery procedures; the first calculates 'coreness' scores for all nodes (indicating the extent to which actors are part of the core), the second creates a categorical partition between nodes based on their core or periphery memberships. Both models are accompanied by fitness measures; a high fitness score allows a researcher may accept or reject a core-periphery structure hypothesis, however, fitness scores are not accompanied by indications of statistical significance (p-value). Indeed, a universal permutation test would not be suitable because researchers should ordinarily 'first have a theory about how ties are formed, and then to generate a null model specific to the substantive context and to the type of data at hand' (Boyd, Fitzgerald et al. 2006). Borgatti & Everett (1999) highlight the context-specific nature of networks by stipulating that each individual networks dataset requires a unique null hypothesis (1999:393–394).

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alongside detection of a peripheral set of actors who have more ties to the core than to each other (Borgatti and Everett, 1999).[36]

A continuous core-periphery analysis was undertaken for the city-wide network. The routine found a weak core-periphery structure (correlation: 0.353) and recommended a core membership comprising of the four top scoring nodes; Cheetham, Crumpsall, Moston and Blackley (concentration = 0.883). These neighbourhoods were densely connected with few ties to the periphery. Collyhurst, Middleton, Harpurhey and Prestwich were classed as peripheral actors in this graph, these neighbourhoods were not well-connected to the core nor did they have strong connections to each other.

At this stage and without any qualitative explanation, it was difficult to determine the cause of these structural groupings. Could the interplay between forms of cohesion be underlying these 'core' and 'peripheral' positions in the city network? Perhaps social closeness between these areas combined with spatial proximity in the city space could explain the structural cohesiveness of the core LSOAs. Residents of these core areas are socially close in an interactive sense, so perhaps they were also ideationally close (sharing attitudes, practices and identities). On the other hand, if we turn to the peripheral localities, those which do not share strong connections with one another, we find some interesting differences between these localities. Of the four peripheral actors, Prestwich is the least deprived, most gentrified LSOA whilst Harpurhey, Middleton and Collyhurst are the most deprived and homogeneous LSOAs in terms of the social composition of residents.

Deprivation and population homogeneity within the localities may or may not have a significant effect upon core-periphery positions. Yet following existing literature (Atkinson & Kintrea, 2001; Baum & Atkinson, 2010; Bécares *et al*, 2011) it would make sense if the most deprived homogeneous localities had a propensity for internal networks of residential homophily within the locality as this may have resulted in these neighbourhoods being socially isolated from other surrounding neighbourhoods (Kintrea & Atkinson, 2001). This social

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[36] Density scores between the core and periphery can be either high or low.

network introvertism would display in structural form as visual distance between peripheral nodes in the space of the network graph. In fact, Figure 8 illustrates this configuration; we see the peripheral nodes repelled from each other in the sociogram. On the other hand, it would also be reasonable to expect the least deprived gentrified LSOA, Prestwich, to benefit from bridging ties beyond the sample locality group. This would result in a peripheral position in this graph but perhaps an alternative (maybe more central) position in other networks not captured by this study.

In sum, there may be social closeness between 'core' LSOAs and social distance between 'peripheral' LSOAs, as well as some social distance between core and peripheral actors. Membership of the core group was likely to be determined by underlying social closeness (interactive and/or ideational) between residents of these localities. The position of peripheral LSOAs may have been related to the extent of deprivation and/or social mix in these localities. This discussion of core-periphery positions is further elaborated in Chapter 6.

This first section of the chapter has analysed the spatial patterning of ties across urban space. The first sociogram (Figure 7) illustrated unequal spatial distributions of ties across the city resulting in pockets of density, particularly of kinship ties in the upper (Northern) half of the graph. North Manchester residents were well-connected with each other, especially as a high proportion of localised family ties provided long-term, stable, intergenerational networks. The second sociogram (Figure 8) illustrated the network of neighbourhoods using a spring embedded layout. A core-periphery analysis exposed 'core' and 'peripheral' structural positions between LSOAs in the city network which may be related to interactive and ideational social closeness between core LSOAs and the extent of local deprivation and homogeneity of the peripheral localities. The sociograms reveal some interesting findings concerning the network structure of urban cohesion and fragmentation within and between neighbourhoods but do not offer any explanations for the relative positioning of LSOAs. The next two main sections of the chapter undertake a comparative analysis of spatial compositions at different geographic levels of propinquity and dispersion and draw on qualitative data to try and make sense of these network positions and structures.

3.2 Geographic Propinquity

This section explores the effects of geographic propinquity upon resident personal networks. Geographic propinquity is explored at three spatial levels. Firstly, residential homophily is explored through an analysis of 'same locality ties'; the proportion of ties to alters in ego's own neighbourhood. Secondly, at a further spatial distance, ego's ties to alters living in bordering neighbourhoods is explored. Thirdly, the analysis turns toward ties to alters living in other North Manchester localities. The aim is to explore the effects of propinquity; to establish if the proportion of alters decreased with increases of geographic distance at each spatial level. This analysis also delineates the extent to which social factors underpin the observed spatial patterns in resident networks.

Localised bonding & residential homophily

This section discusses the role of residential homophily in structuring urban personal networks and in providing a spatial form of 'bonding capital' (Putnam, 2000).[37] Homophily describes a dyadic level attraction between individuals based on a specified attribute similarity (in this case, residential location). Following Marsden (1988), Borgatti, Jones & Everett (1998: 32) define homophily as a standard cohesion measure identifying 'the extent to which members of the group have their closest ties to members who are similar to themselves'. Recall from Chapter 1 that for Blau (1977a), individuals or groups are socially close if they have high levels of interaction, whereas an absence or low proportion of network ties connotes social distance. Blau proposes that empirically mapping 'interactive social distance' in social networks can unveil patterns of cohesion and fragmentation between individuals and groups. In this thesis I propose that residentially homophilous networks (i.e. intra-local ties) can be conceptualised as localised bonding capital, as opposed to spatially dispersed ties that might 'bridge' or 'link' residents from different neighbourhoods and backgrounds.

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[37] Ego's residential locality refers to the general local area by its given name (i.e. Blackley, Moston, Crumpsall) and not the smaller LSOA spatial level. Consequently, when a resident ego named an alter from a different LSOA but within the same local area/neighbourhood, both ego and alter were coded as living in the same locality. This reasoning was taken because LSOA boundaries are geographically very small and not meaningful to the general public. They exist to serve governmental administrative, political and research interests rather than as locally recognised markers of spatial identification. The research interest was not focused on whether egos named residents living in adjacent streets, but the extent to which cohesion could be observed within local areas, and subsequently, if cohesion was 'local' and spatially clustered.

Empirical evidence on the prevalence of homophilous ties is so astounding that, in most contexts, researchers expect to find patterns of like associating with like. Strong support for the argument that social interaction is more likely under conditions of homophily has been established in past research (Lazarsfeld & Merton, 1954; Laumann, 1966; McPherson, 1983; McPherson, Smith-Lovin & Cook; 2001; McPherson & Ranger-Moore, 1991) because social similarity is linked to network density and trust (Coleman, 1988, 1990). Freidkin (1984) implies a spatial principle to homophily in networks, claiming that frequent, face-to-face interaction is more likely amongst socially similar actors in geographically propinquintous settings. Although urban populations have been studied, homophily is rarely considered with specific reference to the physical context in which it occurs and not often conceptualised as a form of spatial bonding capital. This section of the chapter considers the salience of geographic propinquity in determining homophilous tie formation between residents living in the same locality.

Residential homophily was analysed in SPSS to assess the extent to which alter residential locality was the 'same as' or 'different to' their corresponding ego (Louch, 2000).[38] In this study, ego's immediate locality acted as a strong determinant on the selection of strong-tie alters. Over half of strong-tie alters resided in the same locality as ego (an average of 57.7% across all LSOAs). The proportion of residential homophily for this North Manchester sample was compared to the most recent available dataset on contemporary urban personal networks. Frei and Axhausen (2007) had found that two-thirds of alters lived within a wider geographical boundary of up to twenty-five kilometres from ego. In comparison to these findings, the trend for residential homophily in this sample was extremely high and the spatial distribution of ties was much more localised. It has been claimed recently that in both face-to-face and electronic networks, 'geography continues to maintain its power as a compartmentalizing factor' (Onnela, Arbesman, Barabasi & Christakis, 2010), but the data in this thesis show that the extent to which networks are localised and focused (Feld, 1981) varies between contexts.

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[38] See methodology chapter for further explanation of this procedure.

Figure 9: Proportions of residential homophily for LSOAs (rounded percentages)
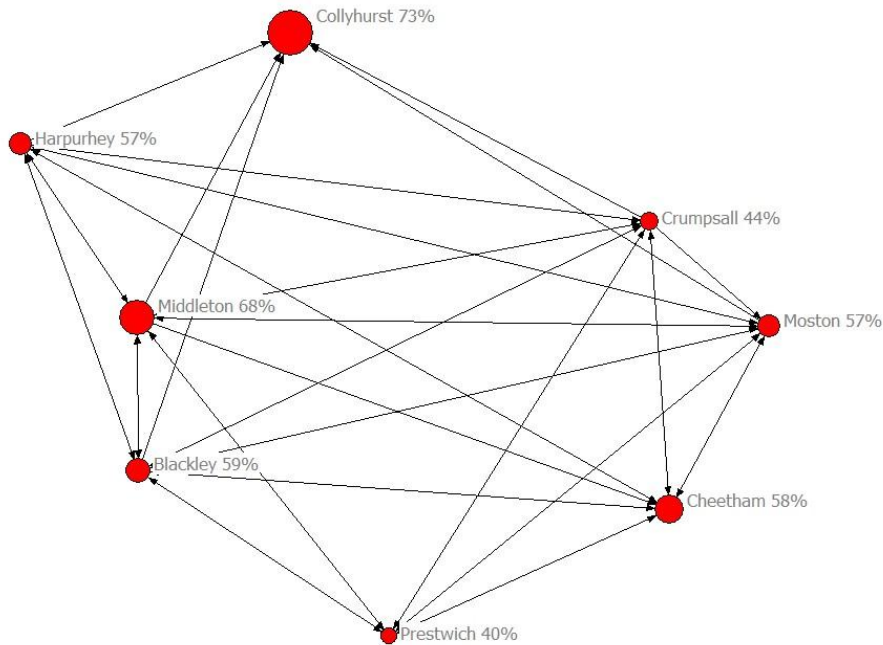
Aggregating data on internal ties at LSOA level, percentages of residential homophily can be conceptualised as levels of bonding capital within a locality. In network form, this can be expressed using loop ties (ties given from a locality node and back to itself). In this case, the loop ties of residential homophily represent the proportion of ties to alters living in the same locality as ego as a percentage of the total of all ties of that LSOA. Expressing residential homophily in such a manner allows rates to be assessed comparatively across LSOAs. This is illustrated in Sociogram 3 where nodes are sized by residential homophily score.

Rates of residential homophily were higher in some LSOAs than others. The distribution of scores between localities was wide (from 40% to 73.3%). The most deprived homogeneous LSOAs of Collyhurst and Middleton had the highest levels of residential homophily (with 73.3% and 67.5% of alters selected from the same locality as ego, respectively). At the other end of the scale, the least deprived LSOA in Prestwich had the lowest proportion of residential homophily (40%). The remaining LSOAs had mid-range internal ties (ranging from 43.8% to 58.6%) and these were the same localities that were 'core' in the core-periphery analysis. The

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effects of geographic propinquity were strong (Festinger *et al*, 1950) and the immediate locality was an important 'foci' for relations (Feld, 1981). However, the variance of residential homophily rates between LSOAs suggests that social and compositional factors may play an important role in influencing the impact of geographic propinquity (Gans, 1962; Greenbaum and Greenbaum, 1985).

To understand residential homophily, it is necessary to explore the nature of these localised ties. The immediate locality provided the largest selection pool for alters across all relationship types; ranking highest in terms of partner, family, friend and work-mate (75.7%, 69.1%, 52.9% and 36.9% of the total for each relationship category respectively). As ego's own residential locality was the main provider of networks across all relationship categories, it was likely that these relationships were also multiplex (for example, friends being co-workers, family members as neighbours).

Rather than illustrate Fischer's (1982: 165) claim that urban residents are pulled away from localities and towards the social opportunities offered by the wider city and central business district, the data revealed the extent to which ego's own locality was a 'foci' for social interaction (Feld, 1981) across multiple relationship types. Given the general regional decline in local manufacturing industries and a shift in work locations, it was most surprising to find that over a third of work colleagues resided in the same locality as ego.

Turning to the temporal nature of the personal networks, residentially homophilous ties were also the most established. Of all same locality contacts, most were known for over 20 years (35.3%), 26.2% known for 11-19 years and 17.8% for 6-10 years. Persistence of residential homophily over time indicates an inherent stability in these most local personal networks. Moreover, the data do not show that local networks are becoming spatially dispersed. Contrary to literature on forms of interactions associated with postmodernity, many residents of this sample were not experiencing fluid, geographically dispersed relationships (Bauman, 2000, 2007; Beck & Beck-Gernsheim, 2000; Giddens, Beck and Lash, 1994; Larsen et al, 2006; Urry, 2000; Urry & Elliot, 2010; Wellman, 2001, 2005). Rather, high localisation in these personal networks might be associated with neighbourhood deprivation and low social mobility which

perhaps marginalises many residents from fluid forms of social networks. These locally cohesive networks were high intensity (strong and frequent), reproduced over time, embodied, intimate and meaningful.

This combination of propinquity, temporal stability, intimacy and multiplexity within local 'foci' enhances the likelihood of a collective identity (sense of social similarity and norm consensus) developing as an ideational 'social order' mechanism (Durkheim, 1893). Within the immediate locality residential homophily resulted from the interplay of social and geographic factors. It seems doubtful that interaction was solely induced by propinquity (Festinger *et al*, 1950); rather social factors played an important role in both creating and sustaining network cohesiveness in geographic space (Moreno, 1947; Schelling, 1971, 1978; Freidkin, 1984).

Thus far, several points have been raised; residential homophily was found to be strong and perhaps linked to deprivation levels. The highest rates of residential homophily were found amongst the most deprived localities. The differences in proportions of residential homophily between LSOAs indicated that geographic propinquity does not operate universally. The data does not support claims that social relationships are becoming fluid and dynamic, rather most resident networks were stable and long-term. Spatial factors alone do not determine tie evolution; rather it is likely to be combination of spatial, structural and social influences that spark connections between individuals.

Distinction and difference: ties to bordering neighbourhoods
This section analyses whether geographic propinquity affected the selection of alters from bordering localities.

In contrast to the high proportion of residential homophily and indications of social closeness and bonding within localities, the data revealed a different trend for ties to bordering neighbourhoods. Across the sample, as the distance between ego and alter increased, network ties dropped. Taking in to account all eight LSOAs, an average of 12.8% of all alters resided in a bordering locality. This figure was a substantial drop from the 57.7% of alters named who were living in the same locality as ego. Again, the results of this study differed from Frei and

Axhausen (2007). In this thesis, the furthest edge of a bordering neighbourhood was within a maximum of 2 miles of the LSOA yet only a small number of egos named alters from these areas. Given the 'availability' (Laumann, 1966; 1973) and propinquity (Festinger *et al*, 1950) between residents it was it was surprising to find that more strong ties had not formed between bordering neighbourhoods. Instead, when choosing spatially proximate contacts, residents tended to prefer to form strong-ties to residents in their own local area.

Again, it was important to consider differences between LSOAs. For the majority of LSOAs, the number of alters from bordering areas dropped between 20% to 40% from numbers residing within ego's immediate locality. There were exceptions to this. The proportion of Middleton resident alters dropped by 63.3% (from 67.5% in the immediate locality to 4.2% to neighbouring areas). Even more unusual was that Collyhurst egos (73.3% residential homophily) had no ties whatsoever to neighbouring areas. It is perhaps appropriate to remind ourselves that Middleton and Collyhurst LSOAs were the most homogeneous and most deprived LSOAs in the study sample. A different trend was observed in the most class-mixed, least deprived localities. Prestwich and Crumpsall had the lowest proportional reduction in alters between spatial levels (from 40% to 21.3% and 43.8% to 20.3%, respectively).

Comparative analysis between LSOAs reveals interesting relational differences. Localities with the highest deprivation and most homogeneity had the most residential homophily and the lowest proportion of ties to bordering areas (implying high social distance between local and bordering areas). Conversely, the least deprived LSOAs of the sample were slightly more socially mixed and these areas had lower levels of residential homophily and comparatively higher proportions of ties to bordering neighbourhoods (thus suggesting low social distance). For the homogeneous-deprived localities, the stark drop in ties to bordering areas was analogous to observations made of deprived localities as 'isolated' and 'fragmented' by Park (1925) in Chicago and Gans (1962) in East Boston. Finding a low proportion of ties between spatially propinquitous localities exposes underlying social distance between residents of these nearby areas based on low levels of interaction (Blau, 1977a).

The network data provided evidence of underlying social distance between neighbouring areas, but did not explain it. Interview narratives were used to clarify the issue and also to help understand the processes behind social closeness and distance. Overall most residents perceived bordering residents to be quite similar to themselves. Initially, there were no overt acknowledgements of distinction and social distance, until prompted during interviews and even then, such references were most often described by Middleton and Collyhurst residents. There were no rehearsed or pre-prepared scripts of distinction instead practices and attitudes were habitual (Bourdieu, 1986). Such discussions only arose if prompted and were only made apparent through talk of network practices (rather than attitudes).

Interviewer:	You have lots of friends and family in Collyhurst, but haven't named anyone from one of the nearby areas, like Miles Platting or Ancoats. Do you know anyone from these areas?
Mick:	No.
Interviewer:	Why do you think that is?
Mick:	Er…I don't know….don't have time I suppose. No, I don't ever think of going over there to make friends…why would I do that when I know people here? It's a bit of a daft question.
Interviewer:	Do you think people living in those areas are different from people living in Collyhurst?
Mick:	No.

Nuanced and subtle, the distinctions and social distance between residents of bordering areas were so ordinary and mundane that they would not have been discussed freely, rather the issue arose from interview prompts.[39] Individuals did not consciously perceive themselves and fellow residents as dissimilar to residents of bordering neighbourhoods. Rather than a conscious, hierarchical perception of difference, the narratives highlighted distinctions and social distance underpinned by network practices. A lack of interaction between residents of bordering areas led to subtle cultural distinctions, underpinned by normative and taken-for-granted practices.

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[39] This was in stark contrast to references made to immigrants and asylum seekers, often through the use of very extreme and frank comments.

Despite the implicit, habitual nature of distinction between resident groups, patterns of interaction (or non-interaction) were often presented as 'matter of fact' and as 'difficult to explain'. The reasoning behind network practices was obvious to resident insiders, but unknown to outsiders. It was in the context of interpreting these dialogues that the findings of Elias & Scotson (1965/1994) rang true. In effect, the researcher was the outsider:

Lou: Blackley has a very distinctive accent. If a group from, say Middleton or Crumpsall walked into a pub or shop in this area, straight away people would be able to tell that they weren't local.

Interviewer: How could people tell the difference?

Lou: Well, you say you've been there… We speak differently. Can't you hear it?

It was not resistance or tension between bordering locality residents that caused a lack of interaction, rather social distance was underpinned by normative network practices and accompanied by subtle perceptions of cultural diversity. Ben, a 17 year old unemployed male from Middleton, provided an example of this when questioned about the neighbouring area of Blackley:

Ben: I don't like it. I don't know. I wouldn't move up there.

Interviewer: Why?

Ben: They're different, they speak differently.

Interviewer: How do they speak differently?

Ben: Like, the lads, they use slang words…their voices…

Interviewer: Can you understand them?

Ben: Oh yeah (laughs). I don't know why it's different but it is....it just is...I can't explain it. It's not like I've got anything against them, but I just wouldn't want to be mates with them, or hang about with them. There's no reason to…It's weird…I can't describe it, it just is that way.

Ben's narrative describes distinctions between bordering localities in terms of the type of language 'they' use. He fails to identify with 'lads' of a neighbouring area because they are 'different'. These incongruities are not stark; instead they are so subtle and embedded in

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habitual network practices that Ben has trouble explaining them. These narratives were also found in other interviews.

There was certainly social distance evident between residents of bordering localities, but rather than being communicated through 'us' and 'them' tensions or descriptions of 'otherness' (Elias & Scotson, 1965/1994; Elias, 1974, Southerton, 2001), feelings of distinctions were based on understated cultural cues like language and dress codes (Bourdieu, 1986; Skeggs, 1997). As Bottero argues (2005: 253) such assertions of difference are often most prevalent 'not between unequals but between broadly equivalent individuals who seek to find competitive advantage through pursuing different social or cultural avenues'. Cultural distinctions were presented as non-antagonistic but illuminate contrariety between individuals within this socio-economically similar sample. Interviewees often claimed that not extending networks outside of the neighbourhood was a matter of personal choice. But was this really choice of conscious social agents or a result of habitual network practices? When questioned about why this was, Ben and other interviewees were unable to explain the reasons behind the social distance felt and distinctions made. Rather than illustrating agency, justifications of network interactions were irreflexive, often disguising habitual routine and networks embeddedness (Bourdieu, 1984). The normativity and social reproduction underpinning claims that 'it just is', illustrated a social distance that was so subtle it was barely recognisable to the residents themselves (Berger & Neuhaus, 1977; Bernard, 1973).

Social distance between neighbouring areas was likely to be resulting from minutiae actions which are most often taken-for-granted but are also the most difficult to overcome or reverse. Far from being a matter of free choice, informal, everyday, mundane action is highly constraining because of its largely irreflexive nature. Individuals cannot be fully aware of the relationship between their social actions and macro-structural outcomes because they are positioned to observe from micro stances (Bourdieu and Wacquant, 1992; Di Maggio & Powell, 1991). People are less likely to perceive their own attitudes and behaviours in the context of their social and spatial environments. Accordingly, the sources of constraint may become invisible and perceived as individualism or rational action.

This section found a noteworthy drop in the proportions of alters named from bordering neighbourhoods compared to numbers of alters named from ego's immediate locality. Strong residential homophily meant that there were fewer opportunities for ties to be established to bordering neighbourhoods. The most deprived LSOAs had the highest residential homophily and lowest proportions of ties to neighbouring areas. Conversely, the least deprived, most gentrified localities had the lowest levels of residential homophily and highest proportion of ties to bordering neighbourhoods. Interview narratives were consulted in an attempt to understand the low number of ties to bordering neighbourhood. Network fragmentation was not accompanied by rehearsed scripts of distinction, rather social difference was based on subtle cultural differences developed and recognised through the reproduction of network practices.

Non-linear propinquity: networks in North Manchester

This final section on geographic propinquity explores networks to North Manchester areas excluding ego's residential locality and bordering areas.

The previous section showed that the number of alters living in bordering localities decreased by an average of 44% (across all LSOAs, from 57.7% in the immediate locality to 12.8% in neighbouring localities). Following this finding, it was expected that the number of alters would further fall for the 'other North Manchester category', as the geographic distance, and possibly social distance, between ego and alter residential locations became even greater. In fact, the total number of alters in the 'other North Manchester' category was 11.4%. This was similar to the total number of alters selected from neighbouring localities (only a small decrease of 1.4%). Nonetheless the number of alters had decreased with spatial distance across the three spatial categories and it could be argued that a general linearity existed for geographic propinquity. Yet this general pattern is misleading. The chapter has already illustrated contrasts between the spatial patterning of LSOA networks. This suggests that geographic propinquity did not operate equally across localities and, therefore, does not have linear properties.

Figure 10 is a stacked bar-chart of frequency of alters by geographic distance for each LSOA, produced from a crosstabulation of the spatial dispersion of alters by alter residential locality. There are three categories for alter spatial dispersion (same locality as ego, neighbouring locality and other North Manchester). Each vertical climb denotes a geographic increase between ego and alter residential locations. The stacked bar chart represents the proportional percentage of alters in each y axis variable category, by locality (read horizontally). As earlier analysis in this chapter revealed differences of geographic propinquity between LOSAs, it is useful here to report comparatively the extent of alter decreases. The graph stacking allows for a visual representation of how the LSOAs compare in terms of proportions of alters named at each spatial distance level. The table below the graph presents the original (non-proportional) normalised percentage scores.

Figure 10: A stacked bar chart graph illustrating the percentage of alters at each geographic distance category, by LSOA (normalised scores in table below).[40]

	Same locality as ego	Neighbouring locality	Other North Manchester
Colly	0.733	0.000	0.000
Midd	0.675	0.042	0.146
C.Hill	0.586	0.162	0.091
Bla	0.581	0.172	0.070
Harp	0.571	0.092	0.153
Most	0.569	0.132	0.086
Crum	0.438	0.203	0.156
Prest	0.400	0.213	0.163

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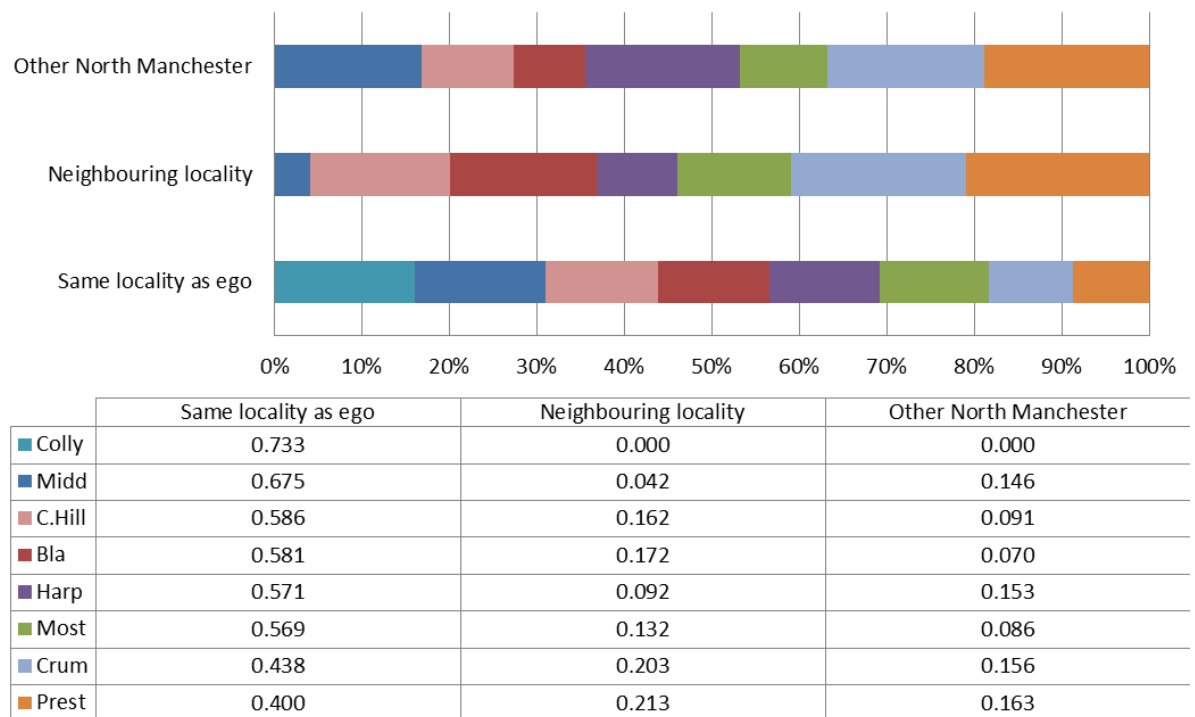
[40] Row percentages do not total 100% because other ties existed beyond the North Manchester area.

The geographic structuring of personal networks is not always linear. Figure 10 shows how proportions of alters at particular spatial distances range by locality. Note that some LSOAs tend to conform to a pattern of geographic propinquity; the number of ties decreases with spatial distance, but others do not.

Blackley, Prestwich, Crumpsall, Cheetham Hill and Moston are good examples of LSOAs following the pattern of geographic propinquity. These areas have a modest number of residentially homophilous ties, a smaller number to neighbouring areas and even fewer dispersed across the rest of North Manchester. Note that these localities do not have a disproportionate amount of ties in the immediate locality so there is less constraint upon forming external ties to other geographic areas. The networks of other localities, however, are not so linear in fashion. These LSOAs do not see a decrease in alters related to geographic distance. For example, Collyhurst egos, with 73.3% internal ties) do not name any geographically proximate alters at all; scoring zero for both the 'neighbouring locality' and 'other North Manchester' categories. Middleton ego-residents (67.5% internal ties) name very few alters from bordering areas (4.2%), though the number of alters living at wider distances across North Manchester increases to 14.6%. The percentages for Harpurhey also replicate this non-linear pattern, with 57.1% internal ties, 9.2% of ties to bordering localities and an increase of 15.3% to other North Manchester neighbourhoods. It is interesting that these three LSOAs sharing common geographic patterning of networks, are also the most highly deprived localities of the sample.

Is there a link between neighbourhood network structure and local deprivation? Interpreting these data alongside the findings of the previous two sections not only provides evidence of differences between the geographic patterning of LSOA networks but supports a strong argument toward network inequality at the neighbourhood level. This is because analysis of geographic propinquity over the three spatial levels has shown that the geographic structure of networks does not operate universally or in a linear fashion. Geographic propinquity across all three spatial distance levels appeared to be linked to relative levels of deprivation and gentrification. LSOAs conforming to patterns of geographic propinquity were deprived to a lesser extent than those not exhibiting geographic propinquity. Furthermore, LSOAs

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conforming to geographic propinquity were also much more gentrified by class or ethnicity, whereas those areas not conforming were very homogeneously white, working-class areas.

This section of the chapter has raised some interesting findings concerning geographic propinquity in resident personal networks. High levels of residential homophily signified the power of the immediate locality in focusing interaction across all relationship types. However, rates of residential homophily varied between LSOAs and it was argued that propinquity alone was not responsible for network evolution. Rather, social and structural factors were also at play in producing these non-random, focused spatial patterns (Feld, 1981).

There was a significant drop in numbers of alters from neighbouring areas compared to those from ego's immediate locality. However, the extent of the 'drop' differed between LSOAs. Qualitative data did not reveal obvious or rehearsed local distinctions between residents of bordering localities. Rather the absence of interaction between these residents was a normative, subconscious social distance that was embedded in network practices and communicated through discourses of subtle cultural difference.

As well as these social-cultural reasons for the decrease in ties to neighbouring areas, there were structural implications. It was argued that the immediate locality was such a powerful 'focus' for tie formation, that it constrained the evolution of networks to other geographically proximate areas. LSOAs with high residential homophily had less opportunity to build external, spatially dispersed ties. Interestingly, localities with high deprivation had high residential homophily and low proportions of ties to bordering areas (thus highest social distance). Whereas less deprived, gentrified localities had lower levels of internal ties and high proportions of ties to neighbouring areas (and thus lowest social distance). Assessing ties across the wider North Manchester area demonstrated that not only were interactions focused, non-random and spatially constrained, but also geographic propinquity in these resident networks operated in a non-linear fashion. The least deprived and most gentrified LSOAs showed a relationship between geographic distance and number of alters, whereas the network of residents from the most deprived and homogeneously white working-class LSOAs did not exhibit this pattern.

3.3   Spatial dispersion

To complement the analysis of geographic propinquity in the first section of the chapter, this second half of the chapter turns to explore spatial dispersion. This section discusses networks to alters residing beyond North Manchester but within the boundaries of Greater Manchester.[41] Given the propensity toward residential homophily but non-consistent patterns of geographic propinquity beyond the immediate locality, it will be interesting to explore the conditions under which spatial dispersion of ties occurred to areas beyond North Manchester. This final section of the chapter explores spatially dispersed ties to West, East and South Manchester, investigating the spatial and social dimensions to these networks.

Non-space: Ties to West Manchester

This first section considers ties from North Manchester egos to West Manchester alters. Initially, the most striking finding was that very few ties existed between the LSOAs and West Manchester alters, across all forms of relationship. Survey responses revealed that just 1% of strong-tie alters were West Manchester residents (almost all from the Salford area). There are two possible causes for observing this very low number of ties to West Manchester. The first is low reliability of the survey. These effects may not be replicated if the study was to be re-conducted. Still, the study sample size was large enough to capture a reasonable geographic spread of alters and overcome this spatial selection bias. The second is that the spatial patterning of these resident networks is not randomly organised and the observations make sense in the specific context of this sample.

These data may point to some form of naturally occurring spatial fragmentation between North and West Manchester residents. If resident networks are not randomly organised in space, it

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[41] Though ties existed beyond Greater Manchester (for example, to other counties), these were found to be entirely composed of family members and so those patterns of interaction could be explained by kinship and not in terms of differences in spatial diversification of personal networks attributed to individual actions. Also, it would not be possible to make comparative statements about those with and without spatially dispersed kin. For this reason, these ties have been excluded from the discussion.

would be likely that the data might reveal real patterns of fragmentation and/or clustering. Such patterns have already been observed in this chapter. For example, the geographic clustering of kinship ties in North Manchester and ego's immediate locality as a 'foci' for residential homophily, and network fragmentation through low proportions of ties to neighbouring localities. As ties to West Manchester account for such a small proportion of the total number of personal network ties, this provides another example of geographic fragmentation, and points to social distance between North and West Manchester residents (Blau, 1977).

The initial survey name generator question did not limit the geographic location of alters. Survey and interview name generators did not include spatial prompts or geographic restrictions, so were not responsible in producing high or low proportions of alters by locality. Residents were able to freely list alter residential locations, which were subsequently coded into variable categories in SPSS. The survey name generator was therefore non-restrictive and conducive to inductive analysis. The qualitative interviews (conducted post survey name generator) did use spatial tags in order to yield a wider and fuller picture of alters. It is the interview narratives from this secondary name generator process that perhaps sheds some light on the omission of West Manchester alters.

During the semi-structured interviews, a spatial position generator was used to capture the geographic spread of the participant's social network beyond the five alters already named in the survey. It was hoped that this process would properly capture the full spatial diversity of ego's ties to also include weak or acquaintanceship ties.[42] After yielding a list of free recall alters, egos were asked if they wanted to add any important and frequent contacts from East, West or South Manchester. The interview data revealed that 'West Manchester' and many of its localities were unrecognised spaces to our North Manchester interviewees.

Interviewer: Do you know anyone from West Manchester?

Kelly: What do you mean 'West Manchester'?

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[42] See methodology chapter for additional details.

Interviewer:	Well, most of the people you've named here are from North Manchester, there are some from Yorkshire and some from South Manchester. What about West Manchester? Do you know anyone living there?
Kelly:	I don't really know where you mean. I might do, I'm not sure.
Interviewer:	Well, maybe think of places like Salford.....
Kelly:	Salford! Yes, I know Salford.
Interviewer:	Do you know anyone that lives there?
Kelly:	No.

This lack of spatial recognition was surprising given that West Manchester locations were relatively proximate to North Manchester, a maximum of 10 miles from the furthest LSOA, and within the Greater Manchester region. The interview data confirmed the survey result of a low number of ties between residents of North and West Manchester and also that, for North Manchester interviewees, there was some kind of blind spot surrounding West Manchester its constituent localities.

Anthropological and sociological theories of space and place are useful in understanding this . In his theory of what constitutes a 'non-place', de Certeau (1988), distinguishes between 'space' as dynamic and temporal, and 'place'; which has a distinct location, defined rules and relationships, is fixed and stable. As place names are usually quite fixed and locations can be objectively defined and mutually recognisable (through, for example, using maps and postcodes), it was surprising that West Manchester was somewhat of a 'non-space' for North Manchester residents. The work of Auge (1995) is useful helping to make sense of interaction patterns in geographic space, particularly instances of network fragmentation. Auge describes 'non-spaces' which are devoid of meaning and social relations (1995: 20).

There is certainly some network fragmentation between North and West Manchester exhibited through an absence of relations between residents of both spaces. From the perspective of this North Manchester sample of residents, this lack of networked interaction was also accompanied by a void of meaning. Auge's definition of non-space is limited to modern transient places such as motorways and airports, so is not completely applicable in this context. More valuable is the

concept of 'empty space' (Kociatkiewcz & Kostera, 1999) a physical space unknown to some individuals by nature of their own position in social space. Here, equally as important as 'position' in social space are the 'locations' of social relations; the embodied, physical spaces in which interactions take place; whether these be spatially transcending or fixed. Collectively, such patterns of relations create interesting urban fragmentation at the macro-level. These points of 'empty-space' can therefore be observed both in network data and through hints of cognitive spatial awareness in qualitative narratives.

The space of West Manchester was unknown to many North Manchester residents, not only because egos' personal networks defined their position in social space, but also because these embodied interactions were unequally distributed in physical space, with some spaces privileged as network foci over others. West Manchester remained an 'empty space' even when prompts were switched from verbal questions to cards marked with place names. During interviews, and after the name generator questions had been asked, respondents were introduced to a series of cards with Manchester place names written on. Individuals were asked if they knew the places and also if they knew anyone living there:

Keith: I don't know these three [picks up cards marked Pendlebury, Worsely and Eccles].
                Actually, I have heard of this one [Eccles] but I couldn't tell you where it was.
                ....Swinton, I've heard of that one as well but I've never been there.

Analysis of the data confirmed a cognitive form of social distance between North and West Manchester, which is supported by empirical observations of spatially patterned relational social distance indicated by the network data (Blau, 1977a). It is here that we find a double-emptiness; of relational space and of relational interactions, with social distance occurring as the product of this coexistence.

As with the case of fragmentation and social distance between bordering neighbourhoods, language and knowledge played a role in this double-emptiness. Sometimes, West Manchester places names were not known at all and the interviewee did not know anyone living there, or even have knowledge of friends with friends from the area. In other instances, some parts of

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West Manchester were recalled more frequently than others. For example, many North Manchester residents could not freely recall localities in West Manchester, however, once prompted, all were aware of Salford but did not initially consider it to be in West Manchester.

The recognition of Salford over other areas was interesting. Salford has relatively large boundaries and its landscape has also shifted historically and in recent years. Although part of Greater Manchester, Salford has city status. It is also the location of new commercial and residential settlements, for example, Salford Quays and BBC's Media City. Following de Certeau (1988), Salford functions more as a 'space' of shifting landscapes, population shifts, than a 'place' of fixed, stable relationships. In the absence of network ties between North and West Manchester residents, the dynamic landscape and famous reputation of Salford perhaps allowed it to be more recognisable than its civic centre 'place', Swinton. Here we see a hierarchy not only in language and recall but between space and place, dependent on the perceiver's positioning in social and physical space.

The findings highlight a quantifiable social distance between geographic areas which is defined by an absence of network social relations (Blau, 1977). It also illustrates qualitative aspects to the spatial patterning of social interaction, for example, how linguistic referents, shared discourse and knowledge are linked to social networks and social position (Mische & White, 1998, Kociatkiewcz & Kostera, 1999; Silva & Wright, 2008). The thesis argues that such factors can cause fragmentation and social distance in human interaction networks and illustrates how this plays out geographically in a relational network context.

Social closeness: ties to East Manchester
In striking contrast to the west, a higher proportion of alters were named from East Manchester (5.8%). With the exception of Prestwich, all LSOAs had named East Manchester alters, though a substantial proportion (64.2% of all ties to East Manchester) came from Moston, Harpurhey and Collyhurst. It is significant that these three LSOAs are geographically proximate to one another (Collyhurst borders with Harpurhey, which also borders Moston). Though many of the East Manchester alter localities were not nearby or adjacent to Collyhurst, Harpurhey and Moston, these LSOAs are actually on the eastern side of North Manchester, so geography may be

playing a role in the formation of these ties (in contrast to the dynamic found with West Manchester). This revealed that geography rather than propinquity may have influenced the formation of ties between North and East Manchester residents.

In addition to geography, social factors were linked to the selection of alters from East Manchester. Analysis on types of alters shows that although there were fewer family ties to East Manchester in comparison to those existing within North Manchester, a noteworthy 27.8% of relations between North and East Manchester were kin-based. A weighty share of East Manchester alters were friends of North Manchester egos (48.1%). East Manchester alters also scored highly in terms of being partners of North Manchester residents (10% of total alters in the partner category resided in East Manchester). Although the immediate locality was the main focus for partner selection (featuring 75.7% of total partners, many of which may have cohabiting), taking into account non-cohabiting couples, East Manchester ranked fairly highly compared to the other areas, especially considering that geographic propinquity was not a factor in this selection.

It is interesting to find that that other geographic areas also provide a healthy proportion of friend/family ties but do not rank as well as East Manchester for partnering relations. In terms of social distance scales, marriage and sexual partnering are considered extremely close (if not the closest) forms of interaction indicating social closeness (Borgadus, 1947).

Extensions into partnering relationships would be most likely to emerge between areas where there are already strong kinship and friendship ties because these networks will have already created sufficient environments of social and spatial cohesiveness. Temporally stable categories like kinship might over time build up trust, shared social identity and normative systems, giving rise to more fluid forms of relationship such as intra-locality friendship and coupling.

Analysis of resident narratives and archival sources revealed that social reproduction of network practices underpinned ties to East Manchester and subsequent feelings of social closeness. Following Emirbayer & Goodwin (1994), reproduction of network ties across space

and time was understood as a cultural process. Collective cultural and historical references

made these spatially dispersed networks between North and East Manchester residents active

Table 5: Spatial dispersion of personal networks using ego and alter residential categories.

		Ego's residential locality								
Residential locality of alter		Midd	Bla	Most	Harp	Colly	Prest	Crum	C.Hill	Tot
Spatial dispersion	Same locality as ego	67.5%	58.1%	56.9%	57.1%	73.3%	40.0%	43.8%	58.6%	57.7%
	Neighbouring locality	4.2%	17.2%	13.2%	9.2%		21.3%	20.3%	16.2%	12.8%
	Other North Manchester	14.6%	7.0%	8.6%	15.3%		16.3%	15.6%	9.1%	11.4%
	East, West or South Manchester	10.8%	10.3%	18.4%	12.2%	20%	13.9%	14%	14.1%	11.9%
	Neighbouring county	.9%	7.0%	1.7%	5.1%	6.7%	5.0%	1.6%	2.0%	3.3%
	Other UK	1.9%		1.1%	1.0%		3.8%	4.7%		1.4%
	International	.5%							.1%	.5%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Breakdown of in-city categories									
East Manchester		4.7%	2.7%	12.1%	11.2%	13.3%		3.1%	3.0%	5.8%
West Manchester		.5%		1.7%			1.3%	3.1%	2.0%	1.0%
South Manchester		5.6%	7.6%	4.6%	1.0%	6.7%	12.6%	7.8%	9.1%	5.1%

N=409, no missing cases

Table 6: The dispersion of ties by alter relationship type (ties within Greater Manchester only).

		Relationship category of alter					
% within Relationship of alter to ego		Partner	Family	Friend	Neighbour	Work-mate	Total
Alter locality	Same locality as ego	75.7%	69.1%	52.9%	97.8%	36.9%	60.6%
	Neighbouring locality	4.3%	9.5%	18.0%	2.2%	19.0%	13.5%
	Other North Manchester	7.1%	10.2%	14.5%		16.7%	12.0%
	South Manchester	2.9%	5.3%	7.0%		17.9%	6.8%
	East Manchester	10.0%	5.3%	6.5%		7.1%	6.1%
	West Manchester		.7%	1.0%		2.4%	1.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

		Relationship category of alter					
% within Alter locality		Partner	Family	Friend	Neighbour	Work-mate	Total
Alter locality	Same locality as ego	9.9%	36.8%	39.4%	8.0%	5.8%	100.0%
	Neighbouring locality	2.5%	22.7%	60.5%	.8%	13.4%	100.0%
	Other North Manchester	4.7%	27.4%	54.7%		13.2%	100.0%
	South Manchester	3.3%	25.0%	46.7%		25.0%	100.0%
	East Manchester	13.0%	27.8%	48.1%		11.1%	100.0%
	West Manchester		26.4%	47.7%		25.9%	100.0%
		7.9%	32.3%	45.2%	5.1%	9.5%	100.0%

n = 409, p < 0.001.

and symbolic. Historical sources indicate that slum clearances by the Manchester Corporation (predecessor to Manchester City Council) occurred during the 1950s from Collyhurst to several areas including Cheshire, Tameside, Middleton and Oldham (Fielding & Davies, 42-43; Taylor, Evans & Fraser, 1996). During qualitative interviews, many older residents were aware of these post-war re-housing projects and commented on their impact on local social relationships. In several cases, Collyhurst residents openly described negative consequences of slum clearances:

Tony: When they started a slum clearance here, the old areas…and the old communities where people grew up together, they dispersed, scattered. Mostly toward East Manchester and Langley [Middleton]. When they re-built the houses, they brought new people in from other areas….Moss Side, Hulme, Chorlton, Streford. These people didn't grow up together, they didn't know each other and were different. They all brought their own ways of living with them and all that played a part in the problems round here. We preferred it how it was...living among people that we knew.

Previous literature on spatially dispersed social networks has theorised that distal relationships, being more costly to maintain, are often sacrificed in favour of geographically propinquitous contacts. It seems from this dataset that North Manchester residents choose to maintain geographically distanced alters over making new friends in bordering and neighbouring areas and that these ties were intergenerational and socially reproduced. Younger North Manchester residents with ties to East Manchester were less aware of the historical context of these regeneration and re-housing initiatives but still had contacts in the area. These interviewees described East Manchester residents as 'like us', 'down to earth' and 'normal'. Young (as well as older) interviewees exhibited a strong recognition of localities within this region such as Hyde, Clayton and Ashton and the cognitive spatial tag 'East Manchester' was familiar to all interviewed residents. In general, North Manchester residents were more aware of East Manchester neighbourhoods than West Manchester localities, even if they had not named alters in either areas.

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The case of East Manchester is interesting as assessing alters by the variable *years known* reveals that East Manchester ties were both long-term and newly established contacts. This illustrates that the networks between North and East Manchester are not only those of historical slum clearance ties, but also recently established friendships encouraged by both networked history and perceived social closeness. Social networks have evolved over time and also continue to flourish. This may be precisely because the prior existence of strong ties between neighbourhoods encouraged conditions for new meetings through social reproduction and overlapping social circles across relationship functions.

The slum clearance networks exemplify that spatial dispersion of networks can occur when there is some other social network 'pull' between groups, which encourages the maintenance of relationships over time and space. Patterns of interaction are not only based on geography, social motivators are of equal importance. Social closeness (even in combination with spatial distance) can act as a strong determinant upon network formation. It seems that we may not simply create relationships with those who are geographically available to us, but forging ties with those who are socially close matters too. In many instances, area effects mean that those who are spatially proximate are also likely to be socially similar. However, these data show that where socially similar groups live at some distance from one another, ties may still be formed and sustained (even over long periods of time). By using qualitative data to compliment the network data, it becomes possible to reveal evidence of slum clearance history over half a decade ago affecting the spatial arrangement of contemporary strong ties. For many North Manchester residents, East Manchester was a 'place' of fixed, concrete relations whereas West Manchester was devoid of these relations and meanings (de Certau, 1988; Auge, 1995).

Linking, bridging and diversity: South Manchester
A reasonable 5.1% of all alters named resided in South Manchester (slightly less than in East Manchester). Links between North and South Manchester were more likely to be constituted through friendship networks than any other type of relationship. A significant proportion (46.7% of all networks to South Manchester residents) occurred through the mode of friendship. Beyond North Manchester, most work colleagues resided in South Manchester. In fact, of all

workmates named, 17.9% lived in South Manchester (compared to 7.1% of work-mates in East Manchester and 2.4% in West Manchester).

South Manchester ties point to opportunities for network range because geographically dispersed networks established through non-local organisational settings may offer slightly more social diversity than kinship or localised friendship ties.   South Manchester also features the lowest number of partnering ties (2.9% of the total). This may indicate that, in contrast to other spatially dispersed areas, South Manchester alters are somewhat socially diverse to their North Manchester egos. As well as providing network range, South Manchester may encourage multiplexity. For example, there may be overlap between contexts; where work-mates become friends and friends become work-mates. The results might suggest that in contrast to the socially close and socially similar kinship and friendship ties found in the north side of the city, networks in the south may be comprised of bridging ties from work and social spheres. Whereas a range of alter relation categories are found to be important in geographically proximate areas (immediate, neighbouring and other North Manchester), South Manchester *specialises* in providing spatially dispersed work-colleague and friendship ties to North Manchester residents (and of course this process will work vice-versa). The findings supported the argument that spatially dispersed ties may be maintained because of their quality (Fischer, 1982). Quality in this instance equates to diversity. Spatially dispersed ties will be more likely to add structural and compositional diversity to a personal network, and in turn, this will influence the portfolio of capitals ego will have potential access to (Granovetter, 1973; Lin, 1986; Burt, 1992).

The crosstabulation below Figure 10 indicates that Prestwich, Crumpsall and Blackley have higher proportions of South Manchester alters than do other areas (12.6%, 7.8% and 7.4% of the total alters for each LSOA individually). Prestwich, Blackley and Crumpsall, having some gentrification and low residential homophily, also had the most spatially dispersed networks overall, with highest counts for other UK and international alters (though these counts were small and therefore unrepresentative). Closer analysis shows that there were only two egos naming international alters. They were both Blackley residents with high educational statuses (one with an undergraduate degree, one with a masters degree). One had lived elsewhere in

Manchester (Prestwich) before moving to the area. In the case of Crumpsall, non-white egos named alters dispersed across the UK, mostly in the Midlands but some also in Scotland. Finally, the Prestwich egos naming 'other UK' had in common their employment in professional occupations.

In contrast to geographically propinquitous ties, these spatially diverse networks will be less likely to suffer from redundancy (Burt, 1992). Spatial dispersion between resident egos and these alters also increases the likelihood for increased heterogeneity and efficiency. Residents with spatially dispersed and diverse ties will be more likely to find themselves in advantageous brokerage positions. Such 'opportunities' might come in the form of access to jobs (and therefore, it is not surprising that those ego-residents naming friends in South Manchester tended to be employed in service based occupations). It is perhaps significant that the general population composition of South Manchester differs from North Manchester. The contrast between north-south population compositions has also resulted in alternate landscapes, a class mix more evident in clusters of neighbourhoods in the south of the city, places where artistic and cultural scenes are more visible. Particular areas, especially Fallowfield, Chorlton and Didsbury attract a high proportion of residents possessing high educational and cultural capital, from beyond Manchester and overseas. South Manchester has a higher student and graduate population; a gentrifying result of the geographic positioning of the city's universities and student accommodation areas. South Manchester ties were likely to offer diversity and opportunity through network range, not only due to their spatial dispersion, but also because due to the more gentrified social composition of South Manchester (in comparison to North Manchester) work-mates and non-local friends tend to be less socially similar than family or localised friends. The data reveal that spatially dispersed ties may offer a diversity of social capital and, for this reason, are likely to be maintained by ego despite being more resource intensive (Fischer, 1982).

Chapter summary

This chapter has attempted to better understand the spatial patterning of resident networks in light of the social and structural contexts in which these interactions are embodied and

embedded. The chapter has analysed geographic propinquity and spatial dispersion in terms of the interplay between spatial, structural and social dimensions of personal networks.

Analysis of resident networks at different geographic levels raised intriguing results. Firstly, the macro-structure of urban personal networks revealed a non-random distribution of ties across the city. In the geographically arranged sociogram, ties were concentrated in the upper (northern) side of the sociogram and there appeared to be some clustering between subsets of localities. A dominance of kinship relations in North Manchester had contributed to the localisation of ties and pockets of density in urban space. The spring embedded sociogram layout confirmed some clustering between four 'core' LSOAs, with the remaining actors being peripheral to the network. This section of the chapter explored how the spatial cohesion of ties focused social interaction which resulted in a non-random distribution of resident social networks.

The next section considered geographic propinquity. The data revealed residential homophily in the social selection of alters; on average, over half of all alters named resided in the same immediate locality as ego. It seemed that ego's immediate residential locality acted as a 'foci' for all relationship types and provided network stability and cohesion through multiplex, long-term ties. Social order in these localised networks would encourage the reproduction of ties, underpinned by ideational motivations such as social similarity, shared identities and norm consensus. Though residential homophily was strong overall, proportions of same locality alters differed by LSOA; Collyhurst and Middleton (the most deprived sample localities) had the most residential homophily and Prestwich (the least deprived sample locality) had the least. Interestingly, the LSOAs with mid-ranging residential homophily rates were also those identified as 'core' in the core-periphery analysis.

The next section further considered the relationship between geographic propinquity and number of alters using an analysis of ties to neighbouring localities. There was a significant drop in numbers of alters from neighbouring areas, compared to those from ego's immediate locality (across all LSOAs). Thought the extent of the decrease in numbers of ties to neighbouring localities differed between localities; Middleton and Collyhurst had the lowest

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numbers, Prestwich and Crumpsall had the highest numbers of neighbouring alters. Qualitative explanations for the reduction in ties to bordering areas were sought. Low levels of interaction between residents of bordering localities were not explained by extreme, negative or antagonistic feelings; rather narratives highlighted subtle cultural cues of distinction and social distance resulting from normative and reproduced network practices.

There were also structural reasons for the drop in ties to neighbouring areas. It was argued that the immediate locality was such a powerful 'focus' for tie formation, that it simultaneously constrained the evolution of networks to other geographically proximate areas. Localities with high deprivation and high residential homophily had the lowest proportion of ties to bordering areas (thus highest social distance), whereas less deprived, gentrified localities with lower levels of internal ties had the highest proportion of ties to neighbouring areas (and lowest social distance). Questions were posed about the relationship between neighbourhood social cohesion and local social capital and a possible link between gentrification and spatial bridging ties.

The wider implications of geographic propinquity became clearer through a comparative analysis of proportions of residential homophily, ties to bordering localities and ties to other North Manchester areas. Beyond the social selection of alters from ego's immediate locality, spatial dispersion of personal networks did not follow clear-cut rules of propinquity. Geographic propinquity was found to be non-linear and non-universal in structure. That is, physical distance did not regularly determine the selection of alters. For some LSOAs this was marked by a significant drop in the number of alters selected from bordering areas and subsequent increases in selection from areas at further distances in North Manchester (Middleton, Collyhurst and Harpurhey). Other LSOAs (Moston, Crumpsall, Cheetham, Blackley and Prestwich) had tie patterns conforming to geographic propinquity; the number of alters decreased with physical distance and had healthy ties to bordering areas.

Building on the findings of the previous section, geographic propinquity across all three spatial distance levels appeared to be somewhat related to deprivation levels and gentrification. The localities conforming to linear patterns of geographic propinquity were deprived to a lesser

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extent than those not exhibiting geographic propinquity. In addition, localities with ties to bordering areas were also much more gentrified by class or ethnicity, whereas those areas not conforming were very homogeneously white and working-class.

The division of ties across East, West and South Manchester illustrate that social and structural factors were at play in determining patterns of interaction across urban space. Very few ties were found from North Manchester to West Manchester suggesting some relational social distance between these areas (Blau, 1977). Interview narratives supported the survey data confirming the existence of accompanying cognitive social distance as parts of West Manchester were often unknown to North Manchester residents. Previous sections in the chapter had observed unequally distributed geographic patterning of personal networks in urban space. It was therefore argued that, just as network cohesiveness had been found at the level of the immediate locality, network fragmentation had been observed from North to West Manchester.

In contrast to West Manchester, there were stronger levels of connectivity toward East and South Manchester indicating social cohesiveness resulting from inter-generational kin and friendship ties. These examples illustrated how social pulls might allow personal networks to transcend geographic constraints. With the exception of Prestwich, all LSOA residents named alters in East Manchester. As well as through friendship and family ties, a particularly strong indication of social closeness existed between North and East Manchester, evidenced through comparatively high proportions of partnering relations. Rather than the social distance and fragmentation found for West Manchester, observations of relational social closeness between North and East Manchester were supported by cognitive/ideational social closeness in resident narratives. North Manchester residents were familiar with East Manchester place names.

It was argued that both relational and cognitive forms of social closeness could be, in part, attributed to a history of slum clearance ties between North and East Manchester. The slum clearance examples maintain that geographic dispersion of networks occurs when there is some other social network 'pull' between groups; for example, in this case, shared identity or history. The data illustrated how networks of human interaction are not based solely on simple, linear

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process of geographic propinquity but that forging ties with those who are socially close (even if geographically distant) is a strong determinant upon network formation.

South Manchester was most distinctive in terms of offering a high proportion of work colleagues and friends. The chapter argued these South Manchester ties were likely to offer diversity and opportunity through network range, not only due to their spatial dispersion but also because, due to the more gentrified social composition of South Manchester (in comparison to North Manchester), work-mates and non-local friends tend to be less socially similar than family or localised friends. Secondly, in contrast to geographically propinquitous ties, these spatially diverse networks will be less likely to suffer from redundancy. An argument was made that there are social capital outcomes to personal networks based on social, spatial and structural factors. Additionally, different geographic environments appear to offer distinctive temporal and social contexts for network formation; the stable, fixed and prescribed family and long-term friendship relations in the north versus the more dynamic, diverse and choice-driven nature of ties with friends and work-colleagues in the South.

To build on the analysis of spatial cohesion in this chapter, the next chapter explores the relationship between spatial and structural cohesion in our sample of North Manchester resident networks.

CHAPTER 4: The relationship between structural and spatial cohesion: creating network typologies

Chapter overview

To build on and complement the analysis of spatial cohesion in the previous chapter, this chapter explores the relationship between structural and spatial cohesion in the personal networks of North Manchester. Rather than focus on the geographic patterning of ties in urban space, structural cohesion considers the shape or form of the network and the extent to which the structure is connected or disconnected. Section one analyses structural cohesion across the personal network survey data using Social Network Analysis measures. Firstly, structural cohesion is assessed using measures of degree centrality and density. Secondly, and in order to further explore network fragmentation, an analysis of components, cliques and isolates is undertaken. The third section consider the link between spatial and structural cohesion by exploring the relationship between spatial dispersion and density in the interview dataset. From this a structural-spatial typology is devised. Section four attempts to interpret the structural-spatial typologies in terms of locality and class effects. Findings on structural and spatial cohesion are summarised in the conclusion.

4.1 An analysis of structural cohesion across personal networks

This section analyses structural cohesion in our sample of urban personal networks. In order to conduct an exploratory analysis of network structure across this sample, personal network data for all 409 resident egos was entered into the software package EgoNet (McCarty, 2006). For this analysis of structural cohesion, it was necessary to remove each ego actor from their personal network because otherwise, if egos were present, all networks would have some cohesion (since egos have relations to all their alters). Calculating structural cohesion scores with absent egos ensured that any fragmentation became visible. Based on review of literature, it seemed appropriate to apply a 'battery' of network measures (Freidkin, 1981) of density and degree centrality alongside an analysis of components, cliques and isolate frequencies (Knoke & Yang, 2008; Degenne & Forse, 2007; Burt, 1978; White, 1998; White & Harary, 2001; Moody and

White, 2003; Wasserman and Faust, 2007).[43]   Chapter 3 showed that most residents had geographically localised networks with fewer instances of spatial dispersion. In other words, resident networks were predominantly spatially cohesive. Though there were variances by locality, overall resident ties were predominantly spatially fixed and localised; based within ego's immediate locality or the North Manchester area. There were some indications of links between spatial and social cohesion, for example, between geographic propinquity and social closeness illustrated through a dominance of kin-ship and long-term ties in North Manchester. Yet this was not always observed, especially in ties to bordering neighbourhoods. Propinquity was therefore non-random and non-linear supporting the view that particular social conditions were necessary for spatial and structural cohesion to occur. There is a body of literature to suggests that spatial cohesion of networks is linked to high density; particularly because localised networks tend also to be multiplex and long-term (Durkheim, 1893/1933; Simmel, 1901/1955; Bott, 1957; Blau, 1977; Freidkin, 1984). If there is a relationship between spatial cohesion and structural cohesion in this sample, we find that most networks have high density and centrality scores with few components, cliques and isolates.

Density and Centrality

Structural cohesion can be studied using a combination of social network scores; in this sub-section measures of density and degree centrality are used.

Density and degree centrality conceptualise cohesion based on the adjacency of nodes in a matrix (Wasserman & Faust, 2007: 263). Despite their analytical similarity these measures can actually be applied to measure structural cohesion in different ways. Degree centrality scores represent the extent to which 'paths' connect individual actors; the presence or absence of paths can determine the cohesiveness of the network. Recall that ego is removed from this measure of structural cohesion, so that degree centrality is not a measure of the size of ego's personal network, but the number of edges observed following ego's removal. It therefore measures the number of ties between alters. Density is a calculation of the number of ties observed in the network as a proportion of all possible ties, expressed in an undirected network as $n(n-1)$. Its

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[43] See Chapters 1 and 3 for a fuller discussion of these measures.

focus on global-level structural connectedness makes density an appropriate measure of group cohesion (Nguyen & Peschard, 2003). In this study of personal networks, density provides an overall summary score for understanding network cohesiveness across personal networks, whereas degree centrality is applied to inform an assessment of structural cohesiveness at different internal levels. For a more holistic interpretation of structural cohesion, it is therefore useful to report both scores together.

An analysis of both degree centrality and density scores helped to assess the overall network and sub-network levels of structural cohesion for the sample of resident networks. Across all personal networks, density ranged from 25% to 100%. The minimum degree centrality score was 1 through to degrees of four (with maximal structural cohesion where all five alters were connected to one another).[44] This range of scores immediately showed some diversity between personal networks; the networks displayed different measures of cohesiveness. Very importantly, none of the networks had 0% density (or no degrees) so none of the networks were entirely structurally fragmented. Since all networks had at least one degree, this meant that all ego-residents had named at least two alters who were connected. The likelihood of structural cohesiveness over fragmentation made sense, given that Chapter 3 had revealed spatial cohesion through a prevalence of localised ties. If resident egos were naming nearby alters, it was more likely that these alters would also know each other than not know one another.

Table 7: Centrality scores for personal networks

		Max Degree	Max Close	Max Betw
Valid		409	409	409
Missing		0	0	0
Mean		3.37	79.98	.94
Std. Error of Mean		.081	2.442	.117
Median		4.00	100.00	.00
Mode		4.00	100.00	.00
Std. Deviation		.944	28.377	1.363

Table 8: Maximum degree scores in personal networks

		Freq	Percent
Valid	1	27	6.7
	2	51	12.6
	3	73	17.8
	4	258	63.0
	Total	409	100.0

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[44] As noted EgoNet removes each ego from their network when calculating personal network scores. Given that the study name generator allowed ego to name up to five alters (and these alters cannot have to a tie to themselves or ego), each of these people logically has a relationship with a minimum of zero and maximum of four alters in ego's network.

To explore the relationship between geographic patterns and structural cohesion further, it was necessary to look at the personal networks in more depth. How were density and degree centrality scores spread across the sample? The first step was to consult the measures of central tendency (see Tables 7 and 8).

The mean degree centrality score was 3.37 with median and mode scores both at 4 degrees. A four degrees was the maximal possible score per network, which immediately showed that most personal networks had very high levels of structural cohesion and were quite tightly-knit, comprising alters that had relationships with each other independent of ego. In fact, 80.8% of networks could be described as tightly-knit with density scores of >0.75. Of these, 63% of resident networks achieved the maximum of four degrees (total density) and degrees of three were observed in 17.8% of cases where network alters were connected by one or two degrees.

Fewer personal networks had low structural cohesion. Density scores of between 25% or 50% were observed in the remaining 19.2% of cases. Degrees of two were observed in 12.5% of cases and 6.7% of personal networks had extremely low connectivity with only one degree. In fact, 80.8% of networks could be described as tightly-knit with density scores of >0.75. Of these, 63% of resident networks achieved the maximum of four degrees (total density) and degrees of three were observed in 17.8% of cases where network alters were connected by one or two degrees. The degree centrality scores revealed the possibility of isolates as well as those with a minimum of two connected alters (an analysis of isolate frequencies in the next section will help explain this further).

Indeed, what is striking is the similarity between proportions of networks which are structurally cohesive in comparison to the proportion of ties which were identified as geographically propinquitous in Chapter 3. In this chapter, 80.8% of personal networks were found to have degrees of three or four. In chapter 3, 81.9% of personal network ties were found to be geographically proximate, that is, localised to North Manchester. Maximal density was found in 63% of networks and residential homophily was found in 57.7% of cases. When looking at network fragmentation, this chapter found 19.2% of networks with low structural cohesion, similar to the 18.1% of spatially dispersed ties found in Chapter 3. Are spatial and

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structural elements of personal networks mutually reinforcing? Do residents with high density and degree centrality scores also name geographically proximate alters?

Understanding structural cohesion is as much about fragmentation as it is about connectivity. There were no networks with 0% density, showing that some level of structural cohesion was always present because in all networks at least two alters were connected. This finding made sense for two reasons. Firstly, egos were asked to name only five alters. In such a small number, we would expect there to be some cohesion between pairs. Secondly, the survey data focused on frequent, face-to-face strong ties and so some homogeneity between alters was likely and such social similarity would increase the chance of alters forming relationships (Friedkin, 1984, Collins, 1988). If ego shares a strong bond with his/her alters, we can reasonably expect dyadic connections between some of these strong tie alters. Such effects have been well demonstrated in social network studies through principles of triadic closure, overlapping social circles and multiplexity (Simmel, 1922/1955; Granovetter, 1973), transitivity, (Wasserman & Faust, 1994; Louch, 2000) and redundancy (Burt, 1978). Nonetheless, in this study, there was certainly variance between networks in terms of their density and degree centrality scores. Though most networks were very dense overall, some of these structures were denser than others and establishing reasons for this required further exploration.

Given the varying degrees of density it became prudent to explore the spatial structure of these personal networks. The density range yielded was surprising, especially bearing in mind that this is a network study of face-to-face, frequent, strong-ties. It was expected that it would be unusual to find low density and degree centrality because of this bias for localisation in the name generator. Yet despite the geographically localised and affectively close nature of a majority of these relations, there still existed some structural disconnect. Triadic closure principles would predict that where ego has a strong tie to two alters (A and B), there is a great likelihood that alters A and B will also themselves be connected by a tie, even if weak (Davis, 1963; Granovetter, 1973). This has occurred in most instances, but not for a minority of cases. The variance in density and degree centrality scores hinted at potential differences of spatial distributions across personal networks. Might it be that a large proportion of these dense social

networks are also localised, whereas the smaller number of low density networks may be found to be spatially dispersed?

This section has illustrated structural cohesiveness of the personal networks using measures of degree centrality and density. Firstly, variances in degree centrality and density scores demonstrated a range of network structural types, but overall, most networks were found to be structurally cohesive with high density and high degree centrality scores. Secondly, the proportion of cases divided across density and degree centrality scores was similar to the proportion of cases found to be geographically propinquitous and spatially dispersed. This elucidates a relationship between spatial distribution of alters and structural cohesion in personal networks. Finally, further analysis on network fragmentation is required. Although a majority of networks were found to be highly interconnected and a range of cohesive forms were found, including dyadic, triadic and quadratic structures, there were still points of disconnection and isolates did exist in some cases. Though density and degree centrality are useful for analysing network cohesion, they are limited in exploring fragmentation, isolates and multiple components. The next section will go on to explore these issues in more depth.

Components, cliques and isolates

In addition to analysing density and degree centrality to explore structural cohesion it was useful to explore points of disconnection or fragmentation in the networks. This section analyses the frequencies of components, cliques, dyads and isolates.

A significant proportion (93.3%) of personal networks had only one component (a maximal connected subgraph).[45] Of these, 63.7% of the total satisfied the stricter 'clique' criteria where each alter was directly tied to all other alters in the network (these were the networks identified earlier with 100% density).[46] Finding that most personal networks had just one component

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[45] Scott (2007:114-115) outlines the difference between a component and a clique. Whilst a component is maximally connected, 'all points are connected through a path'; a clique is both 'maximal and complete…all points are adjacent to one another. Yet, only strong components and cliques may be detected in this dataset because the relations are reciprocal (albeit defined by ego, not the alters themselves).

[46] Wasserman & Faust (2007: 264) suggest a more relaxed n-clique procedure to overcome what they describe as a strict and often limited application of formally defined cliques. Others outline the use of k-plex or k-core measures where

reinforced the suggestion that the personal networks in this sample were highly cohesive overall. In 93.3% of personal networks, even when some alters were not directly connected, there was always a path of two or three degrees of reachability. Importantly, this meant that there was structural cohesiveness even in many low density networks. Only 6.9% of networks had two or more components and could be described as 'disconnected' according to definitions provided in the literature (Hage & Harray, 1983; Wasserman & Faust, 2007).   It was estimated that these disconnected, multi-component networks would have higher levels of spatial dispersion than networks with only one component. Reports of isolate frequencies showed that a majority (73.3%) of personal networks had no isolates. In these networks, all alters were connected to at least one other alter.

Despite the overall cohesive tendency of these networks, some fragmentation did exist. Isolates existed in networks where dyadic, triadic or quadratic structures of cohesion were present, leaving at least one alter disconnected from the network. Single isolates were found in 17.8% of networks, two isolates in 5.9% of networks, 3% of networks featured three isolates. There were no networks with four isolates because, as already discussed, the minimum degree observed was one, meaning that all networks had some level of alter-alter connectivity. Dyad frequencies statistics confirmed this. Most networks (89.9%) were not constituted of dyads, but of larger social structures with more than two connected actors. So even though it could not be concluded that all networks were very dense, most networks had highly cohesive structures. This meant that despite all of ego's contacts not knowing each other, in a majority of cases, when ego was removed from the network, there was still a link or 'reachability' (Wasserman & Faust, 2007) between all alters even if this was not necessarily a direct path of 'knowing'. In real social terms, communicative or resource transferring paths were still theoretically open (Erickson, 1988) indicating that, except in the most disconnected networks, egos did not often play brokerage roles as most networks were redundant.

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cohesion of subgroups is based on meeting a specified nodal degree (Seidman & Foster , 1978; Seidman, 1983), but these measures were not integral to this analysis.

Table 9: Descriptive statistics and dispersion scores for dyads and isolates

		Dyads	Isolates
N	Valid	409	409
	Missing	0	0
Mean		.1407	.3852
Std. Error of Mean		.03815	.06308
Median		.0000	.0000
Mode		.00	.00
Std. Deviation		.44324	.73287
Variance		.196	.537
Minimum		.00	.00
Maximum		2.00	3.00

Table 10: Descriptive statistics and dispersion of cliques and components

		Cliques	Components
N	Valid	409	409
	Missing	0	0
Mean		1.0593	.9333
Median		1.0000	1.0000
Mode		1.00	1.00
Std. Deviation		.62010	.25037
Range		3.00	1.00
Minimum		.00	.00
Maximum		3.00	1.00

If we analyse structural cohesion using the stricter clique measure rather than components, we uncover further fragmentation. In addition to personal networks with single cliques (63.7%), 20% of networks had two cliques, 15.6% had no cliques and 0.7% of networks had three cliques. Defining structural cohesion through cliques reveals internal differentiation between the personal networks. Some are more fragmented than others, depending on the number of cliques observed. This is important for understanding the internal dynamics of the personal networks and also the implications for egos. The presence of cliques demonstrates the existence of close-knit subgroups within personal networks. For example, networks with two cliques had two 'camps'. Everyone in Camp A is connected and everyone in Camp B is connected. There may or may or may not be an edge connecting both camps. If Camp A and Camp B were

connected they would be in the same component, but exist as separate cliques. Why does the distinction between clique and component matter for this study? We see how analysis of structural cohesion depends very much on the structural boundaries or levels of cohesion allowed by the researcher. If we were to analyse components only, we would find that most networks (93.3%) belong to one joint structure and may, therefore, be loosely classified as structurally cohesive. However, looking at cliques involves a stricter definition of cohesion and subsequently fewer networks would be classified as structurally cohesive. Cliques reveal differentiated levels of structural cohesiveness. As an example, again take the cliques of Camp A and Camp B in personal network Y. All individuals in Camp A are connected to one another, as are those in Camp B. Let's assume there is a path connecting both camps, so that they also exist as part of the same component. We may define personal networks as cohesive at the level of component; in this sense, network Y is highly cohesive. If we define structural cohesion at the clique level, the same personal network Y now features some fragmentation. Cliques, therefore, not only reveal sub-groups within components but also encourage a more nuanced and qualitative understanding of network structural cohesion.

Is it meaningful to claim that these urban personal networks are cohesive simply because all alters are part of the same component? Or, is it better to set the levels of structural cohesion highly so that 'cohesion' is defined strictly and based on a more complex combination of network structures? Assumption of resource flow between actors is often a feature of network analysis. Yet this simplifies social network processes and masks inequality. Social networks are not guaranteed conduits of resource flow, rather paths of connectivity may demonstrate potential for some sort of one-way or reciprocal translation. Do personal networks with high levels of structural cohesion tend also to be socially cohesive? In his argument on the strength of weak ties, Granovetter (1973) claimed that cliques have a tendency toward social similarity, not only in attitudes but also in terms of individual attributes. Indeed, the very evolution of the cliques in this study may have been encouraged by processes of homophily, ideational or residential. Markovsky (1998) found high structural cohesion to be a good proxy for social (ideational) forms of cohesion. Structural cohesiveness at the clique level may encompass some measure of social cohesiveness. Egos with personal networks featuring independent cliques may have more opportunity for access to diverse resources (Burt, 2000). Though given the

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geographic propinquity found in Chapter 3, it is likely that these cliques will be overlapping and therefore socially similar. To gain access to a diversity of resources and 'linking' social capital (Woolcock, 2001), ego would have to look beyond these cliques. This point will be explored later in the chapter; suffice to say for now that we can take cliques as a stricter criteria for structural cohesion, though understanding how cliques operate and the qualitative implications this has for egos is much more nuanced.

The analysis so far has served to illuminate several key issues. Firstly, overall, most networks were found to be structurally cohesive with high density, high degree centrality with low numbers of components, cliques and isolates. However, score variances existed across networks indicating the internal diversity and range of cohesive structures. Secondly, the data unveiled a relationship between spatial distributions of personal networks and structural cohesion as the proportion of cases across density and degree centrality categories was similar to the proportion of cases found for geographic propinquity and spatial dispersion. If analysing density and spatial dispersion together, are we likely to find that most networks are dense and localised with a small number of low density, spatially dispersed networks? This will be examined in more detail later in the next sections of this chapter. Finally, although most networks were found to be structurally cohesive, some isolates and multiple cliques and components were found. Taking a stricter definition of cohesion favouring cliques analysis over components analysis made it possible to differentiate further between 'cohesive' networks. That is, it was possible to identify the varying extents of structural cohesiveness. The cliques analysis also led to questions about the normative nature of cliques and implications for egos in terms of the flow of capitals. Is high structural cohesion in personal networks related to social cohesiveness? That is, are structurally cohesive personal networks also more likely to be homophilous in terms of ideational categories (attitudes, ideas, values, practices)? The next section takes further steps to analyse structural cohesion in the context of geographic space by creating a measure of spatial dispersion.

4.2 The relationship between structural and spatial cohesion

The thesis has so far has provided separate analyses of spatial and structural cohesion for our sample of North Manchester resident networks. This section will attempt to unify these analyses by exploring the relationship between structural and spatial cohesion.

The idea that personal network structure is constrained by physical space has in recent years been criticised as out-dated. In more recent years, academics have argued that the advent of communication technologies and increased social mobility have created more dispersed social networks (Wellman, 1979; Castells, 2000; Sassen, 2002). It has been claimed that contemporary urbanites are becoming increasingly mobile (Urry, 2000, 2006) and are better able to establish and maintain spatially dispersed networks, mediating their relations through technologies (Wellman, 2001, 2005); they are supposed to have fluid or liquid relations (Bauman, 2000). The spatial cohesion of networks of course has structural implications; the more spatially dispersed our contacts are, the less likely they are to be connected to each other. Chapter 3 argued that some contemporary personal networks are still constrained by spatial foci and do not necessarily transcend geography. This was especially evident in our sample of personal networks of residents from deprived localities. The residents of this study did not have global networks; aside from a few outliers, contacts were mainly confined to the city. Nor were these individuals highly educated, affluent or living mobile lives. Spatial dispersion was defined relative to the sample of networks and contextualised in terms of the sample localities. Geographic and social mobility are often associated with high levels of economic and cultural capital (Wu, 2005; Lin, 2009), so generalisations concerning spatial and structural forms of personal networks are misleading. The results illustrate that dense, localised networks still exist in contemporary cities and that not all urban residents participate in activities associated with mobile lifestyles.

What then are the implications of these patterns of spatial cohesion upon the structural forms of personal networks? This section of the chapter has analysed the structural cohesiveness of the survey networks. Most networks displayed cohesive structures which supported the observations of geographic localisation in Chapter 3. Conversely, a smaller, yet still significant proportion of networks had low structural cohesion. It was likely that these networks would be

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more spatially dispersed. An analysis of cliques revealed differentiation between networks with cohesive structures, as networks could be defined as cohesive to varying degrees.

 Further analysis is required to understand the relationship between structural and spatial cohesion in our sample of resident networks. The following three sections draw on interview data because these networks are larger in size and were more reflective of ego's immediate social world. The first section takes one property of structural cohesion, density, and investigates its relationship with network spatial dispersion. The second section attempts to understand this relationship between structural cohesion and spatial cohesion by creating a personal network typology. The third section discusses the typology, particularly how different structural-spatial types might be interpreted given the previous findings of the study.

Calculating spatial dispersion

Although both localised cohesive networks and sparse-dispersed networks are facilitated via embodied practices and, therefore, embedded in physical space, it is argued that the former will be characterised by increased embeddedness because the social and spatial settings of these network are likely to be more fixed. In order to explore social and spatial network embeddedness in relation to properties of structural cohesiveness, this section attempts to develop a deeper understanding of the relationship between the network variables of density and spatial dispersion. Density was selected as a good proxy measure on the basis of its frequent application to the study of structural (as well as social) cohesion (Simmel 1902; Burt, 1982; Durkheim, 1951; Sampson et al, 1997; Lin, 2001; Nguyen & Peschard, 2003) and its comparative suitability to spatial descriptions of networks. A scale measure of spatial dispersion is developed so that it may be applied alongside the existing formula for density.

It became essential to create a measure for spatial dispersion, which applied a similar scale to network density, therefore, making both measures comparable (and also to permit comparisons across ego cases). Network density in a binary network is calculated from the total number of ties divided by the total number of possible ties, expressed as n(n-1), with scores ranging from 0 (most sparse) to 1 (most dense). To complement the existing measure of network density, a measure of spatial dispersion had to be created to fit the 0-1 scale.

A suitable existing categorical measure for spatial dispersion was not found during a literature search.[47] Alter residential locations were weighted so that spatial dispersion scores could be measured relative to ego's home location. Alter residential localities were ranked according to categorical distances (same locality = 0, neighbouring area=1, other north Manchester=2, East/West/South=3, beyond Greater Manchester=4). These codes provided weighted spatial categories for alters. A maximal parameter was set at category four because it was extremely rare for interviewees to name alters living beyond the city. The network variable for spatial dispersion (SD) was calculated thus, the sum of alters in each spatial category divided by the maximum possible dispersion score, which can be expressed as:

$$SD = \frac{\sum ia}{4\,k}$$

Where, i is the number of alters, a is the spatial category and k is total no of alters in ego-network. The spatial dispersion scale operates on a comparable measure to that of network density. A spatial dispersion of 0 represents no dispersion and all alters must reside in the same locality as ego. A score of 1 represents the maximal possible spatial dispersion, in this case, to achieve an SD score of 1, all alters must live beyond the Manchester area. Once comparable measures were available for network density and spatial dispersion, each interview ego was attributed scores for both dimensions.

Classification of structural-spatial typologies: linking density and spatial dispersion

This section uses the data to explore the relationship between density and spatial dispersion and applies the measures to create socio-spatial typologies.

It was decided that the personal network data collected during interviews offered better scope for studying the relationship between spatial dispersion and density than the survey network

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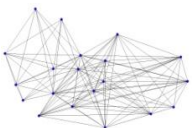
[47] The closest option would have been to use the software package ORA to map interval distances between postal code areas. This method was not suitable for the present study as during the research design stage it was decided that survey and interviewee respondents would not have free and accurate recall of alters' postcodes or even street names, so local area was collected instead.

data. The interviewee networks were larger in size (from 7 to 53 nodes), featuring a variety of alter types arranged across different spatial configurations and social circles. In addition, the interview narratives could be introduced at a later point to provide additional depth to assist understanding of the variety of network shapes. A total of 53 semi-structured interviews were conducted with residents from LSOAs with high IMD rankings in the following four areas – Middleton (15), Blackley (14), Collyhurst (12) and Prestwich (12). The gender composition of this sample was similar to the survey dataset; 20 interviewees were male, 33 were female. Each ego case was given a score spatial dispersion using the formula above, as well as a separate score for network density.

Considering how to classify the interview data networks into typological categories took a considerable amount of thought. At the most basic level of categorisation, assuming the ego networks fall into either high or low measures of both spatial dispersion and density could theoretically produce four topographical structures (Figure 11).

Figure 11: Ideal type constructions of social-spatial network topographies

Dense-localised: high density, low spatial dispersion		**Dense-dispersed**: high density, high spatial dispersion	
Sparse-localised: low density, low dispersion		**Sparse-dispersed**: low density, high spatial dispersion	

Source: Adapted from Axhausen, K.W.(2005) and Ohnmacht (2006)

Though the topography above seemed to make sense theoretically, it was not very helpful for interpreting the personal network dataset. Qualitatively defining what constituted 'localised', 'dispersed', 'sparse' and 'dense' and making assessments as to which egos suited which category became a difficult task. Are social networks that are dense and localised in physical space to be defined are cohesive for social network purposes? What happens to those who fall outside of the classifications, for example, mid or median-density and dispersion scores?

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Should these be categorised as high or low? Though the simple topographies were a useful starting point, classification for the thesis dataset required more sensitive analysis. This real social data was messy and did not follow a neat, logical structure. Inductively speaking, it was essential that the typology fit the data and not vice-versa. Despite coding, visualising and printing out sociograms, it was still impossible manually to categorise each individual's personal network accurately according to the Axhausen & Ohnmacht schema. Any final typology had to be inductively constructed and primarily informed by patterns inherent in the dataset, rather than being theoretically led.[48]

Assessing the range and distribution of both density and spatial dispersion scores aided the classification process. Table 11 shows the distribution of density and geographic dispersion. Definitions of 'high' or 'low' density and spatial dispersion were informed by observable patterns in the dataset. Density scores followed a near normal distribution pattern with a peak around the mean, whereas geographic dispersion was found to be negatively skewed with most people having localised networks. Interpreting the data to create typologies and classifying egos into structural categories required an element of qualitative human interpretation in order to fit the cut-off points according to naturally occurring clusters within the sample. For example, spatial dispersion scores were not spread across the entire 0-1 range, but from 0-0.75. Although many interviewees had entirely localised networks (SD mode of 0.00), no-one had a score of 1 for spatial dispersion (nobody named a set of alters all living beyond the city). The highest scores for spatial dispersion were between the 0.5-0.75 mark, beyond the likely maximal value of 0.5 found in the random choice models of Mayhew and Levinger (1976), so it became reasonable to interpret this range as representing 'high dispersion'. There were also clusters of very low scores for spatial dispersion from 0-0.2 and these reflected the 'low dispersion' range of egos with the most localised networks.

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[48] This qualitative comparative analysis of the interview data was necessary because these data were not sampled randomly (unlike the survey data). The sampling strategy underlying this dataset meant that comparative analysis between interview networks had to be undertaken with caution for example density scores are not directly comparable across cases. Moreover, any assessments regarding this dataset were conducted qualitatively and interpretations from this point onwards were made with reference to the sample context and not generalised beyond.

Table 11: Distribution of spatial dispersion and density scores in the interview sample

		SD	Density
N	Valid	53	53
	Missing	0	0
Mean		.25707	.50098
Median		.21050	.52300
Mode		.000	.620
Std. Deviation		.214766	.247962
Minimum		.000	.080
Maximum		.774	1.000

Though it was possible to identify very high and very low ranges of spatial dispersion scores, most cases fell between these extremes. This was indicated by the SD mean of 2.57 and a median of 2.1. This would be problematic for transferral to the high/low typological structure as proposed by Axhausen (2005) and Ohnmacht (2006). The distribution of density scores operated differently to that of spatial dispersion. Density had a wider range and used upper and lower parts of the measurement spectrum (from 0.08-1), unlike spatial dispersion, which did not reach the maximum possible score. The mean score for density was 0.5 and the mode 0.62, relatively higher the 0.33 mean density found by Wellman in the networks of East Yorkers (1979: 1215). [49] Histograms revealed that density scores conformed more closely to a standard distribution than did spatial dispersion (see Figures 12 and 13). Overall, the interviewee networks had high structural cohesion (like the survey networks) with high spatial cohesion.

Figure 12: A histogram of spatial dispersion scores
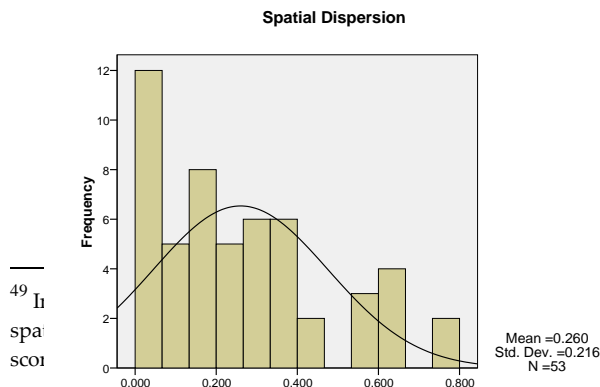
Figure 13: A histogram of density scores
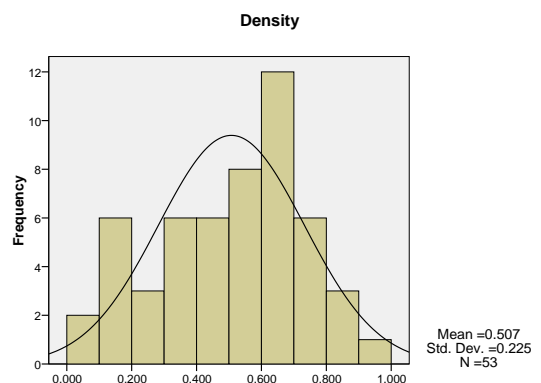
Statistical analysis of the scores revealed that there was a moderate negative correlation of -.668 between spatial dispersion and density (p<0.01 level, two-tailed test). This suggests that high scores of network density are related to low scores of geographic dispersion; that is, the more local contacts one has, the more likely they will know each other. Conversely, low network density was related to high spatial dispersion, meaning that if our contacts do not know each other, it is likely that they live at further distances from ego. This relationship is displayed in the scatter plot, Figure 14, which maps scores for density by spatial dispersion.

Figure 14: A scatter plot of network density and spatial dispersion scores for the interview sample data
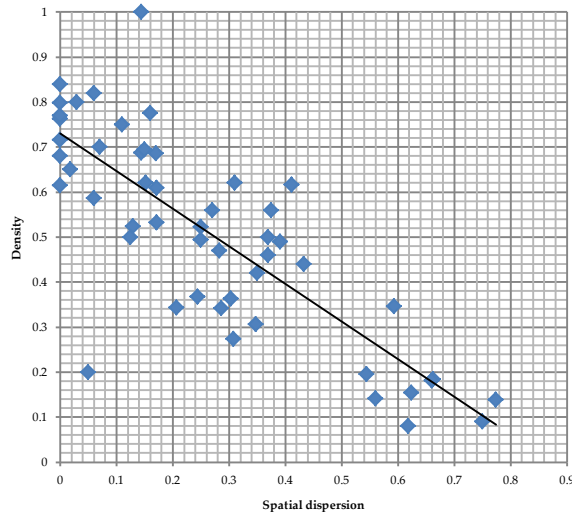
The scatter plot reveals some interesting points of discussion. Firstly, the graph visualises the negative relationship between density and spatial dispersion indicated in the Pearson's correlation test. Aside from two outliers, most cases fall around the line of best fit. The outliers do not appear to conform to the rest of the sample scores and represent extremes of high and low not replicated by any other egos. It is fairly likely that these cases will not fit into a typological classification, though they do show the existence of some irregularity in social behaviour. Overall, however, the plotted data reveals that there are certainly some strong patterns inherent in social network structure and empirically demonstrates a relationship

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between density and spatial dispersion. The graph also confirms that structural diversity exists within this sample of residents from deprived neighbourhoods (found across both the survey and interview data). Secondly, there appears to be some clustering of cases.

The most obvious cluster congregates on the lower right side of the graph and represents individuals with low density, high spatial dispersion networks. There is a larger group falling around the upper side of the line of best fit. These are people with higher levels of network density coupled with lower scores for spatial dispersion. On closer inspection it appears that this larger group may actually be made of two sub-clusters: those with very dense and very localised networks in the top left of the scatterplot (6 of whom have entirely localised networks), with another cluster of individuals with mid-level scores for both variables. Also interesting is the distance between those with spatially dispersed, low density networks to other individuals. What is distinctive about egos in this group compared to the other two clusters? Could social distance underlie these differences in network structure? Certainly, the findings of this chapter support those of Chapter 4, namely that structural diversity exists across personal networks, even within this relatively socio-economically similar sample of residents. Likewise, the interview and survey data seem to produce mutually reinforcing conclusions about the relationship between spatial and structural cohesion.

The scatterplot and dispersion scores point toward the suitability of a three point typological structure for understanding the density and spatial dispersion in social networks. This diverged from the four category hypothetical construction of social-spatial network topographies by Axhausen (2005) and Ohnmacht (2006), though two of the four theoretical types were observed in this dataset, one was an anomaly case (sparse-localised) and the other was not meaningful (dense-dispersed). This suggested that only two categories of the hypothetical topography were useful in explaining observed human interactions. Logically this makes sense and confirms other research findings. Category scores were not mutually exclusive and degrees of overlap were found between types. This was not a major issue because it was the combination of both density and spatial dispersion scores that would enable classification into categories. For example, despite some overlap between the lowest observed density score for type 1 and the highest observed density score of type 2, the category for ego

density score could be interpreted alongside the accompanying categorisation of spatial dispersion. Neither spatial dispersion nor density is taken as independent but classified relative to one another. Table 12 below provides a guide for typological classification. Although relativity between scores is expected to persist, actual observed scores may be slightly higher or lower than the measurement criteria.

Figure 15: Observed social-spatial network typologies
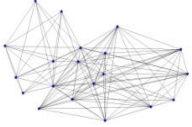
Localised-cohesive: high density, low spatial dispersion	Observed	**Dense-dispersed**: high density, high spatial dispersion	Not observed
Sparse-localised: low density, low dispersion	1 anomaly case	**Dispersed-fragmented**: low density, high spatial dispersion	Observed

Table 12: Summary statistics and descriptives of observed typological structures

Type	Measurement criteria	Density		SD		Descriptive
		Obs min	Obs max	Obs min	Obs max	
TYPE A: Localised-cohesive n=25	Density >0.5, SD <0.25	0.5	1	0	0.250	Structural-spatial cohesiveness: egos with predominantly localised ties to alters that are often connected, very high density and very low spatial dispersion. Bonding capital.
TYPE B: Median-diverse n=19	Density = 0.2-0.65, SD = 0.2-0.6	0.274	0.617	0.207	0.594	Structural-spatial diversity: egos with a mixture of localised and dispersed ties and some alter-alter connectivity, resulting in median density and median spatial dispersion scores. Linking capital.
TYPE C: Dispersed-fragmented	Density <0.2, SD >0.55	0.08	0.196	0.545	0.774	Structural-spatial fragmentation: Egos with ties to alters that are often disconnected, very low density and very

| n=8 | | | | | | high spatial dispersion. |
| | | | | | | Bridging capital |

Table 13: List of spatial dispersion and density scores for each interview case, organised by typological category

TYPOLOGICAL STRUCTURE SCORES: DENSITY & SPATIAL DISPERSION							
TYPE A: localised-cohesive		TYPE B: Median-diverse		TYPE C: dispersed-fragmented		Anomaly	
Low Spatial Dispersion	High Density	Mid Spatial Dispersion	Mid Density	High Spatial Dispersion	Low Density	Low Spatial Dispersion	Low Density
0.000	0.681	0.412	0.617	0.545	0.196	0.050	0.200
0.000	0.615	0.304	0.363	0.560	0.141		
0.000	0.840	0.594	0.346	0.750	0.090		
0.170	0.686	0.433	0.440	0.774	0.138		
0.060	0.587	0.308	0.274	0.624	0.154		
0.144	0.688	0.287	0.342	0.663	0.184		
0.100	0.620	0.310	0.620	0.660	0.182		
0.250	0.522	0.207	0.344	0.618	0.080		
0.172	0.533	0.348	0.307				
0.000	0.799	0.271	0.560				
0.000	0.763	0.244	0.367				
0.130	0.524	0.391	0.490				
0.125	0.500	0.283	0.470				
0.152	0.620	0.250	0.494				
0.144	1.000	0.370	0.460				
0.150	0.695	0.370	0.500				
0.000	0.770	0.350	0.420				
0.060	0.820	0.375	0.560				
0.000	0.716	0.214	0.290				
0.110	0.750						
0.160	0.775						
0.070	0.700						
0.172	0.610						
0.018	0.650						
0.030	0.800						

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Individual scores for each ego were assembled into a table to make better sense of the three point typology and confirm its appropriateness to the data. The density and spatial dispersion scores for all egos did fit this arrangement aside from one outlier case which was labelled an anomaly (the other case appearing to be an outlier on the scatterplot conformed to Type A). Table 13 shows the scores for density and spatial dispersion for each ego interviewee and illustrates how each case was assigned to one of the three typological categories.

Given the suitability of the three category typological structure, the following category labels and descriptions were decided upon: Type A: localised-cohesive (very high density and very low spatial dispersion); Type B: median-diverse (spatial and structural variation of networks resulting in mid-level density and mid-level spatial dispersion); Type C: dispersed-fragmented (very low density and very high spatial dispersion). Developed inductively, this typology was much more meaningful and contextualised to the data.

The frequency of cases under each typology is interesting. Most personal networks fell into Type A (n=25), advocating that the combination of localised-cohesive networks is most common in the sampled LSOA areas. To some extent, a prevalence of high density and low spatial dispersion was expected in this sample of personal networks given the deprivation ranking of the local areas and also that individuals with low economic and cultural capital are the least mobile (Urry, 2000, 2010). The finding that most interviewee residents had high density localised networks reflects that Chapter 3 found most residents to have geographically localised ties. This contrasts with Wellman's study of East York resident networks, which concluded that personal networks had become liberated from local spatial confinements (Wellman, 1979). This finding can also be contrasted with the spatial dispersion and low density observed by Blokland *et al* (2003) in Hillesluis, the Netherlands, and by Frei and Axhausen (2007) in Zurich, Switzerland. This divergence from existing studies points to the specific nature of social networks and the dangers of making comparisons across networks without acknowledgement of context (Faust & Skvoretz, 2002). It is perhaps prudent to consider the effects of class, deprivation and locality in influencing the structural and spatial form of this sample of resident networks (this will be explored later in the chapter and also in Chapter 6).

Taking the findings of Chapters 3 and 4 together supports the case that structural cohesion is related to spatial cohesion. It was thought that Type A networks, being localised and cohesive, would be based on 'bonding' social capital (Putnam, 2000) and strong ties (Granovetter, 1973). Indeed, these factors would be particularly conducive to residential homophily, and long-term, spatially fixed networks. Nineteen cases fit the Type B category. Type B residents featured structural-spatial diversity through a mixture of localised and spatially dispersed ties and this assortment of ties could be distinguished from the structural homogeneity of Type A and C networks. This category was useful as a middle ground between localised and dispersed, though it was surprising that the middle category was not actual the 'normal' category – because it was not the most popular type. It was estimated that Type B ties may provide 'linking' social capital by connecting localised and spatially dispersed groups of alters (Woolcock, 2001). As a consequence of connecting groups at dissimilar spatial locations, it was likely that this spatial variability would incorporate some social diversity. If so, by nature of their structural-spatial form, Type B actors would have access to a wide portfolio of resources, experiences, attitudes and practices.

Finally, 8 personal networks were categorised as Type C. It was expected that fewer people would have sparse and spatially dispersed networks due to the economic and social composition of LSOAs. This supports the findings of chapter 3 which found fewer people to have spatially dispersed personal networks and that propinquity effects in dense, localised situations (Festinger, 1950a, 1950b; Festinger, Schacter and Back, 1950, Feld, 1981). Given their spatial dispersion and structural fragmentation, Type C ties were thought to encompass elements of 'bridging' social capital, connecting similar types of individuals through weak ties (Putnam, 2000; Granovetter, 1973).

The typology offers a way of presenting and understanding structure in what seems a complex set of networks. The typologies empirically demonstrate the relationship between structural cohesiveness and the spatial patterning of ties. High scores of network density were related to low scores of spatial dispersion; the more local contacts one has, the more likely they will know each other. The distribution of density and spatial dispersion scores across ego cases illustrates

that most strong-tie interaction in this contemporary sample was tight-knit and localised, not 'fluid' or dynamic.

The typologies offered information about the range of structural diversity as well as indicating the proportion of cases conforming to each type. Most networks were spatially and structurally cohesive (Type A: localised-cohesive) but the number of cases reduced as structural and spatial cohesion decreased (from Type B: median-diverse, to Type C: dispersed-fragmented). Only a small proportion of networks was highly dispersed and fragmented (Type C). The proportion of cases across typological categories prompts questions about whether there might be individual attributes associated with each type. Are there individual level attributes that make Type A, B and C individuals different from one another, beyond their structural-spatial type? What might be underlying distinctions between residents of each typological category? The next section explores the link between structural-spatial typologies, localities and class.

4.3 Interpreting the structural-spatial typologies: effects of locality and class

This final section of the chapter explores whether there were latent locality and class effects influencing the typologies. A review of literature in Chapter 1 described contradictions regarding the relationship between class and spatial dispersion of resident personal networks. Bott (1957, 1971) had argued that there was a link between the class and network structure; a high proportion of here inner-city working-class sample of personal networks was dense and localised. Similarly, Laumann (1973) discovered that lower class groups who were long-term residents were most likely to have dense, localised and multiplex network structures. These findings were supported by more recent research by Atkinson & Kintrea (2001) which found a link between structural and spatial cohesion of personal networks in contexts of urban deprivation. Conversely, Wellman had found that the personal networks of East York residents had become spatially dispersed and fragmented regardless of class and income (Wellman, 1979).[50] His findings have also been supported (Blokland *et al*, 2003 and Frei & Axhausen, 2007).

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[50] There was no relationship between the typologies and age or gender.

In addition to class these effects, some locality effects could be identified. Empirical analysis of spatial compositions revealed that most deprived localities acted as powerful foci for resident networks (Feld, 1981). Beyond ego's immediate locality, geographic propinquity did not regularly determine the selection of alters; there were differences between LSOAS. The most deprived localities (Middleton, Collyhurst and Harpurhey) saw a significant drop in the number of alters selected from bordering areas and subsequent increases in selection from areas at further distances in North Manchester. However, the lesser deprived and/or gentrified LOSAs (Moston, Crumpsall, Cheetham, Blackley and Prestwich), had tie patterns conforming to linear geographic propinquity; exhibiting patterns of healthy ties to bordering areas with the number of alters decreasing with physical distance. Geographic propinquity was perhaps related to deprivation levels and population composition (homogeneity or gentrification). Localities not conforming to linear patterns of geographic propinquity and with few or no ties to bordering neighbourhoods were more deprived than the set of localities exhibiting propinquity effects. Would these geographic network differences between localities be reflected in the interview typologies? To what extent did particular localities produce certain network types? Was there a link between locality and typological structure?

Table 14 shows the distribution of typological cases across the four interview localities.[51] The most deprived and homogeneous LSOAs, Middleton and Collyhurst had the most localised, dense network structures demonstrated by a high number of Type A structures.

Table 14: A crosstabulation of number of resident-interviewees by locality and typological structure

Type	Middleton	Collyhurst	Blackley	Prestwich	Total
A: localised-cohesive	10	9	6	1	25
B: median SD & density	4	3	7	4	19
C: dispersed-fragmented	0	0	1	7	8
Total	14	12	14	12	52

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[51] 52 of the 53 resident interviewees were classified into the typological structure; one anomaly case did not fit the categories (see Table 13).

There were no Collyhurst or Middleton residents with Type C networks, though some had Type B networks (n=3, n=4, respectively). The least deprived LSOA, Prestwich, had the most Type C structures; its residents had the most sparse-dispersed personal networks. Indeed, all Type C residents were from the least deprived LSOA of Prestwich with the exception of one Blackley resident. Blackley and Prestwich could be described as having more structural-spatial diversity between resident networks, because these localities featured cases across all three typological categories. On the other hand, the more deprived localities of Middleton and Collyhurst had resident cases falling only into Type A and Type B categories; indicating less structural-spatial diversity between residents of these areas. The findings reinforced those of Chapter 3, where spatial network similarity was found amongst residents of the most deprived areas, with more spatial diversity amongst residents in lesser deprived and more gentrified LSOAs. In this chapter, we see that structural-spatial cohesion was highest for residents in the most homogeneous LSOAs, whereas the networks of residents of socially mixed localities had more structural-spatial diversity.

Table 15: A crosstabulation of number of resident-interviewees by locality and occupational class

		Occupational class			
		Professional or intermediate	Routine or manual	Long-term unemployed or never worked	Total
LSOA	Middleton	0	9	5	14
	Blackley	1	4	10	14
	Collyhurst	0	8	4	12
	Prestwich	7	4	1	12
Total		8	25	19	52

To understand the typologies further it was necessary to establish how class categories were spread across the LSOAs. To what extent was class composition underpinning the relationship between typological structure and locality? Table 15 crosstabulates occupational class by locality and demonstrates that most localities feature a range of classes.

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The spread of cases implies that occupational class may not be directly influencing the relationship between typological structure and locality. All interviewees with professional or intermediate occupations lived in the least deprived locality of Prestwich. Despite the prevalence of Type C networks for Prestwich, some residents of this locality were in lower occupational class groups. Unexpectedly, the LSOAs with most Type A (localised-cohesive) networks and highest deprivation rankings (Collyhurst and Middleton), did not have the highest number of cases for the 'long-term unemployed' or 'never worked' categories (Blackley has the highest frequency). Most interviewees from Collyhurst and Middleton were employed in routine or manual occupations. The analysis shows that the relationship between occupational class and locality was not clear-cut; locality deprivation did not seem to be underpinned by class composition for this sample. Although higher occupational class groups tended to reside in the least deprived LSOA, there were individuals in professional and intermediate jobs living in more deprived areas. Furthermore, the highest number of 'long-term unemployed and never worked' interviewees were not drawn from the most deprived localities. The localities actually featured a range of class groups, which clarifies that the link between network structure and locality was not necessarily produced by latent class effects.

Given that class and locality did not seem to be strongly related, the next step was to explore whether there was a separate connection between typological structure and occupational class. Did people of particular classes have certain typological structures?[52] Table 16 crosstabulates the number of residents by typological structure and occupational class.

Generally, the data shows that typological structure was linked somewhat to occupational class, though not entirely determined by it. Overall, Type C groups were mostly composed of individuals from professional/intermediate occupations; but there were some individuals lower on the class scale who also had this type of network. There was also one professional/intermediate worker in the Type B category, but no Type A residents. On the

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[52] A chi-squared test of significance was attempted but some cell counts were too low for this to be meaningful. Fischer's exact test was not appropriate either, as the data was not in the form of a 2x2 table (nor was it appropriate to reformat the data this way).

other hand, Types A and B had higher frequencies of residents from routine/manual or the long-term unemployed/never worked group (only one person in each of these occupational groups had a Type C network). Taking occupational class into account, there seems to be a hierarchy to the typologies, with Type C's occupying the highest class groups and Type A's occupying the lowest occupational positions.

Table 16: A crosstabulation frequency of resident-interviewees by typological structure and occupational class

| | | Occupational class | | | |
		Professional or Intermediate	Routine or manual	Long-term unemployed or never worked	Total
Typological structure	A	-	16	10	26
	B	2	8	8	18
	C	6	1	1	8
Total		8	25	19	52

Both locality and class were important in determining structural-spatial cohesion of personal networks, though this analysis was not conclusive. Also, class and locality effects may have acted upon network structure independently of one another the effects may have been interlinked.[53] However, there were some observations in this sample worth noting. Overall, structural-spatial cohesiveness was found for lower class groups and high locality deprivation, whereas higher class groups and less deprived or gentrified localities were found to have structurally and spatially fragmented networks. These results support the findings of Bott (1957, 1971), Laumann (1973) and Atkinson & Kintrea (2001) and can be distinguished from Wellman (1979), Blockland *et al*, (2003) and Frei & Axhausen (2007). Though the relationship was not causal, there was some link between structural-spatial cohesiveness in resident

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[53] Despite evidence of class and locality effects upon network structural and spatial cohesiveness, these effects were by no means conclusive or generalisable. Deeper qualitative analysis illustrates cases that did not fit these patterns and also reveals individual-level diversity within the typological categories (see Appendix).

personal networks, locality and class. Arguably, the context of deprivation was important, particularly, homogeneity between residents had encouraged localised, dense ties to evolve in some localities more than others (Greenbaum & Greenbaum, 1985; Baum & Atkinson, 2010).

Summary

This chapter has attempted explore the relationship between structural and spatial cohesion in this sample of urban personal networks. The chapter began with an analysis of structural cohesiveness using measures of density, degree centrality, cliques, components and isolates. Density and degree centrality scores showed that a majority of personal networks were tightly-knit. In fact, none of the networks had 0% density and densities of over 0.75 were observed for more than 80% of cases, illustrating the overall structural cohesiveness of these personal networks. Despite this, it was acknowledged that varying degrees of density and degree centrality were present in the sample; some networks were simply more connected than others.

As well as connectedness, network fragmentation was explored. Again, an analysis of cliques and components showed the sample of personal networks to be mostly cohesive in structure with few isolates. Despite the overall cohesiveness of networks, fragmentation did exist in a small number of cases where multi-components and isolate nodes were observed. There were implications for network redundancy and reachability, discussed in terms of structural inequality. Though nodes were rarely found in structurally advantageous brokerage positions in the most cohesive networks, there was nearly always some path of connectivity between alters which would permit resource flow. The sparsest of networks featured less redundancy and therefore ego-residents with these networks may have been most structurally privileged. Despite all LSOAs being ranked as highly deprived, structural homogeneity was not found across this network sample as a whole. Some discussion was given to the differences between networks of high connectivity compared to those which were fragmented and it was estimated that the least connected networks would have higher levels of spatial dispersion. Overall, the analysis so far had found most strong-tie networks to be structurally cohesive with high density and degree centrality scores and a low number of components, cliques and isolates. A prevalence of high structural cohesiveness was expected given the nature of the sample. An exploration of literature in Chapter 1 led to the proposition that deprived neighbourhoods would yield residents with low social and geographic mobility and, subsequently, structurally

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and spatially cohesive networks. Though most networks were structurally cohesive, some minority cases were found to display low density, low degree centrality, multiple cliques/components and/or featuring isolates. This prompted further questions. Why were there differences between resident network structures? Was structural cohesion related to spatial cohesion?

The next part of the chapter endeavoured to use measures of spatial dispersion and density to create a set of socio-spatial typologies. A moderate negative correlation was found between network density and spatial dispersion in the interview network dataset, indicating that high density was related to low spatial dispersion (r=-.668, p=0.00). A three category typology of structural-spatial types was produced. Most residents fell into the Type A category (localised-cohesive, n=25), Type B (median-diverse) featured 19 cases with fewer networks conforming to Type C (dispersed-fragmented, n=8). Most networks were dense and localised with a minority set of networks exhibiting low structural cohesion with high spatial dispersion. The typology supported the claim made in Chapter 3 that for this sample of residents, interaction was primarily face-to-face, localised and mediated through dense components. Structural cohesiveness was accompanied by geographic localisation (spatial cohesiveness) and structural fragmentation was linked to spatial dispersion.

The final section of the chapter argued that class and locality effects influenced the structural-spatial typologies, though the relationship was not clear-cut and the effects of these factors were perhaps interlinked. The most deprived localities (Middleton and Collyhurst) had the most Type A networks (localised-cohesive). There were no instances of residents of these localities having Type C networks, though a small number had Type B networks. The least deprived LSOA (Prestwich) had the highest frequency of Type C networks; it seemed its residents were better able to create and sustain spatially dispersed and low density social relationships. Structural heterogeneity was more likely to develop for residents of less deprived or more gentrified LSOAs; Prestwich and Blackley had the most structural diversity as their residents' networks were observed across the three typological categories. The analysis explored whether the link between typology and locality was underpinned by class but the answer was not clear-cut. Class compositions were not explicitly determining the link between locality and

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typological structure. Though most professional or intermediate occupational interviewees were drawn from the least deprived area of Prestwich, some residents from higher occupational groups were also recruited from more deprived localities. Similarly, the most deprived LSOAs of Middleton and Collyhurst did not have the highest number of long-term unemployed/never worked residents-interviewees; Blackley did. An analysis of class by typological structure revealed a hierarchy to the typology, with Type C's occupying the highest class groups and Type A's occupying the lowest occupational positions. Overall, structural-spatial cohesiveness was related to lower class groups and deprived localities, whereas higher class groups and lesser deprived, gentrified localities had structurally and spatially fragmented networks. Though some effects of locality and class were found for this sample, it was difficult to disentangle one from another.

The next chapter explores the link between ideational cohesion and structural-spatial cohesion, particularly how ideational aspects of urban cohesion are framed in the context of network structure.

CHAPTER 5: Framing ideational cohesion in the context of structural-spatial network forms

Chapter overview

This chapter introduces the ideational dimension of urban cohesion. Previous chapters have so far analysed structural and spatial cohesion in personal networks, this chapter seeks to explore the link between ideational cohesion and structural-spatial cohesion. It identifies cohesiveness of resident attitudes and practices and uses interview narratives to explore how interpretations and experiences 'frame' these ideations in the context of network structure.

The first part of the chapter uses a Principal Components Analysis (PCA) of the survey data to identify latent attitude and practice structures. The result is a set of ideational constructs of urban cohesion. The second section attempts to understand the relationship between network structure and ideational components. Interviewees with high scores on each ideational construct are classified by network structural type. The result is visualised as a two-mode social network of affiliations between ideational constructs and structural-spatial types. The third section investigates the ways in which residents' interpretations and experiences 'framed' the ideational constructs. Finding common frames not only reveals structure to ideational aspects of urban cohesion but also demonstrates a link between ideational and structural-spatial cohesion. The analysis is concluded in a chapter summary.

5.1 Ideational constructs of urban cohesion

This section presents the results of a Principal Components Analysis (PCA) as ideational constructs of urban cohesion and discusses the meaning of each component in turn. In addition to name generator questions in the resident survey, participants were also asked a set of ideational questions relating to urban cohesion (see Appendix). These questions were focused on the individual's views of the locality and local practices. An exploratory Principal Components Analysis (PCA) was undertaken to simplify the attitudinal and practice-based

survey responses into a smaller set of latent components.[54] The top four, accounting for most variance, were selected as ideational constructs for analysis in this chapter; Component 1: General neighbourhood satisfaction, Component 2: Local embeddedness, Component 3: Access to employment opportunities, Component 4: Sense of community[55]

Component 1: General neighbourhood satisfaction

The first component solution seems to encompass a general overall satisfaction with the locality associated with trust, perceived safety and generalised local contentment ('mostly feel safe in area', 'this is a good area', 'area has relatively low crime rate', 'enjoy living in area' and 'most residents can be trusted'). It encompasses the basic elements of a well-functioning neighbourhood. The loaded variables hint at an underlying agreement that there is a sense of local well-being and that the neighbourhood is operating properly (broadly conceived). By not focusing on civic and institutional obligations or public services, it falls short of describing neighbourhood perfection, but certainly communicates a generalised positive attachment and identification with the local area and other residents. Constituent aspects of a well-functioning locality may be subjective, however the component variables may point to commonly agreed fundamentals underpinning a healthy local area. This first ideational component accounts for the most variance (23.3%) and was expected to have high levels of validity and reliability as it incorporates frequently tried and tested variables for measuring social cohesion and neighbourhood perception in policy, for example, the Citizenship Survey (Heath & Lawrence, 2008).

Component 2: Local embeddedness

The second largest component, accounting for 13.6% of the total variance, included high loadings for the variables 'went to a local school', 'lived in area for most of life' and 'know lots

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[54] As a data reduction method, PCA was selected to facilitate the analysis of attitudes and practices across typologies. PCA was chosen over Factor Analysis as the aim was to condense the survey attitudinal and behavioural variables into a simplified set of latent ideational components, including all variance. Further discussion of the method, including full details of the agreed PCA solution, interpretation and labelling of components, is provided in the Appendix.

[55] The accepted PCA solution featured five components. Component 5 accounted for a low amount of variance so the PCA routine was re-executed to request a four component solution, but this reduced overall commonality scores so was not accepted. It was agreed that Component 5 was not substantively strong, so has not been in the analysis of this chapter. See Appendix for further explanation.

of people in this area'. The underlying latency here is local, historically based, social embeddedness. It focuses on habitual practices, reproduced and sustained over time, facilitating the building of local social networks.[56] The component captures individuals with overlapping social circles that are socially, spatially and temporally rooted. Other questionnaire variables relating to the quality, affective or emotional content of local personal relationships did not load well into this component. The conceptual meaning of the component is not based on emotional attachment or identification with the locality but with connectedness based on communal participation in local social practices. This ideational component addresses only a concrete, embodied dual embeddedness of the individuals in the physical space of the locality and in the social space of networks with other residents.

Component 3: Informal access to jobs

The third Component concerns informal access to job opportunities or information through personal contacts. The variables 'got a job through a network contact', 'hear about jobs through network contact' and 'worked locally' all load highly on to the third component holding 9.3% of the total variance. Component 3 demonstrates informal job related opportunities and establishes a latent link between employment, networks and neighbourhood. Given that social capital is largely determined by an individual's personal network structure and access to capitals (Bourdieu, 1986; Lin, 1999, Burt, 2005) it was expected that this latent variable of local social capital might be more salient for some structural-spatial types than others. Whereas the second component may be interpreted as linked to network constraint, this third component exemplifies opportunities through social networks. It points to an underlying transformative capacity for local social capital to evolve into economic capital. The Pearson's correlation coefficients (Table 22) show that 'hear about jobs through network contacts' has a moderate positive correlation with 'got a job through a network contact' ($r = 0.555$). Hearing about a job did not equate to securing employment. This demonstrates the ability of some residents, more than others, to transform knowledge or information generated from local social networks into

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[56] Another variable, *'go to a local pub'*, loaded quite well on to this component however its loading on to component 5 was marginally higher so it was not classified as an incorporating variable. The variable also has the lowest communality score (see appendix) therefore, was not perceived to have reliability. Theoretically, socialising in a local pub fits well in this component as it represents a locally embedded, socially embodied practice. The reliability of the variable may have been compromised as not all local areas had pubs or bars, so significantly reducing the ability of respondents to answer positively to the survey question.

economic capital.[57] The analysis implies that only some people are able to instrumentally use their social networks to gain knowledge or information, and then transform this into actual economic capital.

Component 4: Sense of Community

The fourth component suggests an underlying emotional connection with the local area and with other residents ('most residents share the same values as me', 'I know and like my neighbours' and 'I feel that I belong to this area'). It incorporates the presence of local networks, ties and bonds, leading to what some may term a 'sense of community'.[58] In contrast to component 1 which describes objective factors integral to building the foundational basis of a successful neighbourhood, this forth component is subjective and emotional. It highlights a collective participation in local networks underpinning a sense of communality and closeness.

Correlations between components and ego attributes

As an output of the PCA routine in SPSS, Anderson-Rubin (A-R) scores were computed for each individual (Anderson-Rubin, 1956). The A-R scores were used to analyse non-parametric correlations between the components and ego attributes. Ego's age, occupational class and education had some relationship with the constructs of urban cohesion. Ego's sex and residential locality did not correlate with any of the components. Table 17 displays correlations between ego attribute variables and Anderson-Rubin component scores, highlighting some interesting points.

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[57] The legitimacy of the component variables in forming an authentic latent category might be criticised on the grounds of there being a possible hidden causal relationship. For example, the underlying similarity or correlation may have been generated because hearing about jobs through local people, leads to getting a job and consequently working locally. The survey questions were randomly assigned to combat order effects. The spatial work-place location did not matter. The focus was not on where work was located (because some occupations were unlikely to be locally based) but whether residents had been able to secure employment through their network social capital. Answering positively to the first two variables alone signifies that local social networks were instrumental in aiding the job search, but the actual job could have been based anywhere. Besides, hearing about a job did not always transpire into a concrete employment opportunity. It is therefore likely that the component reveals a genuine latency, rather than a causal association.

[58] The variable 'I feel that I belong to the area' loaded approximately equally on to components one and four (loading values of 0.449 and 0.500 respectively). Given the slightly higher loading it was placed primarily in the fourth component.

Firstly, age and occupational class were related to outcomes for Component 2, local embeddedness. For this sample, local embeddedness increased with age (r=.321, p<0.00). This makes sense as becoming tied to a neighbourhood involves allocating time to building local networks and becoming involved in local activities (Riger & Lavrakas, 1981; McMillan & Chavis, 1986). Opportunities to become embedded may increase through the life-course (from childhood school attendance, to teenage youth clubs and development of local friendships, through to localised work and leisure involvements as adults).[59]

A negative correlation (r = -0.148, p<0.05) was found between occupational classification and component 2. This indicates that lower occupational class groups are more locally embedded than higher occupational class groups. Given that embeddedness increases with age but decreases with occupational status begs further questions around whether component 2 captures elements of hierarchy and constraint in ideational urban cohesion. The social, spatial and temporal rootedness of these embedded relationships may be linked to the residential homophily in local foci found in Chapter 3.

Correlations for component 4, sense of community, highlight distinctions between this construct and Component 2. Interestingly, where increased age was associated with local embeddedness, the Anderson-Rubin PCA scores reveal a negative correlation between age and component 4 (r = -0.227, p< 0.002). This indicates that despite being less locally embedded, younger people were more likely to respond positively to the variables addressing 'sense of community'. However, whereas occupational class was related to local embeddedness, it was not correlated with feeling a sense of community.

Turning to correlations for Component 3 also reveals some interesting points. There was a significant correlation between Component 3 and ego's educational level (r = 0.235, p<0.002). Residents with higher levels of education had better access to job information through informal network contacts and were also better able to transform this social capital information into

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[59] The study surveyed working age egos and therefore elements of network shrinkage or social isolation associated with elderly people were not captured, otherwise the observed positive relationship would have perhaps dipped at old age.

actual employment opportunities. The findings may support the argument that there is a latent class structure and a social hierarchy to this ideational indicator, and that cultural capital may have been related to access to jobs (Lin & Ao, 2008). It had been previously estimated that Type A residents, with the most dense and localised networks, would be most privy to informal job information and best able to transform this information into work opportunities. However, the data clarify that this is not the case. Chapter 4 illustrated that Type A residents mostly occupied lower class groups so it was unlikely that this group was highly educated. By nature of their structural-spatial form, it was estimated that Type A residents would be the most locally embedded. Yet, local embeddedness and access to employment opportunities (Components 2 and 3) were not related. Local embeddedness did not increase informal access to employment opportunities through personal networks, nor did informal employment opportunities emerge from being strongly embedded within the locality. This was surprising as it was posited that investments into building local social networks over time would advantageously position these individuals to both hear about work and secure work.

Table 17: Correlations between A-R component scores and ego attributes

	Spearman's rank	Ego age	Ego's residential locality	Ego highest education level	Occupational Classification, ONS (SOC2000)	Ego Sex
A-R score PCA 1	Correlation coefficient	0.04	0.00	.137	-0.74	-0.85
Neighbourhood satisfaction	Sig. (2-tailed)	.957	.998	0.68	.328	.260
A-R score PCA 2	Correlation coefficient	.321(**)	.050	.131	-.148(*)	.042
Local embeddedness	Sig. (2-tailed)	.000	.510	.083	.049	.575
A-R score PCA 3 Informal access to jobs	Correlation coefficient	-.131	.082	.235(**)	-.058	.031
	Sig. (2-tailed)	.081	.275	.002	.442	.679
A-R score PCA 4 Sense of community	Correlation coefficient	-.227(**)	.103	.117	.037	.074
	Sig. (2-tailed)	.002	.172	.122	.623	.325

* 0.05 or **0.01 significance levels, n=409.

The next section attempts to better understand how the ideational constructs of urban cohesion link with structural-spatial types using methods of Social Network Analysis.

5.2 A two-mode network of ideational constructs and structural-spatial types

This second section visualises affiliations between the ideational components and the structural-spatial typologies in a two-mode network. The aim of this exercise is to reveal the structure of urban cohesion by delineating the relationship between attitudes, practices and network structure (or ideational cohesion and structural-spatial cohesion).

In addition to providing correlations between the components and ego attributes (as in Table 17) above, A-R scores were also computed for each resident-respondent to provide information on each individual's alignment with a component. Alignment on an ideational component depended on the extent to which individuals has responded positively or negatively to the variables nested within that component (Anderson & Rubin, 1956; DiStefano, Zhu, & Mîndril 2009). A high number of positive responses to nested variables lead to an individual receiving a high A-R score for that particular component. Ideational cohesion can be said to exist between individuals with similar component scores because they responded to survey questions similarly.

Table 18: The distribution of A-R scores for all individuals

		A-R factor scores (C1)	A-R factor scores (C2)	A-R factor scores (C3)	A-R factor scores (C4)
N	Valid	409	409	409	409
	Missing	27	27	27	27
	Mean	.0000000	.0000000	.0000000	.0000000
	Median	-.1204664	-.3464389	.0767876	-.1300687
	Mode	-.99395	-.84997	-1.22443	-.54524
	Std. Deviation	1.00000000	1.00000000	1.00000000	1.00000000
	Minimum	-1.52990	-1.46622	-2.09463	-1.75773
	Maximum	2.23743	2.09079	1.77929	3.05115
Percentiles	25	-.9679261	-.8499739	-.9907060	-.7034688
	50	-.1204664	-.3464389	.0767876	-.1300687
	75	.6368166	.9172378	.8343767	.4476593
	85	1.2854535	1.3360805	1.2159146	.8421814

In this section, the A-R scores are used to illustrate the extent to which the ideational components were associated with the three structural-spatial types. Table 18 summarises the distribution of A-R scores for all individual cases (survey and interview respondents).[60] Individuals with scores in the top 85% of each component were classed as having a high loading or alignment with that component and coded 1, any scores below this were recoded as null. These new binary scores represented the alignment of each resident interviewee with each component.

Table 19: Frequencies of high component alignments by structural-spatial network type (interviewees only)

		C1	C2	C3	C4
Type A: localised-cohesive	n	12/25	20/25	4/25	17/25
		48%	80%	16%	68%
Type B: median density & SD	n	4/19	4/19	13/19	11/19
		21%	21%	68%	57%
Type C: dispersed-fragmented	n	5/8	0/8	4/8	1/8
		63%	0	50%	12%

Table 20: Column normalisation of high component alignments by structural-spatial network type

	C1	C2	C3	C4
Type A: localised-cohesive	0.36	0.79	0.12	0.5
Type B: median density & SD	0.16	0.21	0.51	0.42
Type C: dispersed-fragmented	0.48	0	0.37	0.09

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[60] The A-R scores provide orthogonality; the mean is always 0 and standard deviation is always 1.

The component alignment scores for interviewee residents were then analysed alongside their network structure.[61] Table 19 uses frequencies to illustrate the proportion of residents with different structural-spatial types aligning with each component. Matrix scores were normalised (see Table 20) and from this, a network graph could be created. Of course, the aim was not to establish clear-cut relationships between ideational cohesion and structural-spatial cohesion; rather to use the network as a starting point from which to qualitatively unpick the social construction and framing of ideational cohesion in the context of network structure.

Figure 16 : A Two-mode network of ideational indicators and network typologies (iterative metric-MDS layout, normalised column scores)
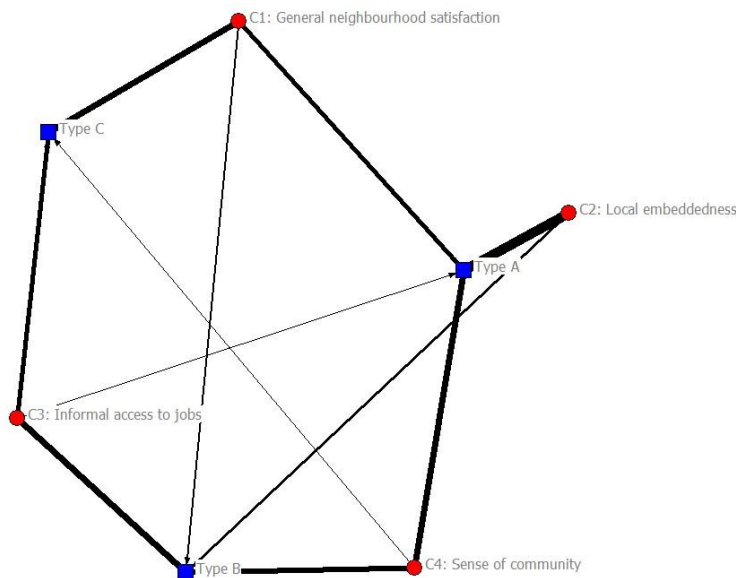
Figure 16 is a two-mode network of structural-spatial types and the ideational components of the PCA, based on the normalised matrix scores. The network has been visualised using a metric multi-dimensional scaling (MDS) layout to preserve structural patterns inherent to the original data, so that 'pairs that are socially closest in the observed data should be spatially

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[61] Recall that although explorations of structural cohesion in Chapter 4 were based on the 409 survey networks, the structural-spatial typology was created from the 53 interviewee networks because these networks featured a larger number of alters. Similarly, the creation of principal components and explorations of the distribution of A-R scores in this chapter are based on the sample of survey networks – though the analysis of component alignment scores alongside typological structures could only be performed using interview case data.

closest in the graphic image….and those pairs that are the most socially remote in the data should be the farthest apart in the image' (Freeman, 2007: 249). The thickness of the edge determines the strength of connection. [62]   Nodes are positioned close together when they have similar profiles of connections. In this case, structural-spatial types are located close to one another in the sociogram space if they share similar connections to ideational components. Correspondingly, ideational components are 'similar' or close in this social space when they are tied to the same network types. Finally, connectivity may be exhibited across modes; ideational components and network types share a relation where an edge (or tie) is present.

What might this sociogram tell us about the structure of urban cohesion? The relative positioning of nodes is important; nodes that are similarly located may form meaningful 'types' or 'domains' of social action (Breiger, 1974). If the whole network represents the field of 'urban cohesion', we may also draw on Bourdieu & Wacquant's (1992: 39) definition of a 'field' as 'a network of objective relations between positions'. The closeness or distance between ideational and structural-spatial types may help us understand the link between network form and attitudes and practices relating to urban cohesion.

An initial observation is that the structural-spatial types are not clustered together; rather they are positioned distinctly in the space, indicating that these network forms have separate profiles. The ideational constructs are also located quite independently of one another. Rather than find clustering amongst the two modes, the sociogram reveals independence and distinction between network types and components.

Interestingly, each network type is positioned closer to an ideational construct than to another network type. Each structural-spatial type is only two degrees away from any other, through a connecting ideational construct. Types B and C share strong ties to Component 3 but their patterns of ties are not similar enough for these nodes to be positioned closely to one another. Similarly, Types A and B are connected through Component 4.   Component 1 links Type A and C, though these structural-spatial nodes are quite distant in the metric space.

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[62] The data was re-scaled to metric MDS (accounts for the weights/magnitude of relations when producing the structural order). Tie strength is calculated as the percentage of individuals affiliating with each component, by structural-spatial type. Resident 'affiliation' with each component was determined by Anderson-Rubin scores for each individual case.

The way in which particular ideational components are located near to particular network types may tell us something about the structure of urban cohesion. The dense-localised structures of Type A residents are positioned close to emotional constructs of cohesion (Components 2 and 4, local embeddedness and sense of community). Whereas, Type C residents connect strongly to two pragmatic constructs; Component 3 (informal access to jobs) and Component 1 (general neighbourhood satisfaction). Type B, the network type featuring most structural and spatial diversity, has strong ties to Components 3 and 4, so is able to bridge between emotional and pragmatic ideations (whereas Type A and B do not). The sociogram may suggest that Type B actors play 'linking' roles between emotional and pragmatic forms of ideational cohesion, whereas Type A and Type C remain confined to their own specific ideational domains. The network structure shows that although residents play distinct roles in contributing to urban cohesion, none of the nodes are isolates; so the system of urban cohesion may be held together by some overlap between these roles. This two-mode network figure will be further elaborated on in the next chapter during a discussion of the roles residents play in contributing to urban cohesion.

The next section of this chapter explores these relational positions of ideational constructs and network structures using qualitative data and attempts to understand how attitudes and practices relating to urban cohesion are framed in the context of structural-spatial type.

5.3 Ideational frames: linking structural-spatial cohesion with ideational cohesion
This section provides a critical analysis of the relationship between ideational components of urban cohesion and network structure, as identified in the two-mode sociogram. The aim of analysing ideational frames alongside network form is to explore qualitatively the link between structural-spatial cohesion and ideational cohesion (Markovsky, 1998; Markovsky and Lawler, 1994; Moody & White, 2003). Drawing on a critical analysis of resident narratives, this section unpicks the 'framing' of ideational constructs (Kuypers, 2009; Snow and Benford, 1988; Snow et al, 1986, McLean, 1998) in the context of residents' network structures.

It was assumed that residents with similar experiences, meaning and interpretations of the ideational constructs exhibit similar framing strategies. Qualitative analysis could then be used to explore framing strategies in relation to structural-spatial types. A theoretical typification of ideational 'frames' was developed:

1. Ideational homophily: where residents with the same network type frame an ideational construct similarly.

2. Ideational convergence: residents with different network types frame a component similarly.

3. Ideational divergence: when people with different network types construct different frames for the same component.

4. Ideational inconsistency: where multiple frames are found for the same network type and on the same component, highlighting experiences of conflict or discrepancy.

Broadly, the sets of typifications fall into ideational agreement or disagreement between network structural types. Examples 1 and 2 are illustrative of 'frame alignment' (Snow and Benford, 1988), whereas 3 and 4 are cases of 'framing disjuncture' (Ibrahim & Crossley, 2011). Table 21 characterises these hypothetical types of ideational framing in relation to network structure.

Table 21: Hypothetical framing typifications and network structure

Framing of same ideational component by network type			
Structural-spatial similarity			
Frame alignment	Ideational homophily	Ideational inconsistency	Framing disjuncture
	Ideational convergence	Ideational divergence	
Structural-spatial difference			

The next sections undertake a qualitative analysis of narratives to critically unpack how ideational aspects of cohesion are interpreted, experienced and, subsequently, 'framed' in the

context of network structure. The narratives include individuals with high component scores and illustrate instances of frame alignment and disjuncture within and between structural-spatial types. Though the relationship between network structure and ideational constructs was not straightforward and shifts were found both within and between structural-spatial types, common frames were found within the data and these were linked to similar experiences between residents with similar network structures. Instances of ideational homophily and divergence were found most frequently but no instances of convergence were found, which explicates constructs of urban cohesion as framed in the context of personal network structure.

The next sections present the results of this qualitative analysis. The first two sections provide examples of ideational divergence. First on Components 1 and 3 (general neighbourhood satisfaction) between Types C and A. Secondly, on Component 3 (informal access to jobs through network contacts) between all structural-spatial types. These are followed by an example of ideational homophily by Type A residents on Components 2 and 4 (embeddedness and sense of community). Finally an example of ideational inconsistency is illustrated by the frames of Type B residents.

Ideational divergence

This section illustrates instances of ideational divergence, where residents with different network types framed the same ideational component differently. Two examples of divergence are provided. The first discusses divergence on Component 1, neighbourhood satisfaction and the second example illustrates divergence on Component 3, informal access to employment opportunities through networks.

Ideational divergence 1

After defining Component 1 as 'general neighbourhood satisfaction', attempts were made to identify interviewees affiliating with this ideational construct. The Anderson-Rubin scores revealed that two different network types, Type A and Type C, had high scores for this component (though there were higher frequencies of Type Cs). Though analysis of narratives showed there was no common ideational frame across network types; interpretations and experiences of 'neighbourhood satisfaction' differed for Type A and Type C residents. This

illustrated ideational divergence between structural-spatial types for neighbourhood satisfaction.

Collectivism, normalisation and defensiveness

Given the localised-cohesive nature of Type A networks, it made sense that some of these residents had high scores for 'general neighbourhood satisfaction'. Type A residents scoring highly on Component 1 legitimised their satisfaction with the local area through comparisons with other neighbourhoods. Most mentioned negative aspects of the local neighbourhood (such as deprivation, unemployment, anti-social behaviour, crime), but this was often described as 'normal' or 'to be expected':

Steve: Everywhere is similar. It's not nice, I know, but it is quite normal now. From what I've seen and heard, it's better here than in a lot of other places nearby, I can tell you that. I know lots of people that would agree with me.

June: Compared to other areas we've not got it too bad. I've heard some horror stories.

Frankie: You have to expect that sort of thing, you know, crime and anti-social behaviour. It's everywhere nowadays.

The term 'normalisation' can be used to describe a social process through which ideas and actions come to be perceived as 'normal' and taken-for-granted in everyday life, perhaps a 'doxic' naturalisation of norms into practice (Bourdieu, 1977). Normalisation also fortifies the construction of idealised norms (May *et al*, 2009). The narratives above reflect the 'normalisation' of space by Type A residents. In defence of their locality, residents often constructed norms of experience and conduct by promoting their own views as representative of collectively agreed beliefs '*a lot of people would agree with me*', '*I'm not the only one that thinks so*', '*others will tell you the same*'. Collective opinions were not only used to evidence statements but were also implicit to their formation. The ability to frame neighbourhood satisfaction this way was very much tied up in Type A residents' localised-dense network structures and confident assertions of local knowledge and local people. Such references to similarly minded

alters were used as evidence to 'back-up' assertive and assured statements of local knowing and normalised experience.

At times, Type A narratives also communicated defensiveness or protectiveness over the locality. On several occasions residents made assumptions about how the interviewer (and other outsiders generally) perceived the area. Statements were quite often blunt and defensive:

Keith: You might think it's bad here but it's the same wherever you go. I know what it's like, people thinking things about us, getting the wrong impression. Just because we are poor, doesn't mean we're all down and out criminals, you know.

Faye: No matter what you think or what you've heard, you've probably got the wrong impression.

Jade: Even though some 'snobs' might not think so, I think this area is nice. There's a lot worse and I know lots of people that would agree with me on that, I'll tell you that for nothing.

Social class may have had some influence upon the framing of this component. Chapter 4 illustrated that most (though not all) Type A residents occupied lower class groups. Savage *et al* (2001) in a study of class identity in Manchester, found that those with low levels of cultural capital were more likely to feel threatened by their own class status and established their `ordinariness', through narratives of defensiveness. In this study, discussion of neighbourhood satisfaction in the context of local deprivation may have resulted in residents positioning themselves and their experiences as part of a collective rather than in personalised class terms. Type A residents who were satisfied with their neighbourhood were also loyal and committed to it on a personal level (Ahlbrant and Cunningham, 1979). The dense, localised structure of Type A networks not only promoted strong norms, which enabled these residents to have steadfast attitudes and the security to confidently air them, it also meant that they had the biggest 'stake' in the image of the locality. Their social identities were inherently bound up within the local space and outsider perceptions of the space, if perceived to be negative, were contested.

Functionality and individualism

In contrast to the personal, normalised and defensive frames of Type A residents, Type C residents attempted to justify their statements using rather objective categories. Though personal experiences informed Type C residents' opinions of whether their locality was a 'good' or 'enjoyable' place to live, this was always backed by functional reasons:

Mary: I've never had any problems whilst living here…no trouble coming to the door, the neighbours are nice, my bins get emptied when they should, I sometimes use the local library, there is a good bus route…..yes, I like living here.

Alex: Well, I like living here as it works for me. The house prices are reasonable and it makes an easy commute with the M60 being nearby. I like it for its proximity to Manchester. The local facilities are ok, and they are improving.

Anna: We bought a house here because it was what we could afford at the time. It's a decent area, quite low crime…it's ok for young, first-time buyers.

Type C residents offered functional justifications as objective criteria for assessing the locality, whilst at the same time, these indications were also enhanced and evidenced by personal stories. The use of functional criteria, such as local facilities, property prices and commuting logistics, to justify general neighbourhood satisfaction may have been used to add credibility to respondent statements by adding elements of neutrality and reflexivity to their perceptions. Where Type A residents cited local norms or attitudes to reinforce claims of 'neighbourhood satisfaction', Type C residents drew on objective criteria coupled with individual experiences. Amin & Thrift (2002) describe how urban space is constructed through 'scripts of experience'. Interestingly, the construction of these ideational frames, from normalised, defensive and collective to functional and individualistic suggests not only a divergence in the way these ideations are explained but also a separation of rationales. It seemed that network structure, and its intersection with class, played a role in framing neighbourhood satisfaction.

Analysis of narratives relating to Component 1 illustrate ideational divergence in the framing of 'general neighbourhood satisfaction' by Type A and Type C residents. Type A residents used emotive discourses of collective normalisation and defensiveness to describe their interpretation and experiences of 'neighbourhood satisfaction', whereas the latter communicated their satisfaction in more functional and individualistic terms.

Ideational divergence 2

The discussion now turns to provide a second example of ideational divergence, this time on Component 3, informal access to jobs. Individuals scoring highly on this component had successfully obtained job information from their social network contacts and transformed this into paid work. The majority of residents with high scores on Component 3 had Type B or Type C networks (counting for 68% and 50% of the total for each type, respectively). There were fewer high scores for Type A residents (16% of type).

Analysis of correlations between the variables in Component 3, 'access to local employment opportunities', revealed that 'hearing' about local jobs did not necessarily lead to 'getting' local jobs. The qualitative data also illustrate inequality in accessing employment opportunities through personal networks. Although most interviewees in the study acknowledged the legitimacy of drawing upon personal network contacts in job searching, not everyone was successful at actually securing work. Those with high scores were better able to access informal employment opportunities by transforming job information generated from social networks (social capital) into work (economic capital). High scores on Component 3, therefore, depended on this transformative capacity.

Habitual job access

People with high scores on Component 3 were able to use their social networks to gain knowledge or information, and then transform this into economic capital in the form of work. The process worked differently for people of contrasting network types.

Type C individuals described the process of accessing employment through network contacts as normative and habitual. Interviewees with these fragmented-dispersed networks often described employment opportunities generated through friends, family and acquaintances. Many jobs were secured with little effort or arose 'accidentally' and close personal contacts had helped provide this social capital:

Fiona: My sister worked at the supermarket before me and got me a job.

Mary: My husband used to run his own company...he is, was, a surveyor, and I was a primary school teacher. Now, we've sort of semi-retired and my husband knows lots of business people, and, so someone he knew was talking about needing office support one day…that's how I ended up in the job. I enjoy it, just typing letters and answering the phone…although it rarely rings.

Andrew: I went to a meeting about sustainability, it was more of a PR, than a product-led thing. Anyway, I got chatting to people and gave out a few business cards. A few weeks later, I got a call about a position…a post I hadn't even heard of, never mind applied for. They asked if I was interested… I was… I thought it was all down to the business card drops but it actually a friend-of-a-friend had recommended me.

In this study sample, residents in professional occupations had Type C networks (though not all Type C residents were professionals). Professionally employed individuals described job-seeking practices of informal networking, introductions through friends and word of mouth recommendations as a norm. As well as close friends, acquaintances were important in generating 'bridging' social capital and employment opportunity (Morgan, 2009). For those individuals with Type C networks who were not employed in professional occupations, the practices of obtaining job information were similar; personal contacts were key. Positions of employment that were secured tended to benefit the individual, often with fluid working conditions or relaxed hierarchy:

Liz: My uncle got me a job in his friend's shop. I used to work there at weekends and sometimes in the week, but always around uni. I could pick up extra hours if needed or drop them if I had extra stuff on, like exams, or wanted to go away for a while.

Cathy: I actually work for a friend-of-a-friend. I like my job…I have flexi-time, which is essential if you have a child. It's nice and relaxed.

The data support previous research on the added benefit of the 'invisible hand' (Lin & Ao, 2008) and 'insider contact' (Fernadez & Weinberg, 1997) for those with higher levels of cultural capital.   The findings also make sense in terms of the correlation between educational level and Component 3 discussed earlier in this Chapter. This supports Granovetter's finding that individuals in higher paid jobs are more likely to receive job information through informal acquaintanceship networks and that this information was often acquired accidentally (Granovetter, 1974: 54-55). For Type C residents, the process of obtaining job information or job opportunities from personal contacts and transforming this into economic capital was habitual, many times happening almost coincidentally with little effort or reflexivity.

Instrumentalism and agency

The largest proportion of individuals aligning with Component 3 had Type B networks. In contrast to the coincidental job access described by Type C residents, these individuals were aware of the instrumental role that their social networks could play and were conscious of how to use their networks to get ahead. Many Type B residents were optimistic about job-searching and felt that they had to be active to succeed. Many had developed action plans or described strategies to secure job opportunities:

Jack: The best way to find work, I'd say, would be in the pub. It's word of mouth. It might not happen immediately but a few weeks or months later you might get contacted from someone just because you were asking about in the pub. Believe it or not, that's how it happens, so that's what I do if I need work.

Janine: If ten people go for the same job…and one of them knows someone that already works at that same company or in the same industry, they are more likely to get the job. When

I worked at McDonald's within two years I was manager because I knew people…I got promoted faster.

Leo: Either you find work through who you know or from being at the right place at the right time. Some people don't realise that but if you're a bit savvy you make a play for it and hope it comes off well. Sometimes it does, sometimes it doesn't but you've got to try it.

Pete: Put it this way, there are a lot of people I know, in this network who have had trouble finding work for one reason or another. Most of these men are not computer literate… or good at spelling…or don't have qualifications. They have loads of work experience but some haven't had a job for over ten years. Most could turn their hand to anything but can't get into work officially for whatever reason. Between them they have the skills and knowledge to build a house, but a lot of them don't get out there and ask for it…they're not all like me.

Sue: I'm always asking [for jobs]…if you don't ask you don't get. So I think, ok, this is what I can do for you, but what can you do for me. You know, I'll scratch your back if you'll scratch mine.

Type B residents held themselves accountable for securing employment and were more likely to think that finding work was attainable (*'there's always something out there')*, many asserting that those that didn't work were *'lazy'*, *'couldn't be bothered'* or hadn't tried. Type B networks featured structural-spatial diversity through having a mix of localised and spatially dispersed contacts. This tie assortment may have influenced the experiences and attitudes of Type B residents and their subsequent framing of this component. Some described how their informal networks also provided other benefits and resources, beyond job access:

Tony: Those same people can also help me get cash in hand work and mates rates for things with things, like, if the bathroom needs doing, or a new drive…it depends what you need. If they can't help, they'll usually know someone who can.....

Jane: If you want to get up the ladder you need a leg-up and I think learning from people is the best way. My friend Carol is clever and she helps me with all sorts…like my CV or sorting tax credits ….

Type B residents were very conscious of the instrumentality of their personal networks and described themselves as rational actors. Agency and awareness was crucial to informal job-seeking strategies. The narratives also communicated a sense of awareness, confidence and pride in personal actions. It was perhaps likely, that in comparison to Type A networks, the spatial and social 'linking' inherent in Type B networks may have provided access to a diversity of network resources and better opportunity for accessing job information.

Passive job-seeking

Unlike the active strategising found in the narratives of Type B residents, individuals scoring highly on Component 3 with Type A networks were passive jobseekers. Despite having secured employment through their social networks, Type A residents described pessimistic experiences and often claimed that there was *'nothing out there'* and that jobs were *'hard to come by'*. Far from being a steady source of employment, the description of jobs found this way tended to be low-paid, temporary with unfair conditions:

Crissy: I've been given jobs a few times by friends...bar work mainly. It's nothing special or stable but I've got paid work just because I knew someone in the pub. The trouble is that it hasn't been secure and doesn't pay well because the hours aren't full time.

Dave: So, yeah, I sometimes do warehouse work because a mate works there already…but the money is rubbish and they keep laying me off, then asking me back…and, I've never had a contract or anything like that.

Pete: He'll call me up if he needs a labourer…no notice though. I just get a call that morning and am expected to be there in half an hour.

Kieran: It depends on the weather….some days, I'll have done two hours then get sent home if the rain's bad and I just get paid for those two hours...Winter is a killer.

For these individuals, the experience of job-seeking through informal social networks was not easy, rather, it was portrayed as an uncomfortable process. Several Type A men (but not women) felt 'embarrassed' or 'ashamed' asking locally for work and likened it to begging:

Dean: You don't ask outright, 'hey mate, give me a job'. You sort of let it be known, you know, on the quiet. You tell a couple of people at a time, 'yeah, I got laid off last week' or 'I could do with some extra hours near Christmas'. So that people know you're free for work, but you don't want to seem too desperate.

Lee: I would never *ask* for work. You don't do that, you'd get laughed at...I'd rather get the dole, it's easier.

This embarrassment surrounding using informal networks for job-seeking occurred in stark contrast to the pride of Type B residents. It was not clear from the data whether this was due to habitus or because of the nature of the work sought. It also was not possible to fully explore the gender differences between Type A interpretations and experiences; though women certainly did not communicate this embarrassment. Many women with Type A networks were unemployed but not actively seeking work. Though these women occasionally took up positions of employment these tended to be casual and often as a side-line to their secondary role of home-maker. Consequently, there may have been both class and gender dynamics to this process (Bott, 1957) which distinguished the activities of Type A men from Type B and C individuals and also from Type A women.

Rather than online or telephone contact, spatial 'foci' were crucial for Type A job-seekers. This made practices dependent more on 'bonding' social capital, than the 'bridging' and 'linking' social capital underpinning Type C and B job-seeking. Type A women described sharing information amongst friends in informal settings, such as the school gates and parties. For men, the pub was often described as a preferred location for informal or speculative job searching. Some Type A individuals felt more comfortable in making speculative job enquiries in the pub as the consumption of alcohol loosened inhibitions:

Mick: If you know a few grafters from the pub, they can put you in touch with the gaffer. I know there's no real shame in asking [for a job] but if you do it over a pint it's a bit more, well, you're on the same level as the other person at that time. If you've both had a few [drinks] you can make a bit of a laugh out of it when you get turned down.

For some Type A males, enquiring about employment opportunities in pubs was perhaps easier because these informal spatial settings were neutral territories, where the social hierarchy between employer and employee became flattened.

This second example of ideational divergence has illustrated how Component 3 was framed differently by each structural-spatial type. Type A and Type C residents discussed access to jobs and job information in normative habitual ways, though their motivations and experiences deviated. Though it was an acceptable practice, Type A residents expressed embarrassment when describing job-seeking through their networks. Conversely, Type C residents had received job information or offers of work accidentally or without conscious or active effort. These individuals had scored highly on Component 3 and had been able to transform social capital into economic capital but experiences of this process differed by network type. Type B residents recognised the instrumentalism of informal networks for job related resources. Their activities were more likely to be strategically planned and they positioned themselves as conscious, rational and aspirational agents in the process.

Ideational homophily

This next section explores instances of ideational homophily, where similar ideational frames of urban cohesion are found amongst residents with the same network structure. The framing of two components, Component 2 (local embeddedness) and Component 4 (sense of community) by Type A residents is discussed.

Residential stability

The cohesive-localised networks of Type A residents were associated with a temporal, social and spatial fixity of social networks and practices. Community and local embeddedness were framed in terms of residential stability in the narratives of Type A residents. Residential

stability was perceived as good for urban cohesion, a vehicle for local security and safety. Residents were particularly dismissive of the notion of moving house or neighbourhood regardless of differences across age and gender. Even residents that had discussed negative aspects of their local area in previous parts of the interview claimed that a considerable change in financial circumstances would not prompt a move out of the area:

Interviewer: You've said the neighbourhood is, overall, not a good place to live and you describe it as 'rough'. Would you have any inclination to move to a different area?

Sharon: If I was ever to move, I'd move abroad, you know, if I came into lots of money. But to be honest I can't ever see myself moving. I did have a boyfriend from London and he wanted us to move there but it's like moving to the other side of the world…I like where I live and I like my little house because it's mine, full of my things, how I like it. I like my street and my friends here. I don't think I'd even sell my house if I moved abroad. What am I saying? I'll never move from here despite all the things I say.

For respondents scoring high on these components, the possibility of a future house move prompted discussion of social networks in their current residential area. Some residents balanced their general neighbourhood dissatisfaction against the need for residential stability:[63]

Interviewer: If you don't like this area, do you think you might move at any point in the future?

Rob: I don't want to move from here….If I won the lottery I'd probably buy a house here and one somewhere nicer. I wouldn't move away completely.

Interviewer: Why not?

Rob: Well…deep down, if I compare it to living somewhere else, I probably do like some things about living here.

Interviewer: Like what?

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[63] More Type A residents had high scores for Components 2 and 4, than component 1. Some residents who were locally embedded and felt a sense of community were not actually satisfied with their neighbourhood.

Rob: Like all the people I know. I know what's going on here and fit in.

The identities of Type A residents were tied up in the local space and local knowledge offered personal security because the individual could act as part of a collective. It was a norm not to move, those who did leave the locality were perceived as behaving unusually:

Clare: I don't want to move from here. My sister moves all the time, she's like a nomad, she's very strange, very strange. She moves to places without knowing anyone, how strange is that?

In circumstances where moving was absolutely necessary, having personal network contacts in neighbourhoods beyond ego's immediate locality softened the blow of potential urban 'anomie' and informed the choice of migration destination:

Interviewer: Would you move to a nearby area that is quite similar to this one…like Blackley, maybe?

Sabrina: I wouldn't choose to, no, no. Why would I? There would have to be a big reason. Nobody just moves for no reason, do they? But if I had to, I'd be fine moving there…but only because I have family already living there. My mum was from Blackley so I'd be ok. Otherwise, no.

Migratory 'choices' were not freely made, nor were they influenced by propinquity. Rather than move to a neighbouring area, Type A residents relied on the geographic span of their social networks to select other neighbourhoods where they might fit in and settle. In this sense, the narratives on local embeddedness and community embodied social and geographic closeness within the locality, but social closeness became most important beyond ego's immediate locality.

Legitimacy and longevity

Routine practices, which reinforced local embeddedness over time, provided Type A residents with a local history. These residents were able to tell personal stories of their own local life experiences as well as those of their parents and grandparents. Local histories provided

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residential legitimacy for Type A residents, allowing them to feel settled, identify with the area and other residents. These narratives of residential legitimacy and longevity framed experiences and interpretations of embeddedness and community and were juxtaposed with defensive narratives against new, non-established local residents:

Lynne: I was born and bred here. It's people like me that should be here.

Dawn: Our parents were born here, we were born here, we've had our children here. We should have first rights.

In and out migration from neighbourhoods was often perceived as a cause of social problems:

Alan: Areas are better when people, families, live there for a few years, instead of people coming and going. We need to know each other.

Yvonne: Some people move into this area and they just don't fit it. They can be white, black, Chinese, Asian, but if they aren't locals then they haven't been here long enough and they're just not like us.

Many described long-term local integration and cultural similarity as prerequisite for social cohesion and trust. Calls for non-established residents to assimilate or 'integrate' culturally were very strong amongst residents with Type A networks. Though similar statements were found in the narratives of some Type B residents, these were not comparable in frequency or severity. Steadfast discourses of cultural difference in dense network structures permitted produced 'doxa' (Bourdieu, 1977) and permitted strong norms to flouish (Simmel, 1902, Heider, 1958; Cartwright & Zander, 1960, Granovetter, 2005). Local embeddedness, experienced through residential stability and longevity framed how community membership and local practice was interpreted. These understandings involved the creation of a cultural antithesis (defining non-local practices of the non-embedded) which created, legitimated and reproduced cultural boundaries within the locality.

Social distance between ethnic groups was raised during discussions of community and embeddedness. Though this study did not aim to capture non-interaction between ethnic groups (for example, based on individual attributes similar to Borgadus' 'willingness to interact' scales), network fragmentation was observed through exceptionally strong ethnic homogeneity (the networks of these white residents were very white, see ethnic clustering in Figure 6). Immigrants were often the scapegoats for the unfair distribution of local resources (mainly jobs, social housing and benefits). Type A residents frequently described themselves as being 'at the bottom of the pile', 'left out', 'forgotten' and 'ignored'. Social fragmentation was attributed to an unwillingness of immigrants within the locality to integrate and this process upset residential stability:

James:	I don't think there is a problem with immigration into the area. The problem is when immigrants don't want to integrate and socialise with the locals. They expect us to share their customs and it affects people locally. I don't know personally of any really bad things that have happened. It's just little things like immigrants living on the same street don't let on to us…and then some are only here for a short time, so they don't settle and get involved in the area. That kind of stuff makes local areas go downhill.

Type A discourses were sometimes, but not always, representative of white racisms. Racist remarks (including assertions of white superiority or racial slurs), as opposed to general comments on the resistance to immigration, were found in around half of Type A interview narratives:

Mark:	I don't think neighbourhood mixing works because they don't want to integrate with us. They call it 'multiculturalism' don't they? You can't really say that it doesn't work though because you're going to offend someone. There are lots of Jews in Prestwich and darkies in Cheetham Hill, so it does happen that we get divided…But I don't want to live in all that squalor and prefer being amongst my own. But then, if I say, yes, it's better like that, areas being separated, then that makes me sound a bit BNP-ish.

Scapegoating of outsiders has been described as a strategy to reinforce the boundaries of local membership (Park & Burgess, 1921; Park, 1924; Erikson, 1966; Elias & Scotson, 1965). Though it is interesting how expressions of 'outsider' resistance were based on cultural differences

existing within the locality, rather than memberships defined by spatial borders. The spatial level at which non-interaction (or social distance) is found, is important. Within the locality, social distance was conceptualised as a racial or ethnic issue and a cause conflict. However, Chapter 3 illustrated that between neighbourhood spaces, culturally based social distance was subtle, intra-racial and non-antagonistic. Non-interaction based on cultural difference within ego's locality was obvious and contentious, but habitually practiced and unconsciously reproduced beyond the immediate locality. Space was both territorial and relational (Gusfield, 1975). The data reveal social distance and non-interaction between residents based on perceptions of cultural difference, but this 'distance' played out in various ways depending on the spatial context; whether it was based networks of relations within or between neighbourhoods.

Community, security and freedom

Resident narratives provided examples of ideational homophily through the use of similar frames to construct experiences and interpretations of 'community' as offering freedom and security. Although there were no explicit boundaries of community or talk of community related to formal memberships or practices, the term was used in reference to informal social practice and as a descriptive characteristic of the locality. Discourses linking community, security and freedom by Type A residents were consistent with ideas of residential stability, local legitimacy and longevity. Local 'knowing' and was crucial to 'fitting in' and 'settling'.

Community was certainly prominent in the narratives of Type A residents. It was salient in these contemporary urban networks; tied to and embodied in local space, not 'lost' or 'liberated' from spatial contexts (Wellman & Leighton, 1979). For Type A residents, neighbourhood familiarity and local social networks provided a common security:

Janine: When we moved away from here, the avenue, we missed it. It wasn't the same. Here, everyone was watching each other's kids…you know, it's just looking out for each other. If you have a community with each other you feel safer, you're free.

Jo: ...because we've all grown up here together, we know how things work. We look out
                       for each other...so it's safer that way. You're free to do what you want then without
                       having to look over your back all the time.

Here we find the security of the group, or community, described as offering freedom for the individual. This was particularly interesting given the traditional associations between community and individual constraint (Tonnies, 1887/1957; Durkheim, 1893/1933; Keller, 1958). This significance of community, tied with freedom and security was again linked to network structure. The density and localisation of Type A networks, knowing lots of local people, their high embeddedness and local history were conducive to feeling a sense of community. The presence of overlapping ties between residents in tight spatial contexts encourages trust and collective efficacy (Riger & Lavrakas, 1981; Coleman, 1988; Moody & White, 2003).

The reproduction of collective localised practices was striking. On many occasions residents described how routine social practices were mostly confined to the immediate locality:

Sharon: If I said to my friends, let's go for a night out in Manchester'. They'd all go, 'what?! Are
                       you mad?' All of them would think like that. It would freak them out. They make
                       excuses not to go. It would be a night out in Middleton or not going out at all.

Not only were practices localised, but the attitudes on which these practices were based were formed and sustained locally.   For Type A residents, the locality acted as a 'foci' (Feld, 1981) which encouraged and reproduced network density whilst reducing the likelihood for network diversity. Local space was not only a spatial focus but provided ideational concentration.   The spatial and structural cohesiveness of Type A networks was conducive to ideational homophily and resistant to the filtering in of new ideas and practices.

Ideational homophily was evident in the frames of Type A residents on Components 2 and 4. Consensus of experiences and interpretations was found through the use of similar discourses to frame narratives on residential stability, local legitimacy, community and freedom.

Table 22: Pearson correlation coefficients for variables in PCA (1-tailed significance)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Went to a local school																
2. Worked locally	-.002															
3. Go to a local pub	.137*	.101														
4. Member of a local club or team	-.117	.133*	.116													
5. Hear about jobs through network contacts	.135*	.316**	.189**	.000												
6. Got a job through network contact	.116	.457**	.211**	.005	.555**											
7. Know and like neighbours	.123	.137*	.066	.077	.209**	.180**										
8. Know lots of local people	.386**	.142	.275**	.122	.259**	.277**	.209**									
9. Area has quite a low crime rate	-.050	.014	.011	.125	-.065	.-043	.012	-.103								
10. Mostly feel safe in this area	.133*	-.047	.107	.040	-.074	-.045	.074	.187*	.279**							
11. Shop locally	-.038	.130	.231**	.166*	.115	-.029	.166*	.073	.124	.096						
12. Can trust most residents	.039	.128*	.100	.101	.099	.078	.202**	.180*	.205**	.386	.229**					
13. This is a good area	-.104	.107	.102	.105	.067	-.009	.182**	.104	.354**	.388**	.242**	.446**				
14. Most residents share same values as me	.048	.206**	.241**	.037	.170	.144*	.329**	.137*	.125*	.256**	.166*	.393**	.398**			
15. Feel belong to area	.119	.177**	.291**	.095	.151*	.032	.206**	.308**	.177**	.309**	.363**	.412**	.422**	.476**		
16. Enjoy living in area	.065	.212**	.233**	.216**	.166*	.026	.201**	.121	.284**	.368**	.267**	.505**	.465**	.321**	.507**	
17. Lived in area for most of life	.570**	.118	.225**	.045	.148*	.208**	.203**	.412**	-.080	.154*	.161*	.117	.024	.101	.226**	.086

Significance: ** Correlation is significant at the 0.01 level. * Correlation significant at the 0.05 level.

Ideational inconsistency: liminality, adaption and switching

The final type of framing to be discussed is ideational inconsistency; where experiences of conflict or discrepancy were observed within the framing of a component. Ideational inconsistency was observed for residents with Type B networks and this final section of the chapter will provide some examples of this framing type.

As illustrated in Chapter 4, Type B residents had the most diverse networks because their ties were both localised and spatially dispersed, often spanned across class groups, perhaps providing 'linking capital' (Woolcock, 2001). It was suggested that this tie assortment might provide access to a diversity of contacts, and thus multiple experiences and interpretations resulting in liminal positions and framing inconsistencies.

Liminality and adaptation

On Components 2 and 4, though some Type B residents felt a sense of community they were less locally embedded than Type A residents. This was likely to be because Type B residents had both localised and spatially dispersed ties. As a consequence, these individuals sometimes found themselves in brokerage positions between embedded and non-embedded groups. Turner's (1967) concept of 'liminality' is helpful in conceptualising the position of Type B residents as neither Type A or Type C, but something in-between. The 'liminal persona' holds positions of structural invisibility, 'they are at once no longer classified and not yet classified' they are 'betwixt and between' (1967: 96). A range of spatially located contacts is likely to result in a diversity of accessible social spheres, which may provide multiple referents for attitude and identity construction. These different network contexts may be a combination of simultaneous forms; overlapping and distinct, dense and sparse, cohesive and fragmented. This particular assortment of ties and spatial structure was more likely to produce a variety of settings encompassing discrepancies of experiences and practices, perhaps encountering a diversity of ideational frames.

In contrast to the constraining habitus of Type A residents, Type B individuals had to negotiate the 'presentation of self' (Goffman, 1974) between these various network contexts in a way that maximised benefit and eshewed conflict. Their behaviour mediated a position which both carved out individualistic opportunity, whilst featuring adaptation and attempts to fit in. By

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very nature of their networks spanning space and class contexts, the narratives of Type B residents often featured talk of identity conflict or incongruence:

Vicky: My friends round here sometimes call me 'posh'. Just because I speak slightly differently than when we were at school…but accents change don't they? Especially, well, with me, I moved around a bit after uni….they call me posh for that as well. Sometimes, they have a laugh at some of the clothes or accessories I wear. I just say they're scallies. It's all done jokingly though. It's funny because when I'm with uni mates, I'm the common one…the Northerner from a council estate.

This ambivalence meant that Type B individuals had to adapt and negotiate their social identity somewhat in order to fit in. Mead (1925:275) argues that the control an individual has in a given social situation depends on the extent to which they are able to 'assume the attitudes of others who are involved with them in common endeavours'. Though residents with other network structures may have also adapted their attitudes and practices to fit specific situations, such techniques were only openly discussed in the narratives of Type B residents. In some cases, this involved playing down elements of personality or accent or consciously rejecting parts of their habitus:

Jackie: When I'm down the local pub, I just…well, sort of…you know…be casual, can relax and have loads to drink, don't care what I say and who I say it to. Whereas, if we go for drinks after work, I'll be in my suit and in a nice city bar and wouldn't dream of getting drunk or swearing or anything like that….I'll act professional, classy…yeah, that's it.

Seb: I'm a chameleon, that's me. I can get on with anyone.

On the other hand, role conflict was experienced by some individuals as they tried to mediate across social and spatial network boundaries and adapt their identities to suit embedded and non-embedded situations (Simmel, 1901/1955). Joseph described how his social embeddedness and long-term friendship with school mates coupled with developing 'new friends' led to some teasing, but also earned him opportunity to gain status:

Joseph: I've got my local mates and I've got my 'other' mates….that's what they call them…. 'other mates', you know, from college. It's good because I don't get bored doing the

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same thing all the time with the same group of people. I get out and about and go to different gigs and bars…and I've met girls that way. The local lads don't mind it if I get a new girlfriend and she comes to visit with her mates, they don't mind that at all…

Unlike Type A residents whose ideational frames operated within tighter normative boundaries, Type B residents had less constraint upon their agency. Spatially transcending ties were sources of both contention and opportunity.

Switching

The narratives revealed instances of Type B residents 'switching' between ideational frames. Whereas Type A and Type C residents had a continuity of experiences and interpretations, Type B individuals often switched between ideational frames of urban cohesion. Mische & White (1998) discuss how individuals 'switch conversations' between multiple ties and multiple social settings. Attitudes and morals were adapted to fit particular settings:

Lou: I've just done a training course at work on equality and diversity and I do agree with it in principle. I think the approach is good. But then out of the workplace, in everyday life, I don't take those values on board. I feel silly saying that. Am I contradicting myself?

Keith: Although I haven't done it myself, I understand why some people might vote BNP. I used to think they were a racist party, but then people I know have put me straight. I don't know if 'd vote for them though, if I did, I definitely wouldn't tell my daughter.

Though most individuals that 'switched' were comfortable doing so, some actor's frames were at odds with some of their personal network contacts:

Andy: …but…I don't fit in properly here, in this part of the network [points to sociogram] ….you know…personality-wise. I definitely think that their identities and interests are different from mine. Without wishing to sound arrogant, I feel that I am different in my outlook and values. I am a committed environmentalist, I read the Guardian, and politically, I am quite liberal. I could be wrong but I feel that makes me different from others on here…I have to behave slightly differently around these people, which I'm not always comfortable with.

Friedkin (1998: 4) describes this 'concatenation of reflections', when interpersonal influence occurs across a personal network so that actors attitudes and opinions may reflect those of others at entirely separate positions in the social structure and can be at odds with contacts nearby.

In the examples above, 'switching' is 'contingent on cross-cutting network relations' (Mische, 2000). Individuals adopt, adapt or reject cultural schemas from their multiple social circles to suit specific environments and present the appropriate frame. In essence, there is an element of reflexivity and preparation involved in this process. As in the discussion of Component 3, the narratives of Type B individuals communicated a sense of consciousness, rationality and strategic awareness:

John: I know many people would argue for more social and community clubs but I think they are on their way out nowadays. I'd like to say fund the community centre, but people just don't use it and mix. Children's activities are good in bringing people together but the parents need to be made aware that those clubs are there for the adults to mix too. Most people don't seem to about mixing and understand why these things go on.

Kilduff (2003) describes 'self-monitors' as having psychological characteristics allowing some individuals better awareness of their network behaviour, capacity to act instrumentality. These are individuals who irrespective of their centrality, 'will be better able to take advantage of the opportunities represented' (Kilduff, 2003: 82). However, in this thesis, such discourses were only observed for Type B residents. Considering the structural-spatial types, though Type A residents were less likely to be self-monitors, it is perhaps possible that Type C residents were also 'self-monitors'. Yet because Type C individuals did not frame their experiences and interpretations of the ideational constructs in this way, liminality, adaptation and switching was not highlighted in their narratives. Mische (2000) highlights McLean's (1998: 53-55) clarification of Goffman's recursive dynamic as having network effects, a 'variety of frames are deployable' and actors negotiate and choose frames in an attempt 'to occupy vacancies or capitalize on the 'structural hole'-like opportunities in the social structures to which they are connected'. It is precisely this linking, liminal positioning of Type B actors that distinguished their frames from Type A and B. Type B residents accessed a diversity of network contacts, whereas Types A and C mostly named individuals who were of a similar class to themselves.

Ideational inconsistency was associated with Type B narratives. Type B networks crossed spatial and class contexts, resulting in liminal positions for these actors, which made attitude and identity adaptations necessary. It was argued that the spatial and structural diversity within Type B networks led to a multiplicity of experiences, which facilitated adaptations of frames across different contexts.

In summary, ideational frames reflect interpretation and experiences developed in the context of personal network structures. Residents did not interpret and experience the ideational constructs of urban cohesion completely independently, instead there were common ideational frames related to personal network structure.

Summary

This chapter has attempted to illustrate the nexus between spatial, structural and ideational cohesion. The first section introduced four ideational constructs of cohesion resulting from the PCA. Correlations between these ideational constructs and ego attributes were discussed using Anderson-Rubin scores at component level. Section two visualised the ideational constructs and structural-spatial types in a two-mode network. The aim was to explore the relative positioning of network structures against attitudes and practices relating to urban cohesion. Anderson-Rubin scores of individual interviewees were categorised by structural-spatial type using a 'high-loadings' procedure to produce an affiliations matrix. The resultant two-mode network graph revealed the structure of urban cohesion, to include spatial, structural and ideational dimensions.

The next section qualitatively explored the structure of the two-mode network, by illustrating how ideational constructs are framed in the context of structural-spatial network forms. A theoretical model of framing typifications was presented. Three of the four theoretical frames were observed in the resident narratives and these were explored in turn. Firstly, ideational divergence illustrated instances of residents with independent network types framing the same component differently. Two examples were provided. Analysis of narratives relating to Component 1 illustrated discrepancies in the framing of 'general neighbourhood satisfaction' and related variables by Type A and Type C residents; the former used emotive discourses of

normalisation and defensiveness, whereas the latter described their satisfaction in more objective, functional terms.

A second example of ideational divergence discussed how Component 3 had been framed differently in each network type. Type B residents were conscious of network instrumentality and described instances of where they had acted as agents in seeking opportunity. When discussing networks and jobs, the narratives of Type A and Type C residents both used discourses on normative and habitual practice, but framed their justifications and experiences differently. For Type A residents, obtaining jobs through networks was desired, though the practice of using 'bonding' ties for job-seeking laden with embarrassment. On the other hand, Type C residents who had obtained jobs and job information through network contacts had done so without conscious or active effort. In distinction to Type A and Type B individuals, Type C residents drew on 'bridging' social capital when transforming or accessing information from network contacts to create economic capital. The role of weak acquaintanceship ties in this process was related to the accidental and routine manner in which these opportunities arose. Interestingly, in contrast to the Type B framing of access to jobs and job information as distinctively special, in the networks of Type C residents was a habitual, social reproduced practice. Tie assortment and 'linking' social capital in Type B networks provided access to a diversity of contacts, and thus a diversity of resources and preferentially placed these residents at optimal positions to access job information. The analysis showed how the ability to access information and transform this into job opportunity was based on the type of social capital used. Plus, given that each network type drew on different types of social capital, experiences and interpretations of the component varied and, this yielded a variety of ideational frames.

The second framing typfication to be discussed was ideational homophily, where individuals with the same network structure framed the same component similarly. Ideational homophily was found in the narratives of Type A residents for Components 2 and 4 (embeddedness and sense of community). Interview narratives revealed that individuals with Type A networks perceived residential stability as crucial for local cohesion. These residents defended their positions of local legitimacy in the context of their long-term, established, intergenerational networks. Scapegoating of non-established residents was commonplace, particularly in terms of cultural and ethnic difference. The framing of community encompassed freedom and

security. For those with Type A networks, the locality was not only a spatial focus for dense networks, but also acted to concentrate ideational frames. The spatial and structural cohesiveness of Type A networks was conducive to ideational homophily and impervious to 'outsider' ideas and experiences.

The third and final framing typification discussed was the ideational inconsistency associated with Type B narratives. Type B networks were both localised and spatially dispersed and it was argued that this put these residents in liminal positions, which were mediated through the adaption and switching of frames to suit context. The spatial and structural assortment of ties in Type B networks led to strategies of adaptation and negotiation of identity. The interview narratives revealed Type B actors as rational self-monitors who, by nature of their network type, were aware of network instrumentality, opportunity and conflict.

This final empirical chapter has brought together the three dimensions of urban cohesion, relevant to this thesis. In analysing the intersection between spatial, structural and ideational cohesion, the chapter has not attempted to indicate causality or generalisable dynamics. Rather it has explored ideational frames in the context of network structure and highlighted how certain structural-spatial conditions are conducive to particular attitudes and practices relating to urban cohesion. The chapter has argued that individuals did not interpret and experience ideational constructs entirely independently, rather there were common ideational frames. What is more, these ideational frames were constructed in the context of personal network structure. The analysis reveals a link between ideational frames and structural-spatial types.

The next chapter provides a brief discussion of the empirical findings of this thesis, by extracting some key theoretical issues arising and relating these to the broader literature.

CHAPTER 6: Consequences of urban cohesion for residents and neighbourhoods

Chapter overview

This chapter brings together the analysis of the empirical chapters to explore the consequences of forms of cohesion between urban residents. Previous chapters explored the interplay between spatial, structural and ideational forms of cohesion, culminating in an analysis of the 'framing' of attitudes and practices in the context of network structure. The aim of this chapter is to engage with and reflect upon the theoretical implications of the empirical analysis, with particular emphasis on how this might contribute to theory on spatial social capital and individual social action (addressing research question 5). These issues are discussed in relation to broader literature.

The first section of the chapter draws out the general theoretical issues arising from the empirical data in reference to the thesis research questions. Section two argues that differences in urban cohesion between localities are not reducible to neighbourhood or area effects, instead urban cohesion is conceptualised as occurring both within and between localities. Section three presents a spatial paradigm for social capital based on highlighting the variant functions of bonding, bridging and linking ties. Here it is argued that the pattern of resident networks across urban space has implications for the distribution of social capital. The next section discusses the implications of flows, thresholds and balances of these capitals for residents and neighbourhoods. The fifth section explores how residents contribute to urban cohesion by playing 'roles' in their locality underpinned by network and ideational structures. The final section discusses the relevance of these roles for theories of community and society.

6.1 Key theoretical issues arising from the data

This section highlights the key theoretical issues arising from the empirical chapters in reference to the study research questions.

The over-arching research question of this thesis addresses how the interplay between forms of resident cohesion influences urban life in deprived localities. Questions 1-3 address the overlap, or interplay, between the three forms of cohesion. Question 4 follows by asking if

resident cohesion displays patterns and structure and whether differences can be found within a relatively socio-economically similar sample of residents from deprived urban localities. Lastly, research question 5 investigates the consequences of the interplay between forms of cohesion for social capital and social action. A quick re-cap of findings and issues raised by research questions 1 to 4 will be provided next, whilst the remainder of this chapter will focus on research question 5.

The thesis found that spatial, structural and ideational forms of cohesion were interrelated. Social and geographic space worked together to focus resident cohesion (Feld, 1981), though these factors were most constraining upon the networks of residents in homogeneous localities. The result being a propensity for dense localised relations in these homogeneous deprived localities. On the other hand, residents of socially mixed localities were less constrained by the neighbourhood and able to forge external ties beyond the locality.

A pattern to urban cohesion was found through the relationship between structural and spatial cohesion. Across the sample of 409 urban personal networks there was a negative correlation between the density of personal network structure and the dispersion (or spread) of alters in geographic space. Although structural and spatial cohesion scores varied between individual networks there was a pattern to the distribution of network forms and cases could be organised into a typology.

Patterns were also found in the way that attitudes and practices to urban cohesion were framed in the context of personal network structure. Mixed-method analysis of qualitative interview and social network data revealed dense, localised, stable networks to be accompanied by habitual practices, norms and attitude homophily. This type of personal network (Type A) was most prevalent in the most homogeneous deprived localities. Networks with spatial dispersion, Type B and Type C, were found most often in socially mixed or gentrified localities. Although the interplay between spatial, structural and ideational forms of cohesion is complex, cohesion between residents also creates pattern and order in social and urban landscapes.

Despite the patterns arising it was intriguing to find differences between residents and localities in this socially similar deprived urban sample. These variances could perhaps be linked to

distribution of capitals and habitus (Bourdieu, 1986; Lin, 1999). Varied configurations of networks structure and ideations produced structural differences between those whose social networks spanned multiple social and spatial contexts and those with localised, dense networks fixed in social and geographic space. Since individuals had different abilities, inclinations and predispositions for urban cohesion the distribution of resident ties and ideations in social and geographic space was important for theorising the nature of opportunity and constraint upon social action (Lin, 1999; Burt, 2001).

In summary, previous chapters have highlighted that the patterned interplay between spatial, structural and ideational forms of cohesion has consequences for urban life. Structural variances exist between individuals and neighbourhoods and this creates differential outcomes for urban cohesion.

6.2 Differences between localities…area effects or network context?

The empirical data unveil differences in patterns of resident cohesion between localities. More precisely, there seem to be differences of cohesion between the most deprived homogeneous localities and the lesser deprived and socially mixed localities.

The overall structure of resident ties across the city told a story about the relative positions of LSOAs and the distribution of neighbourhood social capital. It is interesting that the Core-Periphery analysis in Chapter 3 revealed the most and least deprived LSOAs to be 'peripheral' actors in the city-wide network of localities (Figure 8), whereas the remaining LSOAs formed a cohesive 'core'. Visually, the most homogeneous deprived and the least deprived gentrified LSOAs were at the edge of the North Manchester neighbourhood network.

In line with a spatial theory of social capital, one might be inclined to explore these differences as area or neighbourhood effects. We must then ask, to what extent are patterns of resident cohesion determined by the immediate neighbourhood itself? Rather than focusing on area or neighbourhood effects, we can understand urban cohesion as existing within wider social and spatial networks of relations. We must look beyond the neighbourhood. This relational, spatial, multi-level theorisation also reflects Blokland, Blokland-Potters & Mitzman's (2003: 57) claim that two positions are important for neighbourhood social capital, 'the neighbourhood's

role in defining the relations, and the status of neighbour relations within the network'. With this paradigm we can try to make substantive sense of the core-periphery analysis beyond neighbourhood effects.

Prestwich was the least deprived and most gentrified LSOA but peripheral to the city network. Prestwich residents were found to have the most spatially distributed personal networks with alters spread across a range of neighbourhoods (see Chapter 3). An analysis of the link between locality and typological structure showed that Prestwich had the most Type C, dispersed-fragmented networks (see Chapter 4). Prestwich residents had a wide spatial distribution of ties, sharing networks with a range of localities across Greater Manchester. In this sense, Prestwich networks were described as spatially bridging. It made sense that Prestwich residents were not embedded within the 'core' of North Manchester LSOAs because the ego-network of this locality was not central or localised to North Manchester; rather it was embedded in wider patterns of spatial relations beyond the scope of this study.

The Core-Periphery analysis also showed that the three most deprived and compositionally homogeneous LSOAs, Collyhurst, Harpurhey and Middleton were peripheral in the North Manchester network of Figure 8. Again, substantively, this was logical because these LSOAs had high proportions of internal ties, or residential homophily, with high frequencies of Type A (localised-cohesive) networks. This tendency toward introvertism may have curtailed the capacity of residents within these LSOAs to forge external ties to other neighbourhoods. This was supported by observations of low proportions of ties to neighbouring areas and some defensiveness in resident narratives. It seemed that residents of these most homogeneous deprived localities may also have been somewhat socially isolated or socially distanced from residents of the 'core' North Manchester localities.

The locality itself did not determine its own position in the city-wide network. Rather, the network position of a locality depended on its structure of ties relative to the networks of all other localities. Urban cohesion must be conceptualised beyond the neighbourhood. Differences exist between residents and localities but these disparities must be interpreted as relative to the wider context in which these relations are embedded.

In the most homogeneous deprived LSOAs, the residential neighbourhood was certainly a strong influence upon resident cohesion and limited opportunities for the development of external ties beyond the immediate locality. Atkinson & Kintrea (2001) question area effects, is it better to be poor in an affluent neighbourhood or poor in a deprived area? Their research surveys the comparative situations of residents living in homogeneously deprived or gentrified localities, concluding that overall, in Britain, it is worse to be poor in a poor area than one which is socially mixed but this is not entirely reducible to neighbourhood effects:

> the context in which the neighbourhood sits is also a very important influence on neighbourhood outcomes. Therefore, the conclusions tend to support a middle-range position within the area effects debate– that is, that both structure and agency are important in influencing neighbourhood problems (Atkinson & Kintrea, 2001: 2295).

It is difficult to disentangle area effects (Atkinson & Kintrea, 2001; Baum, Arthurson *et al*, 2010) because top-down or bottom-up causality is often not an adequate explanation of the complexities of urban society. Granovetter makes this point when warning about the interdependencies between structure and agency:

> groups with similar average preferences may generate very different results; hence it is hazardous to infer individual dispositions from aggregate outcomes or to assume that behaviour was directed by ultimately agreed-upon norms…one needs a model of how these individual preferences interact and aggregate (Granovetter, 1978: 1420-21).

Individual behaviours could not be determined by aggregate effects of neighbourhood or class nor was social action reducible to neighbourhood or class effects. Since interdependencies between the activities of individual agents and macro-level patterns cannot not be understood merely as aggregates of micro-level activity, they are instead reflective of social structure (Coleman, 1994). This may be a reason why the link between local deprivation, class, homogeneity and forms of cohesion was inconclusive in this study; the relationship between these factors is not clear-cut or causal, it is contextual. Though individuals with dense, localised networks were more likely to reside in the most homogeneous deprived neighbourhoods and have particular ideational outcomes, these links were qualitative observations, not social facts. We are reminded of the cautious caveat contained in the *Indices of Deprivation* guidance, which stipulates that, 'not all deprived people live in deprived areas and not everyone living in a deprived area is deprived' (ID2007: 3). The LSOAs were objectively defined as socio-economically similar yet much diversity existed within. Though the thesis has found some links between locality, class and typology, these observations were not conclusive.

In sum, factors beyond the neighbourhood are important in understanding forms of urban cohesion. In this case, there was a link between the homogeneity or social mix of a locality and its proportion of internal/external ties, but it is unclear to what extent one variable affects another, or even the direction of this relationship. Though these factors are clearly interlinked, they have been interpreted as network contexts not causes (Faust & Skvoretz, 2002; Entwisle *et al*, 2007). These contexts influence spatial, structural and ideational forms of cohesion but do not reliably determine outcomes at a neighbourhood level. Indeed, to understand urban cohesion it was necessary to look for structures beyond the neighbourhood itself.

Steering away from neighbourhood effects and towards a view of urban cohesion as contextualised and occurring within and between localities, the next section develops an argument for a relational spatial paradigm for urban cohesion.

6.3 Toward a relational spatial paradigm for urban cohesion: bonding, bridging and linking social capital

The distribution of social networks in geographic space has implications for residents and neighbourhoods, yet the role of physical space is not central to social capital theory (Massey, 2005) or studies of urban cohesion. Paradigms conceptualising urban cohesion as spatially bound are flawed because ties between residents occur both within and between neighbourhoods. Social interaction is physically embodied (Crossley, 1996, 2006) and personal networks transcend localities (Wellman and Leighton, 1979: 363).

It is clear that, although important, area affects alone are not responsible for patterns of urban cohesion. Social capital must be interpreted in a much wider context because social networks and ideational structures are spread across urban space. Urban cohesion is as much about interactions beyond the locality as it is about the structure of networks within the neighbourhood. A relational spatial paradigm for urban cohesion is used here to highlight the importance of the distribution of network ties in urban space for social capital. By analysing personal networks beyond neighbourhoods and across the city we can better understand the different ways in which neighbourhoods and residents contribute to urban cohesion. The next section highlights the implications of bonding, bridging and linking ties for urban cohesion.

In this thesis, urban cohesion was affected by the extent to which resident networks were organised to favour internal ties (residential homophily within the locality) over external ties (to other localities). Three types of ties were described as important for urban cohesion; 'bonding', 'bridging' and 'linking', each with a different function. Residential homophily *within* localities may provide an indication of internal cohesion or 'bonding' capital as opposed to networks between neighbourhoods that fulfil the function of 'bridging' or 'linking' capital. This section will discuss the implications of these different types of spatially organised resident ties for neighbourhood social capital.

Bonding social capital was identified through observations of residential homophily. Residential homophily occurred in instances where ego named an alter from the same neighbourhood thus creating inter-locality loop ties in a network graph. Proportions of bonding ties varied between LSOAs. The highest levels of residential homophily were found in the homogeneous deprived LSOAs and this was linked to sustained intergenerational practices of localised network building. In social capital literature, opportunity and benefit are associated with network diversity (Granovetter, 1973; Lin, 1999; Putnam, 2000; Burt, 2001, 2005), so very high proportions of bonding capital in some localities was theorised as constraining the development of network heterogeneity. Residents living in areas where dense and localised personal networks were the norm were more likely to live in homogeneous localities and associate with people like themselves. Finding high structural and spatial cohesion of personal networks in deprived localities with little or no ethnic mix or gentrification is supported by other research (Atkinson & Kintrea, 2001; Bécares *et al*, 2011).

Following Blau (1977a), it was argued that empirical observations of ties between localities could be used as a proxy for social closeness or distance between neighbourhoods. In this study, the most deprived homogeneous LSOAs not only had the highest proportion of residential homophily, but also had the fewest ties to bordering neighbourhoods. Early social commentary by Chicago School theorists described inner-city areas as 'mosaics'; enclaves and ghettos of homogeneous residence where residents of bordering localities could be were geographically close yet socially distant from each other (Park, 1952: 80). Social distance was most obviously displayed through low proportions of ties between the homogeneous deprived LSOAs and their bordering neighbourhoods. We see evidence of this social distance in Chapter

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3, where high residential homophily in the homogeneous deprived, 'peripheral' localities (Collyhurst, Middleton and Harpurhey) is contrasted with a stark drop in ties to neighbouring areas. In another instance, social network data and qualitative narratives are used to highlight social distance between residents of North and West Manchester, despite these areas being physically located within a few miles of each other. These patterns were interesting because they questioned Tobler's (1970) theory of spatial autocorrelation which assumes that geographic propinquity is related to social similarity, which induces interaction. There may have been some socio-economic similarity between residents of these bordering neighbourhoods, but geographic propinquity did not guarantee interaction in these cases. Residents of the homogeneous deprived LSOAs had strong internal ties within the locality but very low levels of interaction with residents of bordering neighbourhoods.

A second type of social capital was discussed in reference to the North Manchester resident networks. Bridging social capital has been defined by Putnam (2000) as incorporating weaker, looser or distant ties, such as those of acquaintanceship. In an attempt to integrate a spatial paradigm into the study of social capital, bridging social capital has been theorised as having a geographic dimension to include alters living at distances beyond ego's immediate locality, as with the spatially dispersed Type C networks.

In analysing bridging social capital, the thesis highlighted instances of spatially dispersed networks. The bridging ties of North Manchester residents tended to be accompanied by some sort of underlying social motivation. Chapter 3 revealed strong ties between residents of North and East Manchester, particularly between couples, an especially intimate type of relationship indicating social closeness (Borgadus, 1947). Similarly, spatially dispersed strong ties were found between some of the North Manchester LSOAs and parts of Cheshire relating to a history of slum clearance. These social networks had remained over half a decade and were being reproduced in the contemporary networks of younger residents. Again, social closeness, shared history and identity, as well as the social reproduction of personal networks over time and space, acted as an underlying driver for developing and sustaining spatially dispersed networks.

In contrast to finding that the homogeneous deprived LSOAs had high levels of bonding capital and social distance to bordering neighbourhoods, the socially mixed LSOAs had lower levels of residential homophily and a healthy level of ties to neighbouring areas. Residents of localities with some social mix (class or ethnic) were better able to extend ties to other neighbourhoods because interactions were not overly focused within the immediate locality. These localities distributed their ties across urban space whilst still maintaining good levels of localised bonding capital for cohesion within the neighbourhood.

Relative proportions of bonding, bridging and linking social capital raised questions about the effects of geographic propinquity and the relationship between social and geographic space. It has been argued that the geographically further away two neighbourhoods are, the less likely they are to be socially close (Tobler, 1950) and that geographic propinquity will encourage localised interactions over distal ties (Moreno, 1947; Schelling, 1971, 1978). But the data of this thesis reveal that geographic propinquity does not necessarily operate as a rule. For the most homogeneous LSOAs, beyond the immediate locality, there was a stark drop in ties to residents of bordering localities and an increase in ties to alters at further distances across North Manchester. However, geographic propinquity was linear for the socially mixed LSOAs; since the proportion of alters decreased with geographic distance. Contexts of deprivation and gentrification may have influenced the pattern of resident cohesion and local social capital. There may have been an increased sense of shared local identity between residents of homogeneous areas compared to those in socially mixed areas so that residents of socially mixed localities looked further afield for homogeneity. In this sense, bonds of social similarity were not defined by local neighbourhood boundaries for residents living in mixed areas. Whereas in the homogeneous localities, neighbourhood boundaries were crucial in structuring the social networks underpinning resident cohesion.

It is likely that residents living some distance apart from each other are also more likely to have distinct spheres of social interaction, including some alters that do not know one another (Burt, 2001). Current definitions of bridging capital are based on distant or weak ties, but do not specify that alters should be socially dissimilar. It is possible that some spatially bridging ties actually connect individuals of similar class, educational level and culture, so bridging capital provides *horizontal* diversity but does not guarantee *vertical* access. This is consistent with other

research linking capacities for mobile lives with individuals who are usually well-educated and middle-class and have access to the capitals required to establish and maintain long distance relations (Urry & Elliot, 2010). Indeed, bridging social capital was found most often in the least deprived and gentrified locality of Prestwich. If bridging ties are horizontal, then ego and alters need not be heterogeneous and this may explain some of the ideational homogeneity of interpretation and experience found amongst residents with Type C networks in Chapter 5. Although bridging capital may incorporate diversity through weak or distant ties, these relations may be horizontal not vertical.

A third type of social capital emerges from the literature to address the issue of horizontal and vertical access. 'Linking' social capital (Woolcock, 2001: 14) materialises from network ties connecting individuals at *vertically* different social locations. Personal networks that combine local and spatially dispersed alters may perform the function of 'linking' social capital because nearby alters are likely to be in some way dissimilar to those living further away (at least by nature of their different residential localities). Linking social capital also allows us to theorise the importance of connections between residents of socially different neighbourhoods as Chapter 3 illustrated in the depiction of ties from North Manchester to South Manchester. In contrast to the large kinship base of propinquitous networks in North Manchester, networks between North and South Manchester were predominately newly established friendships or work-related ties. Type B networks had median levels of spatial dispersion because these residents had some localised ties combined with contacts at further distances. Interestingly, in the interview dataset, Type B networks were most prevalent in the class-mixed area of Blackley. Subsequently, it may be argued that Type C networks connect socially similar individuals, in contrast to Type B networks that combine local and dispersed ties and perhaps are more likely to transcend class-groups and incorporate social diversity.

Considering the distribution of resident ties within and beyond the locality leads us toward a spatial theory of social capital that distinguishes between the functional role of bonding, bridging and linking ties of neighbourhoods. Various types of spatial social capital provide different functions and it is the combination of these ties that creates neighbourhood social capital. Residential homophily yields cohesion in the neighbourhood via localised bonding, social closeness and trust (Coleman, 1988, 1990). On the other hand, ties transcending

geographic space may provide an alternative sort of tie-quality that offers opportunity for network diversity and potential access to a range of resources. Bridging ties horizontally connect spatially dispersed individuals and so have an increased capacity to be non-redundant, while linking ties unite individuals at dissimilar positions in the social strata so combining localised and spatially dispersed ties and are conducive to resource diversity (Granovetter, 1973; Lin, 1986; Putnam, 2000; Burt, 2001; Woolcock, 2001). Variances in social capital were found between deprived localities. Bonding capital was most predominant in homogeneous localities, the highest levels of bridging capital were found for residents of the least deprived gentrified locality and linking social capital was found to be more prevalent in socially mixed areas. The next section considers further the consequences of the distribution of social capital in urban space.

6.4 Flows, thresholds and balances of social capital in urban space

Urban cohesion is not spatially bound; rather ties between residents occur both within and between neighbourhoods. Moreover, different types of spatially organised ties perform different functions of social capital. Can we theorise the implications of flows, thresholds and balances of these social capital ties for urban cohesion? Since a diversity of resources can be accessed through bridging and linking ties to residents in other neighbourhood spaces, can we conceptualise social capital as a collective resource between residents, localities and wider spaces beyond? Are residents able to draw on the resources of the wider neighbourhood in which the locality is embedded?

Borgatti, Jones & Everett (1998) make an important distinction between the external individualist and internal collectivist analytical approaches undertaken by Burt (1992) and Putnam (1995) respectively:

> In general, the group has been implicitly conceived of as a universe: relationships, norms and systems within the group are discussed, but nothing outside the group is considered. For example, Putnam takes the United States as his object of analysis, and he documents the decline of participation in volunteer groups within the US… When applied to collective actors within a larger system, the essence of Putnam's approach is to look within the collectivity, while the essence of Burt's approach is to look outside the collectivity. Thinking in purely network terms,

> Putnam would look at the structure of relationships within the group, while Burt would look at the structure of the group's relationships to outsiders (Borgatti *et al*, 1998: 28-29).

This distinction is important for studies of urban cohesion because cohesion is not bound within the neighbourhood nor is it solely the domain of individual action. We have to consider both localities and residents as actors and assess the effects of relational tie structures at both levels because social capital is both collectively generated and individually owned (Ferragina, 2010: 75). In terms of social network dynamics, this echoes arguments about structural cohesion being both an individual and group-level property (Doreian & Fararo, 1998; Friedkin, 2004; Moody & White, 2003; Kilduff, 2005).

In this study we have seen how individual personal networks yield social capital at both neighbourhood and resident levels. Local effects of human interaction have consequences at further network distances (Moreno, 1934: 3; Christakis & Fowler, 2009). If neighbourhoods are to be conceptualised as actors we must acknowledge that the social capital of a neighbourhood is relational since its ties are dyadic. Social capital is developed and shared each time a resident of one locality extends relations to a resident of another locality. In the event that a resident establishes a social relationship beyond their immediate neighbourhood they adapt their own structural-spatial personal network form whilst also diversifying their neighbourhood's network structure and composition. Simultaneously, these same processes of network change occur for alters and their neighbourhoods.

We may theorise these structure-agent effects in terms of the flow of spatial social capital between residents and localities and between localities and wider neighbourhoods (Sassen, 2002). Individual actions affect larger social structure and institutional level structures impact upon individual outcomes (Laumann, 1966, 1973; Bourdieu, 1986; Coleman, 1990, 1994; Giddens, 1990). Putnam (1995, 2000) claims that social capital has collective rewards and individual actors can access these shared resources without actually contributing to them. The relational nature of these interactive networks inevitably means that this social capital is not operating atomistically but relationally, yet paradoxically the benefits generated by urban cohesion can be both individualistic and collective. The wider neighbourhood in which a locality is embedded provides an additional pool of resources or constraints (Laumann, 1973). In this study, localities that were the most homogeneous and introvert were embedded within

neighbourhoods that were also highly deprived. On the other hand, the deprived localities that were socially mixed with bridging and linking capital were located within wider neighbourhoods of comparably less deprivation.

The networks of social capital generated by urban cohesion are multi-level, existing at individual (resident) as well as collective (neighbourhood) levels. As a consequence of their spatial embeddedness, individuals may be enabled or constrained by the flows of social capital in their wider environment. This sharing of social capital across social and geographic space can be beneficial for deprived localities nested in lesser deprived neighbourhoods, but is constraining if deprived localities are located within wider areas of deprivation. Considering thresholds and balances of urban ties may be helpful in theorising the development of intra-local versus extra-local ties for cohesion. Are bonding, bridging and linking ties subject to thresholds?

Threshold models attempt to explain how the actions of individuals can create macro-patterns of collective behaviour. These theories focus on 'tipping points', the number or proportion of actors who must make one decision before a given actor does so. In the case of this study, we may explore how thresholds of bonding, bridging and linking capital might create a domino-effect within a neighbourhood as residents socially influence the behaviours of each other and attitudes and practices 'catch-on' locally.[64] This may help us to understand why high proportions of residential homophily (bonding capital) were found within homogeneous localities.

Schelling (1969, 1971, 1972) developed early agent-based theoretical models of residential segregation based on the homophily principle (McPherson, 2001), the preference for individuals to interact with others like themselves. His threshold model addresses how homophily between residents might operate in bounded neighbourhoods using simulations to demonstrate how discriminatory preferences of individuals give rise to macro-structures of residential segregation. The model is based upon the assumption that residents will be tolerant of

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[64] Granovetter (1978) tries to understand thresholds in collective human behaviour by applying a diffusion model that stipulates parameters on the number or proportion of others who must make one decision before a given actor does so. Granovetter's model takes a frequency distribution of threshold scores and calculates the 'equilibrate number' for making each decision.

diversity within the neighbourhood as long as they are not a minority (in Schelling's case, the variable was ethnicity). As the number of residents opting for residentially homophilous relations increases, the trend creates a domino-effect amongst surrounding neighbours and waves of homophilous interactions will continue to flow through the neighbourhood. As resident relations within the neighbourhood become tipped toward social similarity; the end outcome being neighbourhood segregation. Indeed for Schelling (1969: 489), 'the only equilibrious state is one of complete segregation' where internal relations are between socially similar others and the neighbourhood is closed-off from diversity. This type of modelling helps illustrate how high proportions of residential homophily (bonding capital) may develop within homogeneous resident populations and how the development of network closure (Burt, 2001) is linked to localised cohesive (Type A) networks.

Whilst Schelling's model is limited to internal relations within a neighbourhood, others have explored external ramifications of homophilous interactions. Massey, Durand & Malone (2002: 29) discuss thresholds of migration perpetuated by social networks:

> Each act…alters the social context within which subsequent decisions are made, thus increasing the likelihood of additional movement. Once the number of network connections in a community reaches a critical threshold, migration becomes self-perpetuating.

Such theories are useful because they acknowledge that actions of individuals are influenced by the activities of others who are external to the neighbourhood. These perspectives suggest that rather than focus on an individual's neighbourhood, we should look toward wider social network influences (Richley, 1976; Salt, 1986; Wellman, 2005; Bashi, 2007). This model is consistent with the view of urban cohesion as dependent on patterns of networks and social capital both within and between neighbourhoods. As such we may use threshold theories to consider patterns of cohesion in our sample LSOAs. Are residents of the most deprived LSOAs constrained by the large proportions of bonding ties within the neighbourhood? Does this lead to the tipping of thresholds so that patterns of resident interaction become reproduced in favour of homophily? The most homogeneous LSOAs had the highest proportions of internal residential homophily and had the highest frequencies of Type A networks (Schelling, 1971, 1972; Atkinson & Kintrea, 2001; Bécares *et al*, 2010). The social reproduction of such patterns of interaction may have closed localities off from external networks and led to the LSOAs being positioned at the periphery of the North Manchester neighbourhood. This may explain, in part,

why in some localities the social reproduction of dense and localised networks is a structural norm. Perhaps when residents act collectively, over time, to either build 'bonding' capital through residential homophily, or 'linking' or 'bridging' ties to external neighbourhoods these actions can create a future predisposition for one type of local social capital over another.

These notions of tipping and thresholds lead us to ask if there can be an appropriate balance of bonding, bridging and linking ties. Can too much residential homophily be detrimental for localities?

There is a trade-off between the benefits of residential homophily and spatially dispersed networks. Separate groups of spatially dispersed contacts may offer resource diversity and new sources of information if these ties are 'non-redundant' (Burt, 1992). As discussed, spatially dispersed bridging ties may not have vertical reach. Actually, homophily and social reproduction of practice between higher capital groups often creates macro-conditions of social advantage for groups at similar positions in social space (Devine, 2004; Lin, 2009). This was illustrated in Chapter 5 where the job-seeking strategies of Type C individuals activated distal bridging ties for job-seeking. For individuals of lower class groups or for those with less access to cultural and economic capital, access to resource diversity might involve seeking to establish contacts beyond the immediate residential locality. For example, Laumann (1966) found that residents in the Detroit study preferred to associate with alters of higher social status, which he described as the 'prestige principle'. This observation is echoed by Bourdieu (1986) who argues that attempts by lower classes to emulate higher classes, because of the constraints of habitus, often result in 'distinction' between class groups rather than class bridging.

There are certainly benefits to residential homophily, for example in generating strong local bonds of trust, stability, shared identity and a sense of community (Riger & Lavrakas, 1981; Coleman, 1990; Sampson *et al*, 1997; Putnam, 2000; Moody & White, 2003). However, this thesis illustrates that collective identity and residential stability can exist alongside narratives of defensiveness, social distance toward bordering neighbourhoods and even social isolation. Perhaps too much bonding capital is detrimental. Putnam disagrees, claiming that:

> …social capital is closely related to what some have called 'civic virtue'. The difference is that
> "social capital" calls attention to the fact that civic virtue is most powerful when embedded in a

network of reciprocal social relations. A society of many virtuous but isolated individuals is not

necessarily rich in social capital (Putnam, 2000: 19)

Though some density of ties is needed for localised bonding between residents, this statement is

problematic in that it assumes that a society that is highly interconnected will also be high in

civic virtue. Are there thresholds to network density and localisation before the benefits

become drawbacks?

Borgatti, Jones & Everett (1998: 32) argue that homophily will have a negative or curvilinear

impact upon social capital because 'less homophily should mean greater exposure to a wider

range of ideas...but homophily may also improve communication'. Density and homophily are

considered inverse measures of range, whereas size and heterogeneity can be seen as

theoretically demonstrative of range and diversity (Blau, 1994).   In support, Burt (1992) argues

that individuals with non-redundant networks are at an advantage because low cohesion

facilitates access to a diversity of resources whilst cohesive redundant networks encourage

constraint, peer-pressure and conformity. Ideally, though perhaps impractically, proportions of

residential homophily and density need to be balanced. Atkinson & Kintrea (2001: 2295) also

illustrate the negative effects of too much bonding capital:

…residents who have predominantly locally based friends and family…are much more inward-

looking in the deprived area….measures examining residents' links with acquaintances who have

jobs and acquaintances who live in different housing tenures suggest relative isolation among the

jobless and council renters who predominate in the deprived neighbourhoods.

In this study, high density and localisation of networks was found between residents of

homogeneous localities and because this network type tended to feature unemployed or lower

occupational class groups, the benefits of these strong reciprocal ties are unclear.

It has been claimed that social capital does not always provide positive benefits; it can also

produce negative or null side-effects (Crossley, 2008; Fine, 2010, 2011). Although, there are

different functions of social capital and assessing the dark side of social capital depends on how

we define these ties and the group context to which we apply the case. Too much bonding

capital may be harmful for homogeneous deprived localities, yet other heterogeneous localities

may benefit from building dense localised ties between fragmented resident groups. Building

social networks cannot be exponential, or even scalable, because the effort and time involved in

developing and maintaining ties are limited (Fischer, 1982b; Dunbar, 1992; McCarty *et al*, 2000). As a consequence, bonding, bridging and linking social capital must be balanced; investing in or favouring one tie type is made at the expense of another. Too much of one type of capital may be detrimental but a mix of separate types of social capital can be conducive for urban cohesion.

Although the spatial patterning of resident ties was related to underlying social motivators, balances and thresholds of residential homophily may be more about circumstance and availability than choice (Laumann, 1973; Huckfeldt & Sprague, 1988; Burt, 2001). As illustrated in this study, patterns of resident cohesion tend to be habitual rather than reflexive. It seems that the inequalities of the distribution of bonding, bridging and linking ties may be related to unequal capacities to build networks. Residents living in deprived localities embedded within deprived wider neighbourhoods will be at more structural disadvantage than residents of deprived localities located within less deprived areas (Atkinson & Kintrea, 2001; Kintrea & Atkinson, 2001; Baum, Arthurson *et al*, 2010). In such a sense, it is not only the immediate locality that is influential upon residents' lives, but also the wider context in which the locality is embedded. It is clear that social capital is not neutral or distributed equally (Edwards & Foley, 1998; Portes, 1998). Fischer relates local situations of urban life to unequal access to capitals, 'people with the opportunity to do so will sort themselves according to personal preferences; as a result, residents of one kind of neighbourhood or town will tend to have different social networks than residents of another neighbourhood or town' (Fischer, 1982a: 8-9). Some individuals may not be aware of the constraints of the structures in which they are embedded and may not consider personal networks as potential avenues from which to extract social capital resources (Bourdieu, 1986; Galaskiewicz, 1996: 21).

The distribution of social capital in geographic space has consequences for urban cohesion. Rather than consider 'area effects' of urban cohesion it may be prudent to conceptualise resident networks beyond the immediate residential neighbourhood because it is the balance or threshold of external ties against those that are residentially homophilous that is key to understanding opportunities for urban cohesion. It is also helpful to theorise the effects of multi-level social capital for individuals and collectives, whilst recognising that the context of

these networks may inhibit the development of some types of ties and create a proclivity for others.

6.5 Contributing to urban cohesion: resident roles and social action

The chapter has so far been concerned with social capital occurring within the structure of resident relations, or social networks. This section turns to deliberate the impact of these structured resident relations upon social action, in particular, highlighting the urban roles arising from the dual analysis of network structure and ideations. Putnam (2000) states that social capital can be identified in two ways: firstly, as social bonds of networks connecting residents, and secondly, through ideational consensus between residents. Urban cohesion not only involves assessing the spatial and structural cohesion of resident networks but also the structure of attitudes and practices. Taking into account ideations and network structure together allows us to theorise how the resident roles created from the typology intersect and map on to structures of community and society. The various ways in which residents interpret and experience ideational aspects of cohesion in the context of their network structure illuminates the existence of the different roles that residents play in their localities.[65] These roles act to structure local social action and contribute to urban cohesion. The next section will discuss these urban roles in turn.

The localised-cohesive distribution of Type A networks resulted in stable, close-knit networks, rather than fluid and mobile interactions. The networks of these individuals predominantly consisted of 'bonding' ties within the immediate locality and it made sense that the practices and attitudes of Type A residents were also locally embedded. This network type was principally found in the most deprived LSOAs and amongst individuals in the lowest class groups.

Interview narratives indicate that Type A residents perceived themselves to 'fit in' with both the local space and other residents. These individuals felt a sense of community and were emotive and sometimes even defensive about their locality. The high structural and spatial cohesiveness

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[65] Though Chapter 4 identified a link between class and resident network structure, this discussion of urban roles is not centred upon notions of status and prestige (Weber, 1946, 1964; Laumanm, 1966), nor are these different roles used to illustrate stratification. Instead I argue that the different combinations of network structure and ideations fit together in a complimentary fashion and contribute to separate elements of urban cohesion.

of their networks meant that Type A residents were the most embedded in their networks and in the locality, so had a higher emotional stake in the neighbourhood. This finding contradicts Martin (2005) who argues that, in contrast to the middle-classes, working-class residents in Notting Hill did not articulate emotional attachment and were instead concerned principally with the 'material aspects' of local life.[66] For residents with Type A networks, the neighbourhood was not just a spatial focus for dense, localised networks, but also acted to concentrate the social reproduction of attitudes and practices (Feld, 1981). Habitus was strong for these residents; Type A individuals displayed the most ideational homophily and framed ideational constructs in similar ways.

The spatial, structural and ideational form of Type A networks placed these residents at the heart of local activities and they contributed to local cohesion from the core of the locality. Relations between these individuals provided strong, long-term bonding capital, a sense of commonality, shared identity and history.

Type C residents had fragmented and spatially dispersed networks. These residents named alters who were loosely connected and living at some geographic distance from one another. In this sample, individuals with Type C networks were mostly, but not always, of higher class groups and from the least deprived localities.[67]

Type C residents were also the most pragmatic. Unlike Type A residents, they described their satisfaction with the general neighbourhood in objective, functional terms; circumventing very personal or emotive opinions during interviews. Type C residents also had the most cultural capital and were better able to reflect upon topics of urban cohesion and tended to respond to interview questions in quite abstract or hypothetical terms. However, like Type A residents, some Type C practices were habitual. For example, the utility of personal networks for job-searching was described in normative terms. Type C residents largely drew on 'bridging' social capital (acquaintanceship ties or geographically distant contacts) to access resources. Those

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[66] There are, however, several disparities between this study and that of Martin (2005). Unlike Martin's study, there is no middle-class comparator group because the resident sample was made of benefits dependent or working-class individuals. In Martin's study, the middle classes had made a conscious decision to move into poor areas to help gentrify and regenerate the space.

[67] All but two individuals with Type C networks were employed in professional or intermediate occupations. No Type C cases were found in the most deprived interview localities of Collyhurst or Middleton.

who had successfully acquired jobs and job information through network contacts had done so without much conscious or active effort.

Though perhaps marginal to local social networks, Type C residents still played a role in local cohesion. Type C residents were not locally embedded nor did they feel a strong sense of community (communicated via admittances of not fitting in or future hopes of moving house), but they did like their locality. Residents with spatially dispersed and fragmented networks carried out their lives in a manner that was almost peripheral to the networks of locally embedded residents. Individuals with Type C networks contributed to urban cohesion by providing bridges to outside localities and so were likely to have better access to types of resources, information and ideas that were not circulating within the immediate locality. For this reason, the role of Type C residents in deprived localities is extremely important, albeit peripheral.

Type B residents had networks of median spatial dispersion and median density levels, this was because some of their alters lived nearby and others at further distances. As a consequence, these residents held 'liminal' positions (Turner, 1967), being socially and structurally 'betwixt and between' local and distant groups of alters.

This structural and spatial diversity, mixing bonding and bridging ties, may have been conducive to the production of 'linking' social capital; providing Type B residents with potential to access contacts at vertically different social positions (Woolcock, 2001). Type B residents were aspirational self-monitors (Kilduff, 2003: 81-82). These individuals were conscious of the instrumentality of personal networks for job opportunities and described themselves as rational, active, agents of change (Burt, 1992, 2001). By nature of their structural-spatial network configurations, Type B residents' access to vertically diverse contacts placed these residents at optimal positions to access non-redundant or novel information and resources (Lin & Dumin, 1986; Burt, 1992). Having access to a combination of local and spatially dispersed contacts may have incorporated an element of class-spanning that produced positions of social advantage in a similar manner to that observed for Type C bridging networks (Lin & Ao, 2008).

Although these residents were aware of the opportunity offered by personal networks, they also recognised that conflict may arise from their liminal network positions between disparate sets of contacts. Chapter 5 illustrated how Type B residents adapted, negotiated and switched narratives to suit specific contexts as a way of making sense of, and coping with, their liminal positions (Goffman, 1959; Mische & White, 1998). Attitudes, practices and experiences of ideational cohesion were most inconsistent for Type B residents and different ideational frames were found amongst these residents.

The networks of type B residents included both localised and spatially dispersed alters and so these residents played a brokering role within the immediate locality and also between the immediate locality and surrounding areas. In this respect, as well as fostering ties to bordering or nearby localities, Type B residents linked cohesive, localised groups (Type A) with locally peripheral (Type C) groups.

Identification of resident roles using typologies is a simple way of demonstrating that urban personal networks have not become universally mobile and dispersed. Within deprived localities, different types of social network and ideational structures exist and these yield varying functional roles of urban cohesion. Type A residents were at the centre of local cohesion using bonding capital to weave together a core of residents based on ideational homophily. Type C residents were at the periphery of local cohesion because they were not strongly embedded within the locality, emotionally or practically. Instead, Type C networks transcended the immediate neighbourhood and provided bridging capital and external resources for the locality. Finally, Type B residents held liminal positions and offered linking social capital. Type B residents were the link between Type A and Type C residents, brokering between these localised and spatially dispersed individuals. The roles also draw attention not only to the different functions of social capital in resident networks, they also illuminate the various perspectives and experiences people have of urban cohesion.

6.6 Implications for community and society

As an alternative to studying area or neighbourhood effects, relational theories and spatial models of social networks between residents can help us to understand urban cohesion. It is the distribution of different types of ties across urban space and the balance of bonding,

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bridging and linking ties, that affects neighbourhood social capital and individual opportunities for social action. In examining the roles residents play in contributing to urban cohesion we may theorise the forms of community or society arising from the combination of network types and ideations. This chapter has argued so far that spatial, structural and ideational forms of cohesion in urban space produces variant distributions of social capital and creates different resident roles. This section will explore how these different resident roles fit together in order to understand how urban cohesion operates and to theorise the implications of this for theories of community and society.

In Chapter 1 it was argued that despite resident networks not being bound by the locality (Wellman & Leighton, 1979), policy focus has tended to favour the building of bonding social capital within neighbourhoods over bridging or linking ties between neighbourhoods. Localised-cohesive networks may be good for cohesion within the neighbourhood but these networks often encompass homogeneity and closure so could be detrimental for social diversity (Burt, 2005; Lin, Cook & Burt, 2008). As found in this study, the link between high residential homophily and local deprivation as well as the prevalence of Type A networks amongst low class groups suggests that too much bonding capital may be detrimental or constraining for neighbourhoods. Informed by a relational methodological approach, Hipp (2010) describes two interrelated urban network structures:

> …consider the network of an entire city. One possible structure would entail very dense localised ties. Such a structure would imply tightly grouped cliques within micro-neighbourhoods that are relatively isolated from one another. In contrast, an alternative structure would entail network ties criss-crossing the various micro-neighbourhoods.

The former (dense, localised) structure was also described qualitatively by Gans (1962) in his study of the East Side of Boston in the late 1950s. Although the micro-localities that Gans observed were highly cohesive, they were socially isolated from one another. Gans argued that, as a consequence, these various micro-localities were unable to band together to take collective action to stop the subsequent gentrification that shattered their neighbourhoods. More ties *between* neighbourhoods may have been advantageous in efficiently bridging or linking these disparate local factions (Burt, 1992). The latter, 'criss-crossing' structure described by Hipp depicts a distributed network with a high amount of bridging. However, taking both these structures together, the dense clusters with some tie distribution creates more variety and

balance to the urban network. In combining these network types, the urban system simultaneously features a social capital mix. This type of network would permit a greater flow of people, ideas and cultures across the city and provides an urban community-society model. In contrast to the Gans case, Bellair (1997) demonstrated that the presence of spatially dispersed weak ties provided residents with the capability to foster ties with those in the broader community beyond their micro-neighbourhood, and therefore, were more effective at reducing crime. The combined community-society model is one of small worlds (Watts & Strogatz, 1998; Watts, 2003) and is probably a quite accurate reflection of real world social networks.[68] In this type of network, individuals are often connected by a few degrees although this mutual path of acquaintanceship may not be initially obvious to the parties involved (Milgram, 1967). It is possible to imagine how the Type A, B and C structural-spatial typologies may fit with this community-society model featuring elements of localised-cohesion and sparse-dispersion, but other theories of urban network structures also exist.

In a similar vein, Baldassarri and Diani (2007) propose two different ideal-type network graphs that can be used to theorise urban residential systems. Centralized, hierarchical networks are structured so that some residents are better connected than others; here power, centrality or cohesion is focused 'around particular focal points' (Scott, 2000: 89) or is 'dominated by a few places' (Irwin & Hughes, 1992: 42). According to Baldassarri and Diani (2007), a centralized network structure would provide optimum capabilities for disseminating messages and encouraging the mass mobilization of residents, as required in the Gans study of East Boston (Gans, 1962). Conversely, a decentralized, polycentric urban network would have more equality of position between residents. Clearly, the distribution of bonding, bridging and linking capital in a decentralized type of urban network will be more equitable than in a centralized network. A decentralized urban network would also be robust against collapse and thus conducive to urban social order and sustainability. However, urban cohesion consists of more than social network structure. Social networks are imbued with content through the micro-ideations that give meaning to these macro-patterns of interaction. Friedkin (1998: 10-15) discusses how ideational factors operate within social networks through a description of

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[68] A small world network is a combination of a regular lattice (exhibiting a large diameter and high clustering coefficient) and a random graph (exhibiting a small diameter and low clustering coefficient). Watts & Strogatz (1998) define small world networks as characterised by a high clustering coefficient but a small diameter. A small world social network structure allows for growth in a random graph as long as the diameter remains low.

strongly and weakly constraining structures. In strongly constraining structures, ideational outcomes are principally influenced and shaped by institutionalized characteristics such as normative expectations, culture and history (Freidkin, 1988: 11). Conversely, weakly constraining structures occur where the institutionalized stability is infiltrated by 'extraneous conditions' that 'introduce highly idiosyncratic and diverse responses' because personal goals, beliefs, commitments and ideologies give rise to 'personal circumstances which enter into actors' opinions and behaviours' (Friedkin, 1988: 12-13). These theories of global level network order are useful for theorising the interplay between social network structure and ideations, and the influence of these factors upon urban cohesion. More specifically, these ideas encourage us to deliberate how different network structures and ideations contribute to, and impact upon, contemporary forms of community and society.

Let us first take Baldassarri and Diani's (2007) centralised network and Friedkin's (1988) strongly constraining structure and relate these ideas to literature on urban social networks. In existing literature, very dense, localised structures have been characterised as highly normative, rigid and constraining upon attitudes and practices (Durkheim, 1893/1933; Simmel, 1902; Festinger *et al*, 1950; Cartwright & Zander, 1960; Coleman, 1990; Granovetter, 2005). These environments of normative constraint have been typically associated with community because since residents live in close proximity and social circles overlap, the pressure to conform is increased. So perhaps urban 'community' exists in centralized, strongly constraining network structures.

If we then turn to define the network structure of society following Baldassarri and Diani (2007) and Friedkin (1988), decentralized, polycentric urban networks with more equally distributed capitals should reflect a society model. In this type of urban network structure, resident attitudes will be less steadfast and rigid whilst personal idiosyncrasies theoretically permit more freedom of expression and give rise to liberal values such as cosmopolitanism and acceptance of diversity. Accordingly, the identities, goals and motivations of residents may be diverse, fluid (Beck & Beck-Gersheim, 2000; Bauman, 2000, 2007) and even blasé (Wirth, 1938). Taking the antithesis of this, will the urban network structure of 'society' be decentralized and weakly constraining? Correspondence can be found between Friedkin's theory of network structure and ideations and theoretical configurations of 'community' and 'society', albeit

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somewhat candid, but it is difficult to judge how these urban conditions might be represented as centralized and decentralized urban network structures. Is community more hierarchical than society or do structures vary from case to case? It is certainly clear that the weakly constraining ideational structure of the decentralized, polycentric network matches that aspired to by policymakers, however ideational flexibility is unlikely to arise in neighbourhoods with strong residential homophily and a preponderance of localised cohesive networks. As a consequence, this type of political strategy is at odds with the intended structural design.

Urban cohesion encompasses a range of network structures and ideations, which produces a set of resident roles that operate in a manner somewhat concurrent with Durkheim's (1893/1933) functional social structure. Some have added a spatial element to theories of communal and societal bonds. For example, the 'urban habitus' (Butler, 2002) and urban/rural distinctions (Keller, 1968; Smith & Philips, 2001). Community and society co-exist in urban space yet different ideational 'outlooks' are associated with each type of structure. Keller (1968: 160) distinguishes between 'local' and 'urban' oriented individuals:

> The locally oriented resident concentrates on the immediate local area for the satisfaction of basic needs; social, personal and material. Whereas the urban oriented type uses local facilities, services and contacts in a much more limited and exclusive way, essentially looking to the wider society for these things. The local type resides in the city but lives in the neighbourhood, the urban type resides in the neighbourhood, but lives in the city.

In 1952, Kaufman described two orders of social interaction existing in urban ('mass society') and local ('primary community') spatial spheres:

> The 'mass society' and the 'primary community' are in many ways polar types. The former is a highly complex social structure with an extensive division of labour. Social relationships are of a secondary nature and consequently, social distance is relatively great. Individuals are not known as 'whole' persons as in their primary community but rather their associates see them only in highly segmentalised roles (Kaufman, 1952: 430-437).

The identification of orders of social relations by Keller (1968) and Kaufman (1952) are useful for interpreting the data arsing in this thesis. There are synergies here between Kaufman's 'mass society' and Baldassarri and Diani's (2007) polycentric network. Certainly, Type C individuals would most likely be 'urban oriented' and inhabit the 'mass society' space and structure of relations, not only because local ties do not form the backbone of Type C networks

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but also because these residents are not central to local social circles either. Though Type C residents are peripheral in local 'community' their role is still imperative to the functioning of local relations. On the other hand, we may conceptualise the Type A residents as forming the core of local community, or as Kaufman terms 'primary community' with maximal involvement in local social relations. As Keller describes, a locally oriented resident relies on the neighbourhood and perhaps has more of a local stake than residents with spatially dispersed networks and may be more defensive over this space.

Community between residents can be illustrated through shared meaning and identity (Cohen, 1985: 118) but social closeness and shared experience can also be encapsulated within personal network communities (Elias, 1974; Blau, 1977a; Wellman & Leighton, 1979: 364). Community is not just symbolic and abstract; bonds of social closeness are also embodied, practiced and 'acted out'. Type C residents were generally happy with their local area but did not feel a sense of community; aligning with the physical place instead of making an emotional connection with other local people. Conversely, Type A established affective bonds of solidarity with other local residents and associated with people over place. The ideational homophily of Type A residents on Components 2 and 4 (local embeddedness and sense of community) implied a Gemeinschaft type community (Tonnies, 1887/1957), whereas the non-affective, somewhat superficial nature of Type C local affiliations fit with the Gesellschaft characterisation of instrumental relations akin to rational individualism (Tonnies, 1887/1957).

These theories on urban community and society are helpful in locating and distinguishing between the emotional, core roles of Type A residents and the pragmatic, peripheral roles of Type C residents. However, the dualistic ideal type characterisations of Tonnies (1887/1957), Kaufman (1952) and Keller (1968) only depict polar opposites, they do not explain how these distinct resident roles function and interconnect (Durkheim, 1893/1933) nor do they theorise about how urban cohesion is maintained between these dualistic states. What happens in the middle ground between extremes or ideal types of community and society?

It is here that we might finally consider how the three urban roles of this study fit together. In particular, shedding light on the role of Type B residents in providing linkage between core Type A residents and peripheral Type C residents.

In *The Metropolis and Mental Life*, Simmel (1903) describes how modernity gives rise to ambiguous social positions as the individual becomes trapped between acting as a collective member of society and maintaining independence. The antagonism and duality of Type B roles may result from disjuncture between 'globalisation and belonging' (Savage, Bagnall & Longhurst, 2005) or 'localism and globalism' (Forrest, 2008). Type B residents are in transition between spaces of different network structures and ideations and so it is difficult to keep control over identity (White, 1992). Turner (1967) describes this liminality as a state of becoming; here identities, attitudes, practices and social networks may be provisional rather than fixed.[69] This can be contrasted with the consistent ideations and stable network structures of Type A and Type C residents. Linking localised and spatially dispersed alters may also transpire into Type B residents being 'between' positions of community and society. If Type A roles best reflect community and Type C roles reflect society, then the switching strategies of Type B residents positions these individuals somewhere in the middle ground.

Though Schelling (1971, 1972) and Massey, *et al* (2006) conceptualise neighbourhood networks changing as a result of migration, residents do not need to be physically 'moving' to cause neighbourhood dynamics to alter. Individual 'mobility' can occur if a person has spatially dispersed alters in a variety of social circles and so movement or mobility in an ideational sense (Urry, 2000a, 2000b; Urry & Elliot, 2010) was evident in Type B networks. Type B residents were most able to adapt the cultural schemas from their multiple environments (Goffman, 1959) and switch (Mische & White, 1998) between ideational frames. This was the closest the study came to locating fluid or ambivalent identities and practices (Bauman, 2000, 2007; Beck & Beck-Gersheim, 2000).

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[69] Though it is not clear if Type Bs become Type Cs. For Turner (1967: 93), 'a state' is a 'relatively fixed and stable position' (Type A and C are states, B is liminal). For many, Type B may not be a trajectory state, rather a position itself. Perhaps for some, network structure is transitional and so attitudes and practices become subject to social change. This may explain the sense of aspiration in narratives of Type B residents.

The interconnectivity between roles and the functional relationship between social networks, ideations and urban structures is becoming apparent. Kaufman (1952) describes resident types as 'polar opposites' but this is somewhat misleading because in reality, beyond extreme ideal types, social roles are interconnected and mutually dependent. These roles cannot be distinct because urban cohesion is itself a relational concept. It is the interrelationship between these roles that reveals how network structures and ideations underlie the wider picture of urban cohesion. Urban cohesion can be theorised as being held together by the correspondence between resident roles underpinned by the affiliations between network structure and ideations. Analysis of the two-mode network of affiliations between ideational constructs and typologies (Figure 16, Chapter 5) revealed intersections between seemingly distinct resident types. This network of objective relations between positions represented 'domains' of social action (Breiger, 1974) within the 'field' of urban cohesion (Bourdieu & Waquant, 1992). The sociogram illustrated connectivity between each of the structural-spatial typologies and all ideational constructs. None of the nodes were disconnected; there was always a path, direct or indirect, connecting each network structure with all others and also with each ideational construct. The two-mode sociogram verifies the interconnectivity between attitudes and practices as well as between network types and also the intersection or overlap between roles.

Gauging this middle-ground between community and society through the affiliations between network structure and ideations as well as the intersection between resident roles advocates a theory based upon brokerage and closure between social circles (Burt, 2005). At the macro-level, urban social structure may be too complex to conform to ideal types but drawing attention to different combinations of micro-level resident network and the overlap between these lower-order structures may help explicate higher order structural trends (Robins, Pattison & Woolcock, 2005; Faust, 2007).

To understand the implications of forms of resident cohesion for theories of community and society it may be helpful to consider the types of social circles reflecting the different urban roles (Simmel, 1901/1955). Residents with Type A structures primarily interacted in dense, localised overlapping social circles and this tendency toward closure supported norm consensus, social reproduction and habitus as well as the development of affective community bonds. There was more opportunity for brokerage within Type B and C networks. Individuals

with Type C fragmented-dispersed network structures were most likely to have a set of loosely connected or distinct social circles of spatially dispersed contacts with low redundancy (Burt, 1992). This type of social circle configuration is especially advantageous in drawing on loose connections to access new information (Tortoriello & Krackhardt, 2010). Type B networks encompassed a diversity of tie types through a mixture of network localisation and spatial dispersion and an assortment of dense clustering and sparse structures. Type B networks are also likely to involve overlapping social circles but would be somewhere between the densely and loosely connected Type A and Type C structures. The social circles of Type B residents may have overlapped to an extent that was conducive to feeling some sense of community and embeddedness, but was not overly constraining (Simmel, 1901/1955; Cooley, 1902/1964: 148). It is clear that the structure of social circles across the resident roles is greatly varied and contributed to urban cohesion in different ways. Type A residents provided enough closure for community bonds, trust and shared identity to develop, whereas Types B and C brokered ties beyond the immediate locality through bridging and linking social capital. The network structure of Type B residents positioned these individuals between core, cohesive and peripheral, dispersed resident groups.

Kadushin (1966) has called for more research on the differences between overlapping and distinct social circles. In contrast to the extremes of Type A and Type C, we might be interested in the middle ground in between, especially the subtle differences amid the Type B role. Though residents played different roles, these were not distinct. Urban social structure is made cohesive by the overlap between resident roles, which in turn is reinforced by the affiliations between network structure and ideations. Resident roles combine and function to ensure the brokerage and closure required for urban cohesion (Burt, 2005). Finer nuances between variant forms and combinations of urban cohesion may provide better understandings into social structures of community and society.

Urban cohesion is maintained through a mix of functional network types interconnecting within a local space (Durkheim, 1893/1933). Type A residents held the local cohesion together through their emotional commitment and long-term allegiance. These individuals provided a stable, dense core of social networks within the locality that was robust and resistant to external influences, perhaps exhibiting signs of structural closure. Type A residents provided the core of

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the community by nature of their network structures, attitudes and practices. Type C individuals were the most peripheral to local networks, focused on pragmatic ideational elements and bridged to residents or more distant neighbourhoods. These residents were urban oriented individuals (Keller, 1968) focused upon the mass society (Kaufman, 1952). Type B individuals held liminal positions between Type A and Type C residents through a combination of localised and dispersed networks. Type B residents provided a linking function between the most localised and the most peripheral residents; participating in cohesive local networks, whilst also encouraging network diversity through evolving new ties outside of the locality. The unequal distribution of social capital across urban space produces different resident roles. Urban cohesion can be theorised as being held together by the overlap and intersection between resident roles underpinned by the affiliations between network structure and ideations.

The combinations of different networks, ideations and functions of social capital may mean that although resident roles can be quite easily categorised, it is much more difficult to theorise and locate the bigger urban picture. The aggregate, macro-web of urban social networks is far too complex to fit into neat categories, so the distinction between community and society should be replaced for one of brokerage and closure. Processes of brokerage and closure may lead us to consider the role of intersecting social circles in contributing to urban structure. These complimentary combinations work together in a functional way to provide the brokerage and closure required for urban cohesion.

Summary

Different functions of social capital are activated in different types of ties (Coleman, 1988, 1990; Lin, 1999; Putnam, 2000). To understand urban cohesion it is useful to develop theories of resident social networks that transcend neighbourhoods and contribute to the distribution of social capital across the wider urban social structure.

When studying urban cohesion it is impossible to consider social networks as bound within neighbourhoods, because interactions are relational. Threshold models are useful for theorising about the structural development of resident networks in social and geographic space, particularly to investigate the importance of residential homophily, homogeneity and

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neighbourhood social capital. These theories highlight the powerful influence of residential homophily in neighbourhoods and illustrate how collective social processes give rise to spatial patterns. Homophily may act as a driver for social influence in neighbourhoods but especially so in localities with a propensity of dense, localised networks or overlapping social circles where there could be an increased tendency for individuals to replicate the social interaction patterns of those around them. Studying resident social networks can help us to think about how different functions of spatial social capital might produce different neighbourhood effects and to consider how bonding, bridging and linking ties might be balanced in a way that is beneficial to residents and localities, as well as wider structures of urban cohesion across the city.

The chapter also drew on existing urban studies literature to explore how social networks and ideational structures map on to configurations of community and society. Prevailing theories have tended to focus on generating ideal types to describe different resident roles or urban structures. The data of this thesis was used to illustrate that the distribution of social capital in personal networks creates roles for residents to play within their localities. Rather than present polar ideal types, it was useful to consider how these resident roles intersected, for example, through overlapping social circles and affiliations between network typologies and ideational constructs. The chapter closed by arguing that the urban roles combine together in a complimentary manner to produce the brokerage and closure in urban cohesion.

CHAPTER 7: Conclusion

Chapter overview

This thesis has researched forms of cohesion between white residents living in deprived, urban localities of North Manchester. More specifically, it has critically analysed the interplay between spatial, structural and ideational forms of resident cohesion to assess how the organisation of network structures across urban space is linked to attitudes and practices relating to urban cohesion and if these patterns have implications for residents and localities.

Section one of this chapter presents the thesis, the central argument presented in this text. The second section makes prominent the original contributions to knowledge within the thesis in reference to the research questions. Section three highlights some additional substantive arguments and themes arising. I follow this with claims to methodological and theoretical innovation and practical impact. The chapter ends with a reflexive statement including critical assessment and a brief on future research outlook.

7.1 The thesis

In this thesis I have sought to address the following over-arching research question, what are the effects of the interplay between spatial, structural and ideational forms of cohesion for deprived urban areas? The findings are briefly summarised in a few key points, as below.

The patterned interplay between spatial, structural and ideational forms of resident cohesion has consequences for urban life, in particular, for enabling or constraining neighbourhood social capital and individual social action.

Different network and ideational structures were observed across the sample but, importantly, these differences were patterned and could be organised and understood. Social motivations were found to be underlying the spatial organisation of resident networks, evidenced through residential homophily, social distance and the habitual social reproduction of interaction patterns. Another example of pattern and order was found in the relationship between structural and spatial cohesion. Density and spatial dispersion were correlated in the survey networks, whilst a three-category structural-spatial typology could be assembled from the

interview networks. Finally, attitudes and practices to urban cohesion were not random; they were found to be 'framed' in the context of personal network structure. The findings illustrate that these social networks and ideations were not 'fluid' but stable, organised and patterned.

The data imply a link between forms of cohesion, local deprivation and resident homogeneity. Differences were found between homogenous deprived and socially mixed deprived localities. High structural and spatial cohesion were most prevalent in the networks of residents of homogeneous deprived localities, whereas comparably lower structural and spatial cohesion and structural-spatial diversity was found amongst residents of socially mixed deprived localities. Although the context of deprivation was crucial to understanding urban cohesion, these findings were not attributed to neighbourhood effects.

Instead the thesis argues for a relational and contextual theory of urban cohesion in which the social capital generated from interactions between residents transcends localities and provides multiple functions (bonding, bridging and linking). An unequal distribution of these functional social network ties across urban space contributed to balances of neighbourhood social capital and affected the roles residents played within their localities. Urban cohesion was theorised as emerging from the intersection or overlap between types of resident roles, which was in turn underpinned by affiliations between network structure and ideations.

7.2 Original contributions to knowledge: key findings
This section of the conclusion elaborates on the summary above by drawing out the main findings and arguments in relation to the research questions. Research questions 1 to 3 focus on the interplay between spatial, structural and ideational forms of cohesion and are discussed in turn. Research question 4 is cross-cutting, seeking to expose pattern and diversity within the socio-economically similar dataset and is addressed alongside the other questions. Research question 5 was concerned with the consequences or effects of the different forms of cohesion found in the study for residents and localities.

Social and spatial pulls: geographic propinquity and social distance
Research question 1 dealt with the interaction between social and physical space and

questioned the salience of geographic propinquity and social distance in contemporary urban personal networks.

The data in this study revealed social and geographic space to be interrelated (Gans, 1975) because social motivations acted to 'focus' resident networks and ideations in geographic space and create pockets of urban cohesion (Feld, 1981; Park, 1925). As such, geographic clusters of resident interaction were often explicable through social factors such as shared history, common identity and social reproduction. High proportions of ties between localities were interpreted as social closeness between residents of these areas (Blau, 1977a). In some instances the combined effects of social and geographic space resulted in either very localised networks of residential homophily, especially for the most homogeneous localities, or networks that transcended geographic space, for example, slum clearance ties.

Previous literature has asserted the power of geographic propinquity (or physical proximity) in determining the evolution of network cohesion between individuals (Festinger, 1950; Festinger, Schachter & Back, 1950; Sherif, White & Harvey, 1955; Tobler, 1970). The findings of this research query geographic propinquity as a universal driving factor and instead reveal it to be a stronger influence under certain environmental conditions than others.

Differences were found between the socially mixed and the homogeneous deprived localities. Linear effects of geographic propinquity were found in the networks of residents of socially mixed localities. In these cases, the number of alters decreased with spatial distance. The lesser deprived socially mixed localities had mid-ranging proportions of residential homophily, a healthy level of ties to bordering localities and beyond. Conversely, geographic propinquity was not linear in the networks of residents of homogeneous localities. Here, very high levels of residential homophily were found within homogeneous localities (initially suggesting that propinquity effects may be at play) but this internal cohesion was contrasted with a stark decrease in ties to bordering neighbourhoods, followed by a subsequent increase in ties to localities further afield. Geographic propinquity or 'availability' was not therefore the overriding factor for the patterning of networks of residents in homogeneous deprived localities. Rather these findings, supported by resident narratives, reveal social motivations to be key factors in the establishment and maintenance of ties. Residents of homogeneous

localities bonded together because of shared perceptions of social similarity, not because of physical proximity.

In sum, these findings suggest that social and geographic space are interrelated as both impact upon formations of urban cohesion. Secondly, the influence or power of social and geographic factors to constrain or focus resident networks is context dependent because these factors had different influences in homogeneous localities than in socially mixed localities.

The relationship between spatial and structural cohesion in urban personal networks

The second main set of findings arose in response to research question 2. These issues deal with the extent of structural and spatial cohesion in the sample of networks and the relationship between density and spatial dispersion.

The urban personal networks in this sample were predominantly structurally and spatially cohesive because interactions were comprised mostly of localised, dense, stable and long-term ties. Analysis of density and degree centrality scores as well as cliques and components revealed the majority of personal networks to be tightly-knit. Despite the overall structural cohesiveness of networks, varying measures of density and degree centrality and fragmentation existed in a small number of cases where multi-components and isolate nodes were observed. Some networks were simply more connected than others. A negative correlation was found between density and spatial dispersion in this sample, with high scores of network density related to low scores of geographic dispersion. The more local contacts a resident had the more likely they were to know each other but where contacts did not know each other they were likely to live at some distance from ego. Three structural-spatial types of personal network were found: Type A: localised-cohesive, n=25 (very high density and very low spatial dispersion); Type B: median-diverse, n=19 (spatial and structural variation of networks resulting in mid-level density and mid-level spatial dispersion); Type C: dispersed-fragmented, n=8 (very low density and very high spatial dispersion). The typology verified that the majority of personal networks were spatially cohesive as well as being structurally cohesive.

Finding a tendency toward structural and spatial cohesion in this study ran contrary to claims made by proponents of the individualisation thesis that contemporary interactions have become fluid, dynamic and mobile (Bauman, 2000, 2007; Beck & Beck-Gersheim, 2000). Although it was acknowledged that such networks may be prevalent in other socio-demographic groups, descriptions of network stability and longevity were more appropriate than transience for this sample. Even for those with the most spatially dispersed and fragmented networks, alters were usually located within Greater Manchester or surrounding areas but not further afield because these resident networks did not cover a wide geographic radius.

The results of this thesis also contradicted previous research claiming that contemporary urban networks had become much more spatially dispersed than in the past. Wellman's study of East York residents concluded that personal networks had become liberated from local spatial confinements (Wellman, 1979, 1996, 2005; Wellman & Leighton, 1979). Moreover, Blokland *et al* (2003) had observed higher frequencies of low density and spatial dispersion of resident networks in Hillesluis, the Netherlands. These studies had been supported more recently by analysis of urban personal networks by Frei & Axhausen (2007) in Zurich, Switzerland. The discrepancy in findings perhaps results not only from methodological differences but also compositional differences between study samples .[70]

Although the study indicates some diversity between individuals in a socio-economically similar sample, patterns found across these personal networks illustrated that urban cohesion was structured, not random. There was a relationship between spatial and structural cohesion. Contrary to other research, most North Manchester resident networks were localised and cohesive, not fluid or spatially dispersed.

The link between ideational frames and personal network structure
The third research question of this study sought to examine if and how attitudes and practices to urban cohesion were framed in the context of personal network structure. To investigate this question, a Principal Components Analysis of survey responses was undertaken to produce a set of ideational constructs of urban cohesion and each interviewee was given a factor score

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[70] For example, Frei and Auxhausen used a snowball sample.

representing their affiliation with the constructs.

A theoretical model of ideational framing typifications was presented to explore how personal network structures might influence attitudes and practices to urban cohesion. Qualitative analysis of resident narratives was conducted to unveil how residents of each structural-spatial type framed their interpretations and experiences of the ideational constructs. This confirmed three different ideational 'frames'; ideational divergence, ideational homophily and ideational inconsistency.

Ideational divergence illustrated instances where residents with different network types had provided alternative ways of framing the same component. Type A and Type C residents were generally satisfied with their neighbourhood but framed their experiences and interpretations of this in opposing ways. Residents with Type A (cohesive-localised) networks communicated emotive discourses of normalisation and defensiveness, whereas residents with Type C (dispersed-fragmented) networks described their satisfaction in more objective functional terms. On using social networks for job access, residents with Type B (median-diverse) networks were conscious of the instrumentality of their ties and described themselves as conscious agents seeking out opportunity by activating 'linking' social capital. In contrast, when discussing networks and jobs, the narratives of Type A and Type C residents both drew on discourses on normative habitual practice, but then framed their justifications and experiences differently. Type A residents admitted to reluctantly seeking work through 'bonding' ties with close local contacts, whereas Type C residents drew on 'bridging' ties and described this process of finding works as convenient or accidental.

The second framing typification was ideational homophily where individuals with the same network structure framed a component similarly. This type of framing was found in the narratives of Type A residents on local embeddedness and sense of community. These individuals perceived residential stability as crucial for local cohesion and defended their positions in the locality as legitimate by referencing their long-term, established, intergenerational networks. There was also common agreement that 'community' encompassed freedom and security. For those with Type A networks the locality was not only a spatial focus for dense networks but also acted to concentrate ideational frames. The final type of framing,

ideational inconsistency was associated with the networks of Type B residents. The mid-range and diverse nature of Type B networks included both localised and spatially dispersed alters, which placed these residents in liminal positions. To deal with this position of betweenness and to avoid potential conflict amid camps, Type B individuals mediated between social situations by switching ideational frames to suit contexts.

Attitudes and practices were constructed in the context of personal networks. Since individuals of each network type drew on different types of social capital ties, experiences and interpretations of ideational constructs of urban cohesion varied. This difference between structural-spatial types yielded a variety of ideational frames. This finding provided yet another example of both pattern and diversity within a socio-economically similar sample of residents.

Forms of cohesion and social action: resident roles and social capital
The fifth and final research question centres upon delineating the consequences of the interplay between spatial, structural and ideational forms of cohesion, particularly for social capital and social action.

Different functions and distributions of social capital are activated in different types of resident ties (Coleman, 1988, 1990; Lin, 1999; Putnam, 2000). It has already been noted that within this sample of deprived areas, contrasts were found between homogeneous and socially mixed localities, for example, differences of residential homophily, structural-spatial cohesion and ideational frames. These variances between homogeneous and socially mixed localities were theorised as being linked to propensities for different functions of social capital within these localities. Bonding capital was most predominant in homogeneous localities, bridging capital was most associated with residents of the least deprived gentrified locality and linking social capital was found to be more prevalent in socially mixed areas.

The differential, or unequal, spread of bonding, bridging and linking ties acted to structure urban cohesion by affecting neighbourhood social capital and individual social action. Theories of thresholds and balance (Schelling, 1971, 1972; Granovetter, 1978; Massey, Durand & Malone, 2002) helped to understand how the social reproduction of dense and localised networks can

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become a structural norm in some localities. Within a locality where there is a prominent predisposition toward residential homophily amongst residents, this trend will catch on and continue until the social reproduction of residential homophily becomes self-sustaining. Of course, where social networks are dense and localised, the attitudes and practices of individuals connected in these closed neighbourhood networks may become collectively homogenised and normative. Conversely, too little bonding capital can be detrimental and risks cohesion within the locality (Durkheim, 1893/1933; Simmel, 1902; Festinger *et al*, 1950; Cartwright & Zander, 1960; Coleman, 1990; Putnam, 2000; Granovetter, 2005; Burt, 2005). Bridging ties connected spatially dispersed individuals and had an increased capacity to be non-redundant and connect to sources of novel information (Granovetter, 1973; Lin, 1986; Putnam, 2000; Burt, 2001; Lin, Cook & Burt, 2008). Linking ties served to unite individuals at dissimilar positions in social space so provided heterogeneity (Woolcock, 2001). A balance between different types of social capital is desired though not easy to achieve.

Another consequence of the interplay between forms of cohesion is the impact upon social action. The unequal distribution of social capital across urban space produces different resident roles and the thesis describes how urban cohesion is maintained through intersection between these functional roles within the space of the locality (Durkheim, 1893/1933).

Type A residents were at the centre of local cohesion, contributing to a gemeinschaft-type community (Tonnies, 1887/1957). These individuals provided a stable, dense core of bonding social networks within the locality that was robust and resistant to external influences, perhaps exhibiting signs of structural closure. They also provided ideational homophily and maintained bonds of emotional commitment, shared identity and long-term allegiance (Elias, 1974).

By nature of their spatially dispersed fragmented networks, Type C individuals were the most peripheral to local cohesion and focused upon pragmatic justifications of cohesion. These residents were urban oriented individuals (Keller, 1968) whose lives were conducted primarily in the mass society rather than being embedded in local spheres (Kaufman, 1952). Type C residents were therefore able to provide bridging social capital and bring new information and resources from other neighbourhoods into the locality.
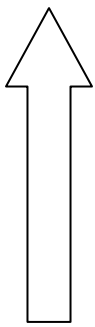
The third role was played by Type B residents whose combination of localised and dispersed networks was convenient to the performance of liminality between Type A and Type C residents (Turner, 1967). Type B residents were positioned between community and society and had both local and urban orientations. Since their social circles overlapped between social and spatial contexts, these residents were positioned between globalisation and belonging (Savage, Bagnall & Longhurst, 2005; Forrest, 2008). Theoretically, the role of Type B residents activated linking social capital and intersected between the most localised and the most peripheral residents in a locality.

The distribution of social capital in geographic space has consequences for urban cohesion. It is logical to consider the relational effect of resident networks within and between neighbourhoods because it is the balance or threshold of external ties against those that are residentially homophilous that is paramount to understanding opportunities for urban cohesion. The unequal distribution of bonding, bridging and linking ties creates different urban roles. Urban cohesion can be theorised as being held together by the overlap and intersection between these resident roles, which in turn is underpinned by the affiliations between network structure and ideations. It was argued that these complimentary role combinations work together in a functional way to provide the brokerage and closure required for urban cohesion, rather than distinct independent states of community and society (Gans, 1962; Bellair, 1997; Hipp, 2010).

Table 23 presents tentatively some qualitative associations between local homogeneity, deprivation and forms of urban cohesion as observed in the data and is presented with several caveats. The table is intended to merely represent non-generalisable observations not clear-cut social fact. Although most Type A networks were found amongst residents of the most deprived homogeneous localities, this was not true in all instances and there was some overlap between boxes. Although the findings may have some resonance for other deprived localities; concrete assumptions could not be made about the type of networks to be found beyond this urban sample. Rather than make generalised claims or investigate causality, the aim has been to clarify where and how spatial, structural and ideational forms of cohesion imbricate with

contextual factors of deprivation, homogeneity and class.[71] The purpose of the table is to relay an overt summative story of empirical observations made in this thesis.

Table 23: Qualitative associations between local homogeneity, deprivation and forms of cohesion

Deprivation rank of locality (relatively defined)	Deprived locality characteristics	Structural-spatial cohesion (network type)	Ideational cohesion (framing and role characteristics)
Highest ↑ Lowest	Homogeneous composition Predominantly white, lower-working class areas with high level of social housing and unemployment High residential homophily	Type A (localised-cohesive) Residents have similar network structures. Bonding social capital	Type A: Core roles, highly embedded in locality, emotional & defensive frames of urban cohesion. Attitudinal homophily produces normative constraints.
	Heterogeneous composition Predominately white working-class areas with some gentrification or social mix (class or ethnic)	Type B (median-diverse) Network diversity: vertical spanning across spatial and social groups Linking social capital	Type B: liminal roles Switching of ideational frames, multiple presentation of self Network instrumentalism
	Mix of internal and external social networks	Type C (dispersed-fragmented) Horizontal bridging social capital	Type C: Peripheral to local cohesion, pragmatic frames. Social reproduction of structural advantage

7.3 Substantive arguments and themes arising

Several major themes and arguments arose from the research. These have been mentioned throughout the thesis though this discussion was often subtle and placed secondary to the data. It is now suitable to allocate attention to each argument independently.

Contextualising the link between urban cohesion, deprivation and homogeneity

At the heart of the thesis is a sustained argument about the need for social networks to be analysed and interpreted in the time and space contexts in which they are embedded (Borgatti & Everett, 1999; Faust, 2006; Faust & Skvoretz, 2002; Entwistle *et al*, 2007). This raises questions

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[71] For example, networks of high structural and spatial cohesiveness (Type A) were found most often in the most deprived LSOAs, this was not to say that there were not instances of other network types found in the same locality. Indeed Type B networks were also observed (but not Type Cs).

about the validity of comparisons across contexts, particularly given the 'deprived' nature of the sample localities of this study. The thesis makes qualitative observations concerning the linkages between local deprivation, homogeneity and forms of urban cohesion (as summarised in Table 24), particularly drawing attention to the differences between homogeneous deprived and socially mixed deprived localities. The context specific nature of these findings warrants further discussion.

Context specificity may account for the discrepancy between the findings of this study and previous research on urban networks in other situations. This point is particularly relevant when assessing the results of this thesis against those claiming that urban personal networks have become spatially dispersed (Wellman, 1979; Frei & Axhausen, 2007; Bridge, 1995, 2002). Participants of this study had lived in the same local area for most or all of their lives and low population turnover was characteristic in all but one locality.[72] Consequently, capturing established, settled residents was an important part of the sampling strategy. These sampling criteria were not central to, or explicit in, other comparator studies. Accordingly, the type of residents and the comparison between contexts was not straightforward.

Actually, if we look toward context as a backdrop for interpreting patterns of cohesion there is consensus with other studies claiming that deprivation and class affects the density and localisation of personal networks (Bott, 1957, 1971; Laumann, 1973; Atkinson & Kintrea, 2001). More precisely, in other research conducted in deprived areas, studies have also found high structural and spatial cohesion of personal networks in homogeneous localities, compared with lower structural and spatial cohesion in socially mixed localities (Atkinson & Kintrea, 2001; Bécares *et al*, 2011). Arguably, deprivation and resident homogeneity provide a socio-spatial context that encourages or 'focuses' (Feld, 1981) resident relations within the locality (Greenbaum & Greenbaum, 1985).

The effects of deprivation and homogeneity upon urban cohesion in the United Kingdom may be particularly resonant for white residents living in homogeneous localities, as Bécares *et al* (2011: 13) claim 'our results show that, for White British people, an increase in the percentage of

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[72] As noted in the methodology, Moston has experienced notable population change following inward migration from Polish and African residents since the 2001 Census.

White British residents in an area translated into higher levels of social cohesion'. This increased ideational cohesion within homogeneous localities found by Bécares *et al* (2011) is supported in this study by observations of high residential homophily between white residents in homogeneous localities. However, the findings of this thesis do not make clear whether homogeneity/social mix or deprivation was influencing urban cohesion or did not outline the direction of a relationship, though it is likely that these factors are intertwined. As this research did not attempt to explicate causality it is difficult to disentangle the relationship between urban cohesion, deprivation, homogeneity and class. The best conclusion that can be offered from the data is that the unequal distribution of forms of cohesion between residents and localities was partly related to the contextual backdrop of deprivation and also to the extent of homogeneity or social mix in a locality.

We must also bear in mind that interpretation of social network measures and processes is a highly qualitative and contextualised endeavour. To this end, there have been calls for mixed-method social network analyses (Bellotti, 2008; Crossley, 2010; Edwards & Crossley, 2009). Rather than providing generalisations about urban networks it is hoped that the approach and findings of this study may draw attention to important spatial, structural and ideational forms of cohesion with attention to the contextual conditions in which they are embedded.

Structural inequality and distribution of capitals

As we have so far seen, there is much pattern and order to urban cohesion. Though different structural-spatial types and ideational frames were observed, the data exhibited pattern and regularities so could be analysed and organised in meaningful ways. Yet because patterns of social networks and ideations differed between residents and neighbourhoods, this diversity of structure also produced inequality. The different forms of urban cohesion were found to have consequences upon the distribution of neighbourhood social capital and resident social action.

There were several examples of structural inequality within the thesis, some reminders can be provided. Firstly, a core-periphery analysis of the city-wide network provided early indications of structural difference between LSOAs. Interconnectivity between 'core' localities was interpreted as interactive social closeness (Blau, 1977a). This was contrasted with a set of 'peripheral' locality actors for which social distance may have been related to the extent of

deprivation and/or social mix in these localities. Secondly, different network structures and roles were found within the sample with varying levels of structural, spatial and ideational cohesion. Some localities and residents were better able to mobilise bonding capital and sense of community and other more peripheral actors eschewed this type of cohesion in favour of bridging or linking ties and network diversity. Localised cohesive networks were found to be the most ideationally restrictive and habitually practiced because features of redundancy encouraged the social reproduction of closure, attitude consensus and normative practice (Burt, 1992; Lin, Cook & Burt, 2008).

It is clear that network and ideational structures of urban cohesion are imbued with social capital, yet social capital is not neutral or distributed equally (Edwards & Foley, 1998; Portes, 1998). The distributions of social capital in personal or neighbourhood networks impacted upon the access an individual had to other forms of capital (DeFilippis, 2001; Amin, 2005). Patterns of social reproduction within social networks may contribute to a hegemony that reinforces inequity between dominant and minority positions in social space (Bourdieu, 1986; Devine, 2004; Bottero, 2007; Bottero *et al*, 2009). These inherent structural differences between residents and localities were in some cases illustrative of the negative or dark side of social capital (Devine, 2004; Crossley, 2008; Fine, 2010, 2011).

Mobility and fluidity

Contrary to theories on the fluid, dynamic and liquid nature of contemporary relations (Bauman, 2000, 2007; Beck & Beck-Gersheim, 2000), these urban personal networks were relatively fixed in space and time. Though Massey (2005) argues that space is dynamic, interactive and complex and that much social capital literature either ignores space or treats it as static, in the everyday lives of our sample of residents the space of their networks was relatively stable and predictable. Most alters of North Manchester ego-residents also lived in North Manchester, indeed many lived in the same residential locality. The study also found extremely high proportions of localised kinship relations and long-term friendship ties.

The thesis findings suggest that maybe we need to re-think what constitutes 'fluidity' of social relationships. Fluidity, as theorised by proponents of the individualisation thesis (Bauman,

2000, 2007; Beck & Beck-Gersheim, 2000) suggests an equality of social action when in reality capabilities differ; those with more economic and cultural capital have increased capacities to lead mobile lives (Urry, 2000a, 2007). Not everyone could be or wanted to be physically mobile, and this was especially the case for Type A residents. There were different ways of conceiving social fluidity. Type C residents tended to have the most economic and cultural capital and also the most spatially dispersed social networks and it is likely that these individuals would have to be mobile in physical space in order to maintain these relationships. Conversely, the networks of Type B residents linked between vertically different social circles and created a requirement for these individuals to be ideationally mobile, so 'switching' between attitudes and practices. The findings in this study illuminate the distinction between fluidities stemming from physical mobility and social mobility.

The thesis illustrated the often habitual micro-level practices that sustain and reproduce spatial, structural and ideational cohesion. Chapter 5 illustrated how the attitudes and practices of residents created macro-level ideational frames, forming a 'conscious collective' (Durkheim, 1893/1933). However in most instances these interactions and ideations were not reflected upon by residents (Galaskiewiczs, 1996: 21; Bourdieu, 1984), for example, Chapter 3 uses social network analysis and narrative analysis to illustrate patterns of interaction and social distance resulting from social reproduction or habitual practices.

White (1992) focuses on ideational switching as resulting from the clashing and merging of social circles, arguing that individuals are constantly switching between network domains (net-doms). Yet capacities for mobility are not universal, instead network diversity is ordered unequally so that social actors face differential opportunities and constraints. Not everybody is free to switch. In a later paper co-authored with Anne Mische (Mische & White, 1998), a less stringent view of network narratives is taken, claiming that story-sets accompany tie-sets through time and space and that these are continually reflected upon. Yet reflexive narratives were not conventional in all situations of this research and still constancy must be more commonplace than switching for social order to be maintained. There must be some stability between network structures and narratives in order for normative attitudes and practices to form and some combinations of network and ideational structures produced more doxic and

habitual outcomes than others. Actually, the findings of this study suggest that network stability is more commonplace than network switching.

Micro-interactions and macro-effects: urban cohesion for agents and collectives

This study has highlighted interdependencies between micro and macro levels of network interaction and the consequences of these structures for urban cohesion. The thesis explores how activities in one local part of a network may have repercussions elsewhere (Moreno, 1934; Schelling, 1969, 1971, 1972; Massey, Durand & Malone, 2002; Christakis & Fowler, 2009). For example, how the micro-interactions of residents create macro-consequences at the neighbourhood level or how network ties at one spatial level affected outcomes at other spatial levels. These issues were highlighted through theoretical discussion of flows, thresholds and balance of resident networks and the implications this had for social capital. In particular, the proportion of internal bonding ties within a locality affected the capability to develop networks to external localities and so limited the potential to build bridging and linking capital.

Urban cohesion was not conceptualised as limited to the neighbourhood, instead the thesis analysed forms of cohesion within and between localities. It seemed that the generation of social capital within a locality may have been influenced by the wider neighbourhood in which the locality was embedded because of interdependencies between structure and agency. Additionally, combinations of resident social networks may have produced collective social capital benefits or constraints for those living within the residential locality (Putnam, 1995, 2000; Ferragina, 2010), yet these effects were not reducible to area effects. The amalgamation of social networks does not produce a summative outcome because these social interactions amount to more than the sum of parts. In this respect, spatial social capital is not 'the aggregate of the actual or potential resources' within networks (Bourdieu, 1984: 249), it is a measure of social structure itself (Coleman, 1994).

It is helpful to theorise the effects of multi-level flows, thresholds and balances of social capital, whilst recognising that the context of these networks may inhibit the development of some types of ties and create proclivities for others.

7.4 Methodological and theoretical innovation: redefining urban cohesion

I have been profoundly influenced by other academic studies of social networks in urban contexts, especially those highlighting the inequality and constraint effects of social structure. I hope, however, that I can claim some original contribution to knowledge in defence of this thesis.

Most studies of 'urban cohesion' focus separately on either network structure (patterns of relations between individuals) or ideations (attitudes and practices relating to urban cohesion). This methodological privilege has had considerable ontological ramifications as the study of urban cohesion has been divided between individualistic, variable-led analyses and relational data on defacto patterns of interaction. I also argued that spatial contexts are often side-lined in social network research. This creates several ontological and epistemological problems. Firstly, normative attitudes and practices are formed in the context of personal social networks and secondly, because social interactions between residents are physically embodied and constrained. It is in relation to these issues that I can provide some evidence of methodological and theoretical innovation. This thesis addresses this theoretical gap by using an innovative methodology and new data to combine relational, ideational and qualitative data to empirically analyse the interplay between spatial, structural and ideational forms of cohesion.

I am not aware of any other research conducted in the same way as the present thesis, particularly in the application of critical relational analysis to the study of urban cohesion. The method of this study is innovative in its use of mixed-methods. The research has attempted to broach the ideational-relational divide (Doreian & Fararo, 1998; Moody & White, 2003) by studying network structure and ideations together (Scott, 2007: 3; Kilduff, 2005: 10). This thesis has addressed this theoretical gap studying the interplay between spatial, structural and ideational forms of resident interaction. Moreover, it has acknowledged multiple levels of analysis, for example, between individual agents and collective structure, and also spatially between residents and neighbourhoods. Following Kearns and Forrest (2000), this thesis has offered a critical re-conceptualisation of 'urban cohesion' as relational, contextual and multi-

level, incorporating spatial, structural and ideational forms.[73] The research was conducted using a relational theoretical framework and a mix of methods to account for interdependencies between forms of cohesion, rather than independent analysis of these factors. Thus the thesis rejects 'community cohesion' or 'neighbourhood effects' models in favour of relational frameworks that conceptualise urban social networks and ideations as carriers of social capital within and between localities.

I hope this thesis has made a small contribution to the set of literature addressing the spatial composition of social networks in urban situations. Irwin & Hughes (1992: 44) argue that early binary measures of social network analysis were initially constructed to address social questions and were inappropriate for the analysis of urban systems, which encompass flows of reciprocity, hierarchy and inequality; however:

> In recent years several of these measures have been refined to accommodate the asymmetric, continuous flows of people and information across space, making them appropriate for the analysis of spatial structure and processes… We believe that the use of graph theoretic methods will enhance theoretical development in the arena of spatial processes.

To my knowledge, no other study of urban cohesion has combined network structure, spatial structure and ideational aspects of a resident sample in a similar way. I argue that the spatial dimension of urban cohesion is crucial, yet missing from a significant proportion of studies.

7.5 Practical implications and impact

The thesis may be of interest to urban researchers and policymakers interested in understanding a relational and multi-dimensional form of urban cohesion that goes beyond individual attributes and neighbourhood effects. Inequalities research is imbued with a philosophy of morality (Coleman, 1974), the themes of inequality and constraint have been central to this thesis as was the aim of applying social network analysis to critique structural difference. I hope that the findings may be valuable or have resonance for those wishing to understand better urban cohesion or social networks in deprived localities. It is argued that universal models of urban cohesion are limited because network and ideational structures are relational and context-specific; different types of ties are needed in different circumstances and

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[73] Forrest and Kearns (2000) make the claim that cohesion between residents is multi-dimensional and multi-level, but do not define the 'dimensions' or 'levels' for empirical analysis.

individuals and neighbourhoods have different capacities for activating the social capital in these ties. In deprived localities with homogeneous populations the social reproduction of dense localised networks was evident and residential homophily was habitually built at sacrifice of bridging or linking ties to external neighbourhoods. Subsequently, social networks with particular combinations of spatial, structural and ideational cohesion may be quite impervious to the social change required to overcome local urban problems such as poverty cycles, low levels of education, anti-social behaviour and unemployment.

Given the difficulties policy practitioners face in trying to diversify local populations through regeneration incentives and gentrification strategies, these ordered and stable social relations may not be easily altered. In instances where the disruption of local networks occurs, this can be extremely detrimental to local communities. In the Collyhurst case, distal ties were maintained over fifty years after a major slum clearance but residents of this locality had not built sufficient networks to bordering localities. Furthermore, given both the time lapse and the age of egos and alters, these networks were unlikely to be resulting only from long-term relations between older existing and re-housed residents. Rather, the social closeness, shared history and culture between these localities had resulted in a *spatial* reproduction of social interaction over time along relations of friendship and partnering even in younger residents. The thesis has argued that reciprocal ties between localities across urban space are manifestations of social closeness between residents, something that it perhaps difficult to strategically engineer through architectural planning. This has considerable implications concerning the nature of social change and how regeneration or gentrification may be easier to facilitate in some neighbourhoods than others.

7.6 Reflection: critical assessment of work

Despite careful consideration into the theoretical and methodological bases of this research there were inevitably some limitations arising, especially because the method and arguments of the thesis are complex.

The first limit is one of perspective. This thesis is admittedly structural and as a consequence opens itself to criticism for being overly reductionist. In writing this thesis, I acknowledged some potential for agency and the use of qualitative narratives demonstrate how individual

actions affect larger social structure as well as showing that institutional level structures impacting upon individual outcomes (Laumann, 1966, 1973; Bourdieu, 1986; Coleman, 1990, 1994; Giddens, 1990). Nonetheless, resident roles were carried out within the constraints of both network and ideational structures. Although there could be dark sides to social capital, structure in this thesis is not construed pessimistically because different forms of social networks, attitudes and practices create resident roles that contribute to the functioning of urban cohesion. Rather, structure is construed as a mechanism for social order with inherent elements of inequality.

There needs to be better analysis of the link between forms of cohesion and effects of deprivation, homogeneity and class. In support of Bott (1957) and Laumann (1973), some links were made between personal network structure, class and locality. In this study, individuals with the most spatially dispersed networks were mostly, but not always, of higher class groups and from the least deprived or socially mixed localities. Conversely, individuals with very localised and dense personal networks tended to be of lower class groups and/or residents of the most homogeneous deprived localities. The observations made in this study were qualitative and based on a small sample group so further investigation is required. Although class and locality are important in influencing both network structure and ideational constructs of residents, we must nonetheless take caution in claiming that neighbourhood or class effects are determinant because the patterns of relations underlying urban cohesion transcend neighbourhood boundaries and so urban cohesion is relational and not reducible to individual variables. Since the link between urban cohesion, deprivation and homogeneity is unclear and the direction of any relationship is unknown, further exploration of this issue is required.

I chose to study different forms of cohesion within a socio-economically similar sample. This allowed me to understand the diversity of forms of resident interactions, attitudes and practices as well as the structural order of these differences. One limitation is that there is no comparator case, the results of this study are limited to situations of urban cohesion in North Manchester. Perhaps similar results will be found in other deprived neighbourhoods and this would be a useful area in which to develop the research. This would be especially fruitful because some of the findings in this study contradicted previous research on urban social networks. I argue that the contrast in findings in this study is directly linked to the sample, focusing specifically on

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residents in deprived neighbourhoods was more likely to yield localised-cohesive networks than would a study of middle-class, mobile urbanites (Urry & Elliot, 2010). Although localities were important influences upon a resident's network structure and ideations (as were class and deprivation) and 'foci' for networks, they did not cause patterns of cohesion. It was more likely that patterns of resident cohesion were more complex. The combination of interdependencies between spatial, structural and ideational forms of cohesion operating against a particular socio-economic context underpinned the structure of urban cohesion exemplified in this thesis. This argument was derived inductively from the data and, again, requires further development and study. Further research on deprived urban areas is required to elucidate and support the findings of this study.

7.7 Future research and outlook

In addition to hopes of publications arising from this thesis, I am continuing research into social network structure and processes more generally. I am currently conducting applied social network research in public policy as a Research Fellow at Warwick Business School on a National Institute for Health Research (NIHR) funded project. The general conclusions from this thesis are informing my current epistemological and ontological stance, particularly with respect to interpreting network data in context and the critical use of Social Network Analysis in highlighting structural inequality and constraint. I also envision potential to develop synergies from my current research interests, for example, using social network analysis to explore the geographic patterning of health inequalities.

Summary

This thesis has investigated forms of cohesion in deprived urban localities. Making an original contribution to knowledge, it has revealed some key findings and raised some important substantive arguments. The findings may be summarised below.

There was much pattern and structure to the organisation of urban cohesion. The majority of personal networks were stable, long-term and fixed, not fluid and dynamic (Bauman, 2000, 2007; Beck & Beck-Gersheim, 2000). Social and geographic space were interrelated, geographic propinquity was underpinned by social motivations and worked differently in homogeneous

localities compared to socially mixed localities. In homogeneous localities propinquity effects were non-linear, often with high residential homophily, low interaction and social distance to bordering localities followed by an increase in ties at further distances.

Spatial and structural cohesion are related and most urban networks were localised and cohesive, not fluid or spatially dispersed. The highest structural-spatial cohesion of resident networks was found in homogeneous-deprived localities. This homogeneity acted to focus resident interactions and encouraged dense, localised networks (displaying as residential homophily and ideational homophily). Attitudes and practices relating to urban cohesion were constructed in the context of network structure. Since individuals of each network type drew on different types of social capital ties, experiences and interpretations of ideational constructs of urban cohesion varied. This difference between structural-spatial types yielded a variety of ideational frames.

The thesis uses the findings above to draw out some key arguments. The first argument is that to understand urban cohesion it is useful to develop relational contextualised theories of resident social networks and ideations that transcend neighbourhoods and contribute to the wider urban social structure. Urban cohesion is conceptualised as resulting from social networks and ideational structures imbued with social capital, which exists both within and between neighbourhoods. Moreover, these network and ideational structures are distributed unequally leading to residents and localities having differential capabilities, circumstances and 'positions' in social space.

The findings call into question the individualisation thesis and assumptions of mobility and fluidity in modern social relations. Balances and thresholds of social capital are not determined individualistically but stem from collective contributions to social structure. Individuals were not free to construct fluid and dynamic ideational frames and roles, rather these were habitually co-constructed in the context of network structure. Even those with the most spatially dispersed, low density networks were not behaving atomistically, they contributed to, and were influenced by social structure.

The findings also contradict arguments that contemporary urban social networks have become spatially dispersed (Wellman & Leighton, 1979; Blokland *et al*, 2003; Frei & Axhausen, 2007), but

supports research on the association between structural and spatial cohesion of resident networks under conditions of homogeneity in deprived neighbourhoods (Bott, 1957; Laumann, 1973; Greenbaum & Greenbaum, 1985; Atkinson & Kintrea, 2001; Bécares *et al*, 2010). Context is important for interpreting networks of cohesion (Faust, 2006) and it was argued that divergences from other literature may have been related to the specific 'deprived' nature of this sample. Since high structural and spatial cohesion of personal networks was found in deprived localities with little or no social mix, it seems that population homogeneity in deprived neighbourhoods acted to 'focus' relations between residents into being dense and localised (Feld, 1981). This also led to questions about the relationship between geographic and social space, particularly how geographic propinquity, social distance and residential homophily worked differently in socially mixed localities compared to homogeneous localities.

Urban cohesion can be theorised as being held together by the overlap and intersection between resident roles underpinned by the affiliations between network structure and ideations. These complimentary combinations work together in a functional way to provide the brokerage and closure required for urban cohesion. An analogy was made between theories of community and society with network theory on brokerage, closure and forms of social capital. Finding evidence of these different roles suggests that community has not been lost, but it takes different forms for different residents. For some, community is based on local social bonds, shared identity, trust and longevity. For others with more dispersed networks, the locality provides a functional purpose and community may take a more fluid form and even transcend space.

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Appendices

EGO AND ALTER COMPOSITION TABLES

Composition of survey egos (n=409)	
Age (years)	Min 16 Max 67 Mean 31.86
Gender	Male (45.2%, n=185) Female (54.8% (n=224)
Locality	Middleton (14.9%, n=61) Blackley (14.7%, n=60) Collyhurst (13.4%, n=55) Crumpsall (13%, n=54) Harpurhey (12%, n=50) Moston (10.8%, n=44) Prestwich (10.5%, n=43) Cheetham Hill (10%, n=42).
Occupational class	Unemployed (35.7%, n=146) Elementary occupations (29.5%, n=121) Sales and customer services (15.6%, n=64) Skilled trades (8.3%, n=34) Administrative (7.8%, n=32) Associate professional and technical (2.7%, n=11) Students (0.2%, n=1)
Ethnicity (% white)	100%

No missing cases

Composition of interviewees (n=53)	
Age (years)	Min 17 Max 64 Mean
Gender	Male (37.7%, n=20) Female (n=33)
Locality	Middleton (28.3%, n=15) Blackley (26.4%, n=14) Collyhurst (22.6%, n=12) Prestwich (22.6%, n=12).
Occupational class	Unemployed (35.8%, n=19) Elementary occupations (32%, n=17) Sales and customer services (7.5%, n=4) Skilled trades (11.3%, n=6) Administrative (5.7%, n=3) Associate professional and technical (7.5%, n=4) Students (0%)
Ethnicity (% white)	100%

No missing cases

Composition of alters (n=2,018)		Increase/Decrease from ego sample
Age (years)	Min 16	
	Max 77	+
	Mean 34.08	+
Gender	Male 41.6%	-
	Female 58.4%	+
Occupation	Unemployed (24.4%, n=493)	-
	Elementary occupations (22.7%, n=459)	+
	Sales and customer services (12.9%, n=260)	-
	Skilled trades (6.4%, n=129)	-
	Administrative (7.2%, n=146)	-
	Associate professional and technical (14.1%, n=285)	+
		+
	Students (7.3%, n=147)	n/a
	Retired (4.9%, n=99)	
Ethnicity (% white)	89.2%	
Tie type	Partner (7.7%, n=155)	
	Family (32.7%, n=660)	
	Friend (44.5%, n=898)	
	Neighbour (4.8%, n=97)	
	Work-mate (9.9%, n=200)	

Missing =8, tie-type.

PCA extraction method

As part of the analysis of Chapter 5, a Principal Components Analysis (PCA) was undertaken to identify a set of latent ideational components from survey responses on attitudes and practices to urban cohesion. [74] The aim was to understand how the spatial and structural cohesion of personal networks (identified in Chapters 3 and 4) were related to ideational indicators of urban cohesion.[75]

The PCA was undertaken to simplify resident attitudes and practices into a smaller set of ideational constructs, which could then be used for analysis alongside qualitative data. As an example, the questionnaire results of this study demonstrated that, overall, people had positive sentiments toward their locality. Aggregate responses indicate that, across all localities, high proportions of residents agreed with the following individual statements: 'this is a good area' (59.2%), 'most residents can be trusted' (67.6%) and 'I enjoy living in this area' (76%). Also, around two-thirds of interviewees expressed contentment with the area in some verbal form or another. This type of generalised, aggregate level analysis was misleading because it obscured heterogeneity between residents. , As identifying diversity between residents in this socially similar sample was a central research aim, this required further exploration. In this example, we see agreement from individuals with all three network typologies on a single variable, though the narratives reveal different justifications for 'liking' their local area:

Tara: I like Blackley and wouldn't change it. (Type B)

Julia: I like living here. (Type C)

Dylan: I like Langley, I suppose it's because that's all we know. (Type A)

It became evident that a single attitude or practice could be socially constructed, or 'framed', in different ways by different people. This observation generated a point of interest, which was to identify whether the framing of attitudes and practices relating to cohesion was linked to personal network structure. That is, were ideations constructed in the context of personal

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[74] The definition of 'component' here relates to the latent ideational categories produced by a PCA analysis and is different from network structural components in the previous chapter.

[75] Though data from all resident-respondents was used for the PCA, only the interview data could be used to analyse the link between ideational cohesion and structural-spatial cohesion because only the interviewee networks had been used for the structural-spatial typology for reasons already described.

networks?   It was therefore necessary to condense the survey variables into a set of latent components.

Despite being a data reduction procedure, it was hoped that the PCA method might provide further depth to the data. This is chiefly because single variable analysis would have concealed any underlying latency between the ideational cohesion factors. There are issues with the reliability and cognitive interpretations of single-response items; agreement with one specific variable cannot necessarily be taken as evidence of more complex or general categories such as sense of community, local embeddedness or neighbourhood satisfaction. Though identification of latency, Principal Components Analysis can actually add depth and clarity to understanding people's response patterns, especially so when combined with narrative analysis. It was decided that latent ideational components alongside narrative and social network analysis would offer a more intuitive and nuanced understanding of multi-variable categories than would reports of individual attributes.

The data reduction procedure of the PCA was deemed as a suitable method from which to critically analyse urban cohesion. The components would reveal how ideations are related and provide some indication of how resident attitudes and practices were structured. These ideational constructs could then be further explored in relation to the structural-spatial typologies and qualitative narratives. Below are the results of the PCA to support the data used in Chapter 5.

Two exploratory test were conducted to supported the execution of a Principal Components Analysis. The estimated Kaiser-Meyer-Olkin (KMO) statistic of sampling adequacy was sufficiently high 0.747. Also the Bartlett's test of sphericity was used to test the null hypothesis that the variables in the population correlation matrix were uncorrelated, the strength of the relationship among variables was strong (p=0.000) and the null hypothesis rejected.

The PCA was executed as a multivariate technique in SPSS to optimally extract associated variable aggregates into significant components, taking into account the variability between all variables by performing a variance-maximising (varimax) orthogonal rotation of the variable space. Each of the egos was given a component score for each dimension identified (Anderson-Rubin scores). To test the robustness of the analysis, the PCA was executed several times with minor changes to the variable inclusions and changing the number of specified components.

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Where a variable had an acceptable loading on more than one component, a rotation of the solution was undertaken to resolve this or the variable was accepted as belonging to the component with the highest loading (de Vaus, 2007). Statistical variance scores revealed the degree to which various items were correlated to one another and to what extent they address latent dimensions.[76] Variables with low communality loadings on components or loading relatively equally across more than two components were disregarded and the PCA re-executed. Consequently, three variables were excluded (*'area has improved over the past 10 years'*, *been the victim of crime'* and *'friends/family have been the victims of crime'*) and do not feature in the final PCA matrix solution.

Table 25: Rotated principal component matrix loadings solution [a] and communality estimates

Variable	h ^{2}	Component				
		1	2	3	4	5
1. Mostly feel safe in this area	.624	.713	.283	-.145	.057	-.106
2. This is a good area	.604	.701	-.103	.021	.300	.110
3. Area has quite a low crime rate	.544	.682	.134	-.009	.245	-.033
4. Enjoy living in this area	.591	.656	.052	.117	.213	.316
5. Most residents can be trusted	.529	.628	.070	.064	.344	.087
6. Went to a local school	.727	.017	.840	.003	.004	-.146
7. Lived in area for most of life	.675	.004	.803	.061	.093	.132
8. Know lots of people in this area	.549	.075	.674	.227	.112	.159
9. Got a job through network contacts	.771	-.035	.188	.852	.042	-.083
10. Hear about jobs through network contacts	.604	-.048	.139	.726	.234	.023
11. Worked locally	.574	.109	-.043	.722	.046	.191
12. Most residents share the same values as me	.603	.366	.010	.150	.668	.032
13. Know and like neighbours	.398	.043	.129	.176	.589	.042
14. Feel belong to this area	.612	.449	.209	.007	.500	.341
15. Member of a local club or team	.650	.167	-.023	.111	-.326	.709
16. Shop locally	.575	.098	-.006	-.069	.359	.657
17. Go to a local pub	.392	.007	.315	.150	.224	.469

Extraction Method: Principal Component Analysis.   Rotation Method: Varimax with Kaiser Normalization.
[a] Rotation converged in 7 iterations.

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[76] Using listwise exclusion of cases.

The component matrix (Table 25) shows the final PCA solution and the strength of each variable in defining the component. Both the eigenvalues and the scree test argued for the extraction of five components with eigenvalues over one. The five factors accounted for a cumulative variance of 58.96% (see Table 27). The scree test results confirmed this showing a significant drop off at component four and levelling out from the fifth component point. Given the scree result and the low loading of only 1.01 onto component five, a new PCA was executed requesting extraction of only four components. However, the result was unsatisfactory as some variables failed to load substantially on to any component, the communalities had been reduced and the solution made less sense substantively. The variables of component 5 suggested participation in civic activities (*shop locally, member of a local club or team, go to a local pub*). It was estimated that this component was not strong or reliable because, given the nature of the localities and local facilities, many respondents would not have been able to respond positively to these variables. Several neighbourhoods did not have local shops and pubs had closed down. Given these considerations, a final five component solution was settled on, though the fifth component was thought to be rather weak and so has been excluded from analysis and discussion in Chapter 5.

Table 26 : Principal Component Transformation Matrix

Component	1	2	3	4	5
1	.646	.359	.305	.489	.349
2	-.576	.599	.551	.026	-.069
3	-.083	-.697	.688	.069	.171
4	-.274	.037	-.203	-.195	.919
5	-.412	-.160	-.296	.847	-.002

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The final component solution shows considerable communality (h^2) estimates for all but two variables. Additionally, there are at least three high loading variables within each component above the strict 0.5 acceptability level (Comrey, 1973; Kaiser, 1974; Kline, 1994; Miller *et al*, 2002).[77] All variables fall into clearly defined single components with the exception of *'feel belong to this area'* which loads quite equally across two components (although slightly higher on component four).

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[77] Only contributions above 0.5 are included here although some argue that critical values for interpreting component loadings can be from the 0.4 threshold (Stevens, 1992).

Table 27: Total Variance Explained for PCA solution

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.960	23.293	23.293	3.96	23.293	23.293	2.685	15.796	15.796
2	2.307	13.573	36.866	2.30	13.573	36.866	2.137	12.573	28.370
3	1.592	9.366	46.232	1.59	9.366	46.232	1.961	11.538	39.908
4	1.153	6.785	53.017	1.15	6.785	53.017	1.725	10.145	50.053
5	1.010	5.938	58.956	1.01	5.938	58.956	1.513	8.903	58.956
6	.942	5.543	64.499						
7	.832	4.893	69.391						
8	.760	4.471	73.862						
9	.707	4.158	78.020						
10	.630	3.708	81.728						
11	.597	3.512	85.240						
12	.533	3.137	88.377						
13	.503	2.958	91.336						
14	.487	2.863	94.199						
15	.393	2.314	96.513						
16	.308	1.809	98.322						
17	.285	1.678	100.000						

The agreed solution was explored through substantive interpretation of the latency underlying each component, with reference to the diagnostic statistics and estimated correlations table on which the PCA was constructed[78]. The ideational components were named as follows:

Component 1: General neighbourhood satisfaction

Component 2: Local embeddedness

Component 3: Informal access to jobs

Component 4: Sense of community

Each PCA component formed an ideational construct for further discussion and analysis in Chapter 5. Each survey respondent was allocated an Anderson-Rubin score, as an output of the PCA, indicating their alignment on each ideational component (Anderson & Rubin, 1956; DiStefano et al., 2009). Ideational cohesiveness was assumed for residents with similar scores on a component. Similar ideational alignment was thought to reveal social closeness between individuals, whereas differences in ideational scores may point to social distance.

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[78] Component 5 has been excluded as discussed.

Table 24: Qualitative relationship between typological and ideational structures

Typological structure	Ideational descriptive	Related components (high scores)
A: Localised-cohesive n=25 Very low spatial dispersion and very high density	Doxa, strong, taken-for-granted assumptions and norms. Emotionally and practically embedded in locality.	C1: comparative assessment of neighbourhoods, defensive, normalised justifications. C2 & C4: local history, residential legitimacy, racism /scapegoating. Community, freedom and security C3 : unconscious, non-instrumental, gendered dimension, habitus.
B: Median-diverse n=19 Median density with median spatial dispersion	Ideational diversity: pragmatic and functional components Network diversity: class and spatial linking. Switching	C2: brokerage, status, conflict C3: conscious of network opportunity, agency, 'I did this', action planning, strategists, transforming social capital, aspirational.
C: Dispersed-fragmented n=8 Very low density and very high spatial dispersion	Pragmatic, reflexive. Low embeddedness and sense of community.	C1: comparative assessment of neighbourhoods. Justification-rational, functional, objective/subjective C3: Employment opportunities arose naturally from homogeneous networks, without having to look/ask, accidental, coincidental. Agreed norms for job-search/networking, habitual practice.

Component 1: General neighbourhood satisfaction; Component 2: Local embeddedness,

Component 3: Informal access to jobs; Component 4: Sense of community.

1. YOUR SOCIAL NETWORKS

Who are your most important contacts?

Please think about up to 5 ADULTS who you SEE MOST OFTEN in your SPARE TIME.
This includes family and friends. Fill in the details below.

You only need to give first names or an initial. We are not interested in who these people are -   just how similar or different they are to you.

PERSON 1:

Name or initial:	**M /F:**
Lives in (if Manchester, name local area):	Ethnicity:
Age:	Years known:
What is their job? (N = if not working, r = retired):	
How often do you see this person?	

PERSON 2:

Name or initial:	**M /F:**
Lives in (name local area):	Ethnicity:
Age:	Years known:
Job (N = if not working, R = retired):	
How often do you see this person?	

PERSON 3:

Name or initial:	**M /F:**
Lives in (name local area):	Ethnicity:
Age:	Years known:
Job (N = if not working, R = retired):	
How often do you see this person?	

PERSON 4:

Name or initial:	**M /F:**
Lives in (name local area):	Ethnicity:
Age:	Years known:
Job (N = if not working, R = retired):	
How often do you see this person?	

PERSON 5:

Name or initial:	**M /F:**
Lives in (name local area):	Ethnicity:
Age:	Years known:
Job (N = if not working, R = retired):	
How often do you see this person?	

* What is the relationship between you and these people?

You can select more than one answer per person (i.e. if your friend is also your work-mate, tick both).

	Partner	Family	Friend	Neighbour	Work-mate
Person 1	☐	☐	☐	☐	☐
Person 2	☐	☐	☐	☐	☐
Person 3	☐	☐	☐	☐	☐
Person 4	☐	☐	☐	☐	☐
Person 5	☐	☐	☐	☐	☐

* Which of your friends know each other? (tick the boxes if they do)

	Person 1	Person 2	Person 3	Person 4	Person 5
Person 1		○	○	○	○
Person 2			○	○	○
Person 3				○	○
Person 4					○

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2. YOUR LOCAL AREA

We would like to know your experiences of the local area. By 'local' we mean areas within a five minute drive.

To what extent do you agree or disagree with the following statements?

	Agree	Mostly Agree	Mostly Disagree	Disagree
I enjoy living in this area	○	○	○	○
I have HEARD ABOUT jobs through my contacts	○	○	○	○
I have worked locally	○	○	○	○
I went to a local school	○	○	○	○
I have lived here for most of my life	○	○	○	○
I GOT a job through my contacts	○	○	○	○
I have been the victim of local crime (theft, violence, anti-social behaviour etc)	○	○	○	○
My friends/family have been victims of local crime	○	○	○	○
I know lots of people in this local area	○	○	○	○
Most residents share the same values as me	○	○	○	○
Most of the time I feel safe in this area	○	○	○	○
Overall, most residents can be trusted	○	○	○	○
This area has improved over the past 10 years	○	○	○	○
This area has quite a high crime rate	○	○	○	○
I feel that I belong to this area	○	○	○	○
This is a good area	○	○	○	○
I have lived outside of this area	○	○	○	○
I shop locally	○	○	○	○
I go to a local pub	○	○	○	○
I am a member of a local club or team (sports, voluntary, social, community etc)	○	○	○	○
I know and like most of neighbours	○	○	○	○

3. ABOUT YOU

We want to find out how similar (or different) your contacts are from you.
** PLEASE COMPLETE ALL SECTIONS

Please fill in the details about yourself:

Name:	**M / F:**
Live in (name area of North Manchester):	
What is your job? (write 'N' if unemployed, 'R' if retired): If RETIRED, what type of work did you do before retiring?	
Age:	
Highest educational qualification? (write 'N' if no formal qualifications):	
Ethnicity (i.e. White, Black, Asian, Mixed, Chinese etc):	

Thank you for taking part in this research.
Please return this questionnaire in the FREEPOST envelope provided.

<u>Structured Interview Procedure:</u>

Interviews will be with North Manchester residents and will last about 1 ½ hours.

Materials:

A3 paper, Pens, Markers (black, red), Highlighters (yellow, pink, orange), Dictaphone
Consent form, Participant details form, Name generator questionnaire.

<u>Before beginning the interview</u>
- Make the person feel comfortable and at ease (explain the process briefly, stress it will be informal and relaxed).
- Tell them that you will draw the network (some people might have spelling difficulties).
- Mention that the interview will be tape recorded so that we can listen back to check that everything was
- Ask if person has any questions.
- Get consent form signed off, complete personal details form – you may be able to fill in most of this beforehand.
- Assurance of confidentiality and right to withdraw at any time.

The interview process will involve individuals thinking about their personal networks in novel ways. This will involve both conceptual and spatial categories of organisation (i.e. cliques/clusters) and also considerations of the instrumental nature of each network contact.

<u>Aim:</u>
1. Mapping social networks (establish whether contacts are local or dispersed, homophilous,
2. Discussion of social networks, space, identity, diversity, social distance, attitudes, instrumentalism (what resources /information is carried) and how well (or if at all) ego can access these resources (i.e. transform network tie into social capital).

1. <u>Mapping Social Networks (BLACK MARKER)</u>

    a. Take a large sheet of A3 paper and write the person's name on the back, with the date of the interview.
    b. Start the dictaphone recording.
    c. Ask the interviewee to think about and draw their 'social circles' (adults only – over 16) using the prompts on the NAME GENERATOR questionnaire (i.e. home, work and play spheres) – *who have you met from working? Who have you met from clubs/teams? Did you meet anyone from going out? Neighbours?*
    d. Write down the first name & surname initial of each contact mentioned – Sue C.

    e. Also write job of each person – role specific (i.e. if they say, 'she works at Sainsbury's', we need to know if she is a manager or cashier).

    f. GENDER - If there are any gender ambiguous names/nicknames – clarify sex (write M/F next to any you were unsure of).

    g. Where two people know each other connect them with a line.

    h. If everyone in particular groups know each other - draw a circle around those names to identify who is in the group (ie. if all workmates know each other).

    i. Draw circles round groups that know each other in overlapping segments (i.e. if some workmates also know some social mates) or connect the group circles with a line.

    j. Use the name generator to colour-code and classify contacts.

    k. This section may take 45-60 minutes.

Alter level data:

Socio-economic/socio-demographic:
1. Residential location
2. Age
3. Gender
4. Occupation
5. Years known
6. Frequency of communication and method (face-to-face, electronic, telephone etc)*
7. Relationship (immediate family, in-law, co-worker etc).
8. How met *
9. Instrumentalism – (constrainers/enablers) access to resources, reciprocal/non-reciprocal resource flow* (are enablers also gatekeepers/brokers?).

	NAME GENERATOR QUESTIONNAIRE NORTH MANCHESTER SOCIAL NETWORKS PROJECT	
Name:		Date:
Interviewer:		

A.   GROUP MEMBERSHIPS, SOCIAL CIRCLES & CLIQUES

I'm going to ask some questions that will help us draw your social circles.

For each person write name (Sue C) and job (U=unemployed).

1. **HOUSEHOLD**:   Q. *Who lives with you?*

2. **FAMILY**   – who knows who? (some may be in-laws who do not know blood relations). Circle groups that know each other.

3. **WORK**

 Who do you work with?   Do they all know each other? Are these people all based in the same office/place?

4. **CLUBS/TEAMS** (football, voluntary, social club etc)

Q. Are you a member of a team/club? (football, voluntary, social, charity, neighbourhood etc)
        YES   NO

FIRST Club / team details...

....

Who do you know from this club / team? (add to diagram)

**Do all these people know each other*? (circle/connect)

SECOND Club / team details..

Who do you know from this club / team? (add to diagram)

***Do all these people know each other*? (circle/connect)

5. **FRIENDS**

Who do you go out with often? (go shopping, to the pub, see a film, to a restaurant).

** Do any of these people know each other?

6. OTHER **IMPORTANT** people not listed – where do they fit? Who do they know?

** Make sure you have accurately checked who knows who. Check the diagram looks right to the participant.

B.   **NETWORK RESOURCES**

I'm going to ask you about what type of help you can get from your contacts. If you think of someone who hasn't been listed – we can add them to the diagram. (If a new person is listed – check if they know anyone else).

SOCIAL SUPPORT (= S)

1. Of all the people you know, who do you go to for help with day to day things? (looking after your children, lifts in car, DIY, food shopping, cleaning etc).

……

……

EMOTIONAL SUPPORT (= E)

2. Who would you turn to if you were upset about something? (i.e. had an argument with someone, split up with partner, suffered a bereavement).

……

………

ADVICE   (=A)

3. Who could you go to for advice on important matters? (money matters, health, legal issues)

………

……

INFORMATION BRIDGES (= I)

3 Employment - Who do you think could give you information or help with finding work?

………

………

PROMPT: How would you go about looking for a job? Would you use your networks or not? Jobcentre, public/private employment agency, direct employer, personal contacts in industry?

………

………

PROMPT: who has contacts, business knowledge, point you in the right direction, help you fill in an application form?

………

………

** Do any of these people know each other?

4. Suppose you need to get something done, which you couldn't do through normal official channels. Who could you ask for help? For example:

a. getting a promotion, getting your child into a particular school…………………………………………..

b. extra work, cash in hand work, foreigners……………………………………………………………………..

c. mates rates jobs………………………………………………………………………………………………….

5. Is there anyone you know that could be in a position to help you, but maybe you wouldn't ask? (i.e. don't know them well enough - friends of friends, acquaintances?)

WHO? (DON'T MARK ON DIAGRAM)…………………………………………………………………………….

PROMPT: IS ANYONE MISSING FROM THIS NETWORK? WOULD YOU LIKE TO ADD ANY OTHER NAMES?

C.   DIVERSITY & HOMOPHILY: **(**Geog diversity assessed in analysis)

The aim of this next section is to see how similar or different your contacts are. You can add extra people if you think of them. (If a new person is listed – check if they know anyone else).

ECONOMIC & EDUCATIONAL DIVERSITY:

1. Do you know anyone who:

- Has had serious problems getting a job? (highlight yellow)

- Is worse off (money-wise) than you? (highlight green)

- Is well-off? (highlight pink)

- A professional by education (i.e. a doctor, university lecturer, solicitor, teacher) = P

- Holds a position of civic authority? (councillor, MP, judge, Policeman) = C

- Who would you say is the most powerful person/people you know? Why? = highlight Orange)

** If NO to any of the above – ask why they think they don't know this type of person.

ETHNIC/RACIAL DIVERSITY:

2. *'Are any of these people NOT white?'*

3. Do you know anyone who is:

- Black / Black-British? (= B)

- Asian / Asian-British? (= A)

- Mixed race? (=M)

- Chinese? (=C)

** Who? How did you meet them? Add to diagram.

** If NO to any of the above – ask why they think they don't know this type of person.

SOCIO-ECONOMICS

4. AGE - Ask 'who is under 30?' – put a red dot next to all these people.

5. RESIDENTIAL LOCALITY – most people are likely to live in the same area as the interviewee (i.e.   household, neighbours), so the quickest way is to ask:

'Who doesn't live in the same local area as you?'

Write down the area name next to each person's name (normal pen). You can write this short-hand and fill in properly later (i.e. Liv, Bla, Mid etc).

6. OCCUPATION - check all done.

7. GENDER - check ambiguous names clarified (M/F)

D. SOCIAL DISTANCE & ATTITUDES

This section of the interview is less structured. We are looking for the participant to explain things in their own words and will use these descriptions to better understand how our attitudes are affected by our social networks. Try and let this section flow like a chat if you can, but steer the respondent into answering the questions. With experience you could also drop in some of these topics/questions during the network mapping section (i.e. when asking about people's jobs – you could talk about employment) – otherwise, just ask the questions in the last 30 mins.

PROMPT: This section explores your social attitudes. Try and answer as honestly as possible.

Background information on Ego
- household, occupation, geographic mobility through life, marital status.
- Housing and Neighbourhoods (areas lived in since leaving home, feelings about them, housing type, plans to move, if could move – where to?)
- Current job (was anyone involved in helping you/your family members find jobs?).

Identity and Space
- do you think that there are distinctions/tensions between different classes or cultural groups in Manchester/this area?
- Network diversity (class) – class-wise, are most people you know of the same class or not?
- Are there any neighbourhoods that you especially would NOT like to live in? Why?
- Spatial knowledge cards: do you know anyone living in (neighbourhood/place)? Have you heard of (place)? What do you think of (place)?

Class, employment, ethnicity and social distance attitudes

Is there a problem with unemployment in this area? What do you think are the causes?

Which types of people suffer the most? (the unemployed, those who work and pay taxes, those who are unable to work (i.e. sick), young people, under-qualified/over-qualified etc).

Do you think is it hard for people to get jobs?

How much do you agree with the phrase 'it's not what you know, it's who you know?'

Do you agree with the governments that people of different ethnic groups should live in the same neighbourhood? Does this work? Or is it better that neighbourhoods are made of similar people?

Does this also apply to class – i.e. people live in areas with others of the same class? Marry similar people?

Do you have any additional comments?

MANCHESTER 1824

The University of Manchester

Dear Sharon,

Re: University of Manchester -

Thanks you for offering to take part in our study.   As discussed, your research meeting has been booked.

Date: Wednesday, 16th December at 10:00am.
Place: Compleat Internet Café, Middleton

The café is under the walkway between NatWest bank and Lord's butchers shop. The research interview will take place on a one-to-one basis in a private room. Please ask for me when you arrive.

I have enclosed a consent form. I would be grateful if you could complete and bring this to the meeting. It will save time on the day. You do not need to do anything else in advance.

Should you need to cancel your appointment, I would be grateful if you could call or text me directly on 0778 303 6925.

I look forward to meeting with you.

Kind regards,

Daniela D'Andreta
PhD Researcher – University of Manchester.

CORRELATIONS AND TESTS OF ASSOCIATION BETWEEN EGO RESIDENTIAL LOCALITY AND ALTER VARIABLES

There were some weak correlations between ego residential locality and the range of alter variables. See below.

ALTER AGE BY ALTER RESIDENTIAL LOCALITY

We may consider whether there was any response bias effect on the spread of alter age scores resulting from ego's residential locality. In other words, did egos from particular localities name younger alters more frequently than older alters, and vice-versa?

Table 29: Central tendency statistics for alter age

N	Valid	2018
	Missing	0
Mean		34.08
Median		30.00
Mode		19

The mean alter age for the total sample was 34.08 and this did not differ widely between localities (means of between 34.06 and 38.82). The standard deviations for alter age are similar across all localities, with a mean of 14.78 years. The descriptive statistics show relatively stable distributions of alter ages across ego residential localities. This means that alter age was spread rather equally so that the age composition of alters did not vary widely by locality.

Table 30: Distribution of Alter age drawn from each category of ego residential locality

Ego's residential locality	Mean	N	Std. Deviation
Middleton	37.29	266	15.027
Blackley	36.14	252	15.141
Moston	30.34	248	13.405
Harpurhey	30.08	296	13.438

Collyhurst	38.33	230	14.854
Prestwich	33.82	260	13.696
Crumpsall	33.97	228	15.019
Cheetham Hill	34.06	238	15.577
Total	34.08	2018	14.782

No missing

There was a weak, negative correlation between alter age and ego's residential locality, which was statistically significant at the 0.01 level (2-tailed), r_s = -.121, P = .000.

Table 31: Non-parametric correlation between variables alter age and ego residential locality

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Spearman Correlation	-.121	.023	-5.245	.000[c]
N of Valid Cases	2018			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

OCCUPATION OF ALTER BY EGO'S RESIDENTIAL LOCALITY

There was a very weak, positive correlation between occupation of alter and ego's residential locality, which was statistically significant at the 0.05 level (2-tailed), r_s = .048, P = .037).

Table 32: Non-parametric correlation between variables alter occupation and ego residential locality

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Spearman Correlation	.048	.023	2.084	.037[c]
N of Valid Cases	2018			

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Spearman Correlation	.048	.023	2.084	.037[c]
N of Valid Cases	2018			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

RELATIONSHIP OF EGO TO ALTER (TIE-TYPE) BY EGO'S RESIDENTIAL LOCALITY

A chi-squared test was used to test the dependency between two categorical variables, alter tie type and ego's residential locality. The degrees of freedom and significance value of the chi-square test suggests that the variables are related. However, the reliability of the test is compromised because 3 cells have a count of less than 5. A low Cramer's V statistic (.097, P =.001) showed a low strength association between the variables.

Table 33: A Chi-squared test of association between alter tie-type and ego residential locality

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	69.183[a]	28	.000
Likelihood Ratio	73.848	28	.000
Linear-by-Linear Association	3.118	1	.077
N of Valid Cases	2010		

a. 3 cells (7.5%) have expected count less than 5. The minimum
expected count is 1.45.

Social network and socio-demographic variables for resident interviewees								Interviewee network structure & composition		
ID	Occupation	Occup class	Occup code	Occup class	Age	Loc code	Locality	N_comp	SD	Densi	Typol
1	Environmental assessor	1	1	Prof	38	4	Prestwich	5	0.750	0.099	C
2	Cleaner	3	5	elem	35	3	Collyhurst	1	0.130	0.524	A
3	Unemployed - disability	4	6	unem	41	2	Blackley	3	0.545	0.196	C
4	Unemployed	4	6	unem	20	1	Middleton	1	0.000	0.615	A
5	Legal secretary	2	2	admin	22	4	Prestwich	3	0.624	0.154	C
6	Unemployed	4	6	unem	36	2	Blackley	2	0.594	0.346	B
7	Barmaid	3	5	elem	32	1	Middleton	2	0.050	0.2	--
8	Insurance sales	2	4	sales/cust	30	4	Prestwich	3	0.774	0.138	C
9	Unemployed	4	6	unem	33	1	Middleton	1	0.000	0.799	A
10	unemployed	4	6	unem	41	1	Middleton	1	0.125	0.5	A
11	Labourer	3	5	elem	19	3	Collyhurst	1	0.060	0.82	A
12	Unemployed	4	6	unem	34	3	Collyhurst	1	0.370	0.46	B
13	Unemployed	4	6	unem	56	3	Collyhurst	1	0.000	0.716	A
14	Catering - burger van	3	5	elem	32	1	Middleton	1	0.152	0.62	A
15	Unemployed (cake decorator)	4	6	unem	29	2	Blackley	1	0.250	0.686	A
16	Checkout assistant	3	5	elem	33	4	Prestwich	1	0.663	0.184	C
17	Painter & decorator	3	3	trade	52	4	Prestwich	2	0.412	0.617	B

18	Hospital ward porter	3	5	elem	28	2	Blackley	1	0.144	1	A
19	unemployed	4	6	unem	30	2	Blackley	1	0.375	0.56	B
20	Unemployed	4	6	unem	20	2	Blackley	1	0.271	0.56	B
21	IT trainer	2	1	prof	37	1	Middleton	3	0.308	0.274	B
22	School administrator	2	2	admin	42	4	Prestwich	3	0.010	0.16	B
23	Shop assistant	3	4	sales/customer	19	1	Middleton	2	0.070	0.7	A
24	Nursery nurse	3	5	elem	39	2	Blackley	1	0.144	0.688	A
25	unemployed	4	6	unem	17	2	Blackley	1	0.250	0.522	A
26	Sandwich shop	3	5	elem	26	1	Middleton	1	0.370	0.5	B
27	Unemployed	4	6	unem	17	1	Middleton	1	0.000	0.763	A
28	Builder	3	3	trade	48	3	Collyhurst	1	0.283	0.47	B
29	Carer	3	5	elem	47	3	Collyhurst	1	0.110	0.75	A
30	Teacher	1	1	Prof	27	4	Prestwich	4	0.560	0.141	C
31	Unemployed	4	6	unem	43	3	Collyhurst	1	0.160	0.775	A
32	Unemployed	4	6	unem	54	2	Blackley	2	0.304	0.363	B
33	Pre-school assistant	3	5	elem	50	1	Middleton	1	0.060	0.5867	A
34	Unemployed	4	6	unem	25	3	Collyhurst	1	0.172	0.533	A
35	Roofer	3	3	trade	41	2	Blackley	1	0.017	0.686	A
36	Retired, ex-clerical worker	2	2	admin	63	4	Prestwich	3	0.660	0.182	C
37	Seamstress	3	3	trade	60	3	Collyhurst	2	0.030	0.8	A
38	Delivery driver	3	5	elem	36	1	Middleton	1	0.030	0.0742	A
39	Cleaner	3	5	elem	42	3	Collyhurst	1	0.000	0.77	A
40	Labourer	3	5	elem	29	1	Middleton	1	0.433	0.44	B
41	Telesales rep	3	4	sales/customer	24	2	Blackley	1	0.000	0.681	A

42	Nail technician	3	5	elem	27	1	Middleton	1	0.018	0.65	A
43	Unemployed	4	6	unem	40	2	Blackley	1	0.31	0.62	B
44	Customer service agent	3	4	sales/custo mer	20	1	Middleton	1	0.100	0.62	A
45	Market trader	3	5	elem	55	3	Collyhurst	1	0.000	0.84	A
46	Carer & bar worker	3	5	elem	40	1	Middleton	2	0.348	0.307	B
47	Bricklayer	3	5	elem	48	3	Collyhurst	1	0.244	0.367	B
48	Unemployed, housewife	4	6	unem	38	4	Prestwich	1	0.150	0.695	A
49	unemployed	4	6	unem	17	2	Blackley	1	0.287	0.342	B
50	Librarian	2	1	Prof	59	4	Prestwich	2	0.618	0.080	C
51	Roadsurfacer	3	3	trade	54	4	Prestwich	1	0.391	0.49	B
52	Hairdresser	3	3	trade	43	4	Prestwich	2	0.214	0.29	B
53	Unemployed	4	6	unem	27	2	Blackley	2	0.207	0.344	B

Interview data coding sheet

NAME: **NETID:**   **POI:**

Age:	Locality:	Locality previous:
Sex:	Job:	
Ethnicity:	Educ:	
Housing status:		

	Section 1										Section 2	
QU.	NAME & SURNAME INITIAL / NICKNAME	LOCAL AREA	M/F	What is their job? N=unemployed R=retired	Ethnicity	Partner	Family	Friend	Neighbour	Work-mate	CLOSE	ECON