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Understanding Community: A review of networks, ties and contacts

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Summary

This is an overview of different approaches to the study of social networks, relationships and contacts situated in the context of debates on the interpretation of the changing nature of 'community'. Three approaches are considered; a traditional 'community as locality' approach that sees contacts as bound to a particular geographic location; 'social network analysis' that considers the 'networked' nature of an individuals' contacts; and the idea that individuals are connected through 'small worlds' that attempt to understand the linked nature of different networks (see Larsen *et al.*, 2005).

Implicit in these competing approaches is the link between 'community' and social networks (though the two are far from mutually exclusive). This is particularly evident in explanations of how social, spatial and technological change has altered the ways in which social relations are ordered. Simplified, this forms a somewhat evolutionary narrative of shifts in the organisation of social relations from 'face-to-face', to 'place-to-place', to 'person-centred' contacts and relationships (Wellman, 2001). It is the later, encapsulated in ideas such as 'networked sociality', that some suggest has had most impact on our understandings of social networks and community (Wittel, 2001). This is evident in discussions of how the rise of instantaneous communication technology such as the internet, e.mail or mobile phones have facilitated the 'death of distance' and enabled individuals to overcome the problem of time when contacting others (Cairncross, 2001). As the review goes on to discuss, this does not mean that the need for embodied travel or face-to-face contact is now redundant. If anything, some argue that travel has increased in frequency and distance, and produced more dispersed and flexible social ties which continue to be maintained through ever complex processes of physical co-presence (Urry, 2002; 2003).

While some present almost utopian claims about networked individualism and how new travel and communication technologies can empower individuals to 'choose' or create better networks, and therefore better social lives, the review warns of the dangers of overlooking what, for many, is exclusion from the ability to engage in such socially enabling networking. Furthermore, the alleged 'death of distance' and freedom from spatial fixity of networked individualism has not eradicated the relevance of the spatial and temporal contexts of social networks.

Keywords: Social networks, community, social contacts, 'death of distance'

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Introduction

This is a selective review of literature on contacts, flows and networks situated in the context of debate about the idea of 'community'. It is based primarily upon work conducted by sociologists but also encompasses work from geography, planning and transport research. It outlines three ways of conceptualizing how people are connected: first, by considering literature around the subject of community; second, through deployment of the social network metaphor; and third through the 'small world' theory of interconnectivity. These are the categories identified by Larsen *et al.*, (2005) who also present a fourth approach to understanding connectivity based upon mobility, though which is given only brief consideration here. The review ends with a short discussion of the role of context in contemporary thinking about networks.

It is important to recognise that this is at best a partial review. For example, aside from a brief exploration of Urry and colleagues work on mobile sociologies (Larsen *et al.*, 2005; Urry 2000i; 2000ii), discussion about social capital (e.g. Putnam, 2000), the sociology of friendship (e.g. Adams et al., 2000; Allen, 1989; Pahl, 2001) and the network structures of corporate organisations (e.g. Mehra *et al.,* 2006) are not considered. Neither is some of the more complex methodological and analytic techniques deployed in social network analysis (see instead Degenne and Forse, 1999; Scott, 2000). Issues of ethnicity, class and particularly gender, and their importance in the construction and reproduction of social networks are also not addressed to any great degree. This is not to infer that these omissions render such issues unimportant, but rather that they are outwith the aim of the review; that is, to map some of the changing landscape of community research. Finally, the issue of language is also worthy of comment. There is an enormous array of research focusing on relationships, contacts, networks, social ties. Some of these are addressed by shorthand terms such as 'social capital' or 'community relations', some is presented as studies of kin or friendship patterns, while some remains faithful to the network social metaphor. It is impossible to consider all this information here. Instead the review focuses upon the changing focus of community research, and within this, upon the conceptual aspects of the study of networks and communities rather than with the intricacies of the reported results of the research.

Changing views of 'community'

The idea of community is a confusing concept. It encapsulates issues of identity and belonging, similarity and difference, inclusion and exclusion, place and time, processes such as modernisation, and has been considered both a spatial and social phenomenon (Bell and Newby, 1971; Cater and Jones, 1989; Crow and Allen, 1994; Delanty, 2003; Johnston, 2000; Silk, 1999). Some emphasise the communality of the term, such as Silk's (1999; p6), suggestion that it infers "common needs and goals, a sense of the common good, shared lives, culture and views of the world, and collective action". Others explore the relational aspect of the term, suggesting it offers "a convenient shorthand term for the broad realm of local social arrangements beyond the private sphere of home and family but more familiar to us than the impersonal institutions of the wider society" that can be identified in "interlocking social networks of neighbourhood, kinship and friendship" (Crow and Allen, 1994; p1).

Clearly, there are different ways of approaching the community question. These include communities based upon close geographical proximity (e.g. Mackenzie and Dalby, 2003; Staheli and Thompson, 1997), communities as localised social system binding social groups and institutions (e.g. Allen and Hamnett, 1995; Gandy, 2002; Miller, 1993), or communities as forms of communion based on a common identity or set of believes and practices (e.g. Lave, 2003; Radcliffe, 1999). All however, appear united around attempts to understand 'belonging'.

In his overview of social science research on community Delanty (2003) identifies four broad ways that the term has been applied. The first, adopted predominantly by sociologists and geographers, concerns the social and spatial formation of social organizations into small groups such as neighbourhoods, small towns or other spatially bounded localities. Recently, this approach has seen contributions from a number of studies and policies concerned with the condition of particular disadvantaged localities, propelled by a political discourses such as 'community empowerment' and 'regeneration' (e.g. Amin, 2005; Cattell, 2004). A second approach, adopted by those working in cultural studies and anthropology, applies the term to ideas of belonging and difference around issues such as identity. A third position considers community as a form of political mobilization inspired by radical democracy that prompts 'communities of action' to oppose social injustice. Delanty's final type is based on the rise of a global society and draws on processes such as transnational mobility and the development of diasporas, and technological development such as global communications and the internet. This 'cosmopolization' of community has encouraged reflection of issues such as proximity and distance and co-presence and absence that are central to more static concepts of community, for as social contacts become stretched over great distances, so social relations are being re-shaped beyond the traditional categories of place (Delanty, 2003; p4; Albrow, 1997). The later is premised upon the enabling capacities of technological change that has facilitated long distance, instantaneous communication, and which are said to be producing more geographically dispersed communities of belonging (Delanty, 2003; Eade, 1997).

Delanty (2003) argues that these 'communication communities' have emerged from the twin forces of individualization and globalization. They depend upon the power of communication to produce new forms of social bonding and belonging where individuals have overlapping and multiple bonds to different communities. These are organised through sets of social relations that are "[o]rganized more like a network" in such a way that "community today is abstract and lacks visibility and unity... more an imagined condition than a symbolically shaped reality based on fixed reference points" (Delanty, 2003; p188) such as neighbourhood, class or family. Communicative communities transcend geography and place and this, Delanty concludes, presents a new set of challenges:

> "The revival of community today is undoubtedly connected with the crisis of belonging and its relation to place. Globalized communications, cosmopolitan political projects and transnational mobilities have given new possibilities to community at precisely the same time that capitalism has undermined the traditional forms of belonging. But these new kinds of communities – which in effect are reflexively organized social networks of individual members - have not been able to substitute anything for place, other than the aspirations for belonging. Whether community can establish a connection with place, or remain as an imagined condition,

> will be an important topic for research in the future" (Delanty, 2003; p195)

For Delanty and others (e.g. Eade, 1997; Wellman, 2001), the problem with 'traditional' understandings of community is their almost romanticized attachment to the powers of locality or place (e.g. Park *et al.*, 1967; Wirth, 1938). Such locality communities represent;

> "a socially interactive space inhabited by a close network of households, most of whom are known to one another and who, to a high degree, participate in common social activities, exchange information, engage in mutual aid and support and are conscious of a common identity, a belonging together" (Cater and Jones, 1989; p169).

Traditional views of locality-based communities tend to be portrayed as spatially bounded, tight-knit networks that act as structural supports for friendship, kinship and place attachment. It is now argued that either such supports are less important than they once where, or that they have become much less spatially orientated (Larsen *et al.*, 2005). Nonetheless, the legacy of such understandings of community remains evident in ongoing territorial-based community research, even if this now focuses more on the arrangement of social relations and interaction of individuals situated in spatial proximity (Crow and Allen, 1994).

For some then, the idea of territorial-based communities is increasingly being seen as irrelevant to contemporary social life. Just because people might dwell in the same geographic space does not mean they have any ties either to that space, or to other people around them; geographic propinquity does not mean social communality. This weakening of the social bonds in and to a bounded space has contributed to a decline in the popularity of academic-orientated community studies since the 1960s.

Communities lost and the rise of social networks

The rise of Modernity and the subsequent 'communities lost' thesis is a well known narrative in community studies literature (Crow and Allen, 1994; Delanty, 2003). The decline in relevance of the territorial-community and reduction in 'community studies' research can, in part, be attributed to the changing nature of urban sociology (where such studies have traditionally been situated) and growing dissatisfaction with some of the ecological determinism that permeated some of the work from the Chicago School studies and its successors. According to some classic sociological theory, 'communities' should not exist at all in cities, or, at best, only in a weakened form (Wirth, 1938). The advent of modern capitalism, industrialisation and urbanisation is theoretically considered to disrupt 'pre-modern' social organisations built around the family or kin group, to be replaced by '*gesellschaft*' relationships of contractual obligations between individuals with specialised roles (Tonnies, 1887). As alluded to above, there has been much debate concerning the apparent decline of the importance of the neighbourhood community (Cater and Jones, 1989; Clark, 2003; Dench *et al.*, 2006; Putnam, 2000; Wellman, 1979; Young and Willmott, 1957).

Such arguments are frequently situated within discussion about Tonnies' (1887) classic (if much maligned) distinctions between *gemeinschaft* and *gesellschaft*.

Although often considered in a rural/urban context, his distinction is also an attempt to account for the alleged decline of community. *Gemeinschaft* refers to a situation of moral unity, rootedness and kinship where relationships are tied to social status, close contact and emotional ties within a bounded local territory. *Gesellschaft* is a state of individualistic, impersonal anomie (Silk, 1999; Valentine, 2001). According to Tonnies, processes of industrialization and urbanization have resulted in a shift in the make up of social relations from *gemeinschaft* to *gesellchaft*, with a subsequent passing of 'community'. Although it is easy to find research that dismisses such views (e.g. Gans, 1962; Jacobs, 1961; Jablonsky, 1993; Young and Wilmott, 1957), changes in the social and economic structures of urban areas have produced profound changes on 'communities' within them. The separation of home and workplaces, the feminisation of the workforce, growth of private and public transport, and perhaps above all, suburbanisation, has led to the break up of what has been traditionally viewed as a locality-based sense of 'community'.

While studies of 'urban communities' appear diverse and, at times, overly specific to their particular localised context, they are united around reasonably long-established working class neighbourhoods. Such neighbourhoods have tended to be stereotyped by permanence and immobility (Clark, 2003) that encouraged the development of dense local social support networks. Occupational, personal and residential immobility, coupled with the close spatial distance between members of social networks was believed to strengthen vertical bonds of kinship and horizontal bonds of friendship to enable dense, locality specific social networks. It is these forms of locality based, or face-to-face networks, that are perceived to have declined over the past decades (e.g. Putnam, 2000). However, the cohesiveness and communality arising from perceived immobility in working class neighbourhoods is a tenuous theory of community formation. This is particularly so given recent changes to the social and economic composition of such places. For example, many studies highlight the tensions facing working class communities brought about by social and economic change. This might include the arrival of 'new comers' from different (i.e. non-white, non-protestant) cultural or ethnic backgrounds, or in the in-migration of different social classes (such as gentrifiers), generational change and the movement of kin to new housing developments in the suburbs, or the social and economic stress associated with change in low income areas. The result is the somewhat clichéd construction of aging, inner city communities becoming 'lost' (Putnam, 2000; Stein, 1960).

The 'loss' of traditional, static bonds to social and spatial change and the alleged individualisation of society are not, however, the only problems with locality-based community studies. Changes in the nature of space have also raised questions about the localness of contemporary social life (Eade, 1997). First, processes of globalisation have raised concerns about a process of homogenisation that has eroded the particularity of local place and culture (Albrow, 1997). And second, there is concern about the local-ness of community studies that makes them appear blind to the impact of global forces affecting the formation and experience of community. For some, it is the operation of these forces, and their particular outputs in particular places among particular groups of people, that reproduce what could be termed community:

> "The construction of 'community' in a specific locality… cannot be analysed on the assumption that the local is prior, primordial, more 'real'. Local solidarities and imaginings may also be produced by global

> processes... Community is in the process of being disembedded, therefore, to the extent that we identify its reconstruction on a non-local, non spatially bounded basis" (Albrow *et al.*, 1997; pp24-25)

This is a concern about more than just the changing nature of local places. In a world of global sameness we are increasingly told that we should be interested in spaces of flows, not the spaces of places (e.g. Castells, 1996). The advent of transnational processes such as globalization and deindustrialization, the growth of telecommunication, transnational migrations, international travel, and a growing awareness of socio-cultural diversity, has meant that place and locality no longer matter in the ways they once did (Graham, 1998; Sassen, 2000). Given all urban places appear to now be 'translocal' insofar as global processes are not confined to any demarcated space or even scale (such as a neighbourhood, city, or nation), place has come to be considered multifaceted and multi-scaled. That is, part of a networked geography of links and connections. For some, this represents a new research field encompassing both the local and transnational scope of contemporary socio-spatial practices, with a focus on the processes of "transnational network formation and translocality construction (N Smith, 1999, p13; cited in Graham and Marvin, 2001, p35). It also hints at an emergent consensus that many of the traditional tools (such as the urban neighbourhood or rural village) for mapping social relations and understanding societal change are no longer appropriate, or at least not in their conventional form (Sassen, 2000).

Consequently, debate over the concept of a territorial community has raised questions about whether the term has any useful analytical value. Communities can exist without a territorial base (geography), and territories can exist without any communal ties or cohesion (social connection). While this has prompted a view that territorial-communities do not exist, others have suggested that the creation of such communities (for example as political projects) remains a fruitful endeavour (Putnam, 2000; also Etzioni, 1995). This is a goal, some argue, fraught with danger in that the creation of social harmony within a community paradigm can only be achieved through the promotion of social homogeneity at the expense of difference (Young, 1990). Thus some past research concerned with identifying 'community' has been criticised for romanticising the term and concealing its less desirable features (Cater and Jones, 1989; Rose, 1990; Valentine, 2001; Young, 1990) leading, with the lack of any clear definition, to the dismissal of the term as relatively meaningless.

Communities and social networks

The twin processes of individualisation and the associated alleged retreat from public life, together with globalisation and its accompanying eradicated of the power of the local, have had profound effects on how we understand community. However, conflicting understandings about the nature of community were evident long before the concerns of the globalisation theorists or social capitalists. Studies of urban villages and neighbourhoods revealed a much less romantic world of *gemeinschaft*. First, 'urban villages' and 'street corner societies' were found to be organised into neighbourhood allegiances, gangs, ethnic communities, and many identified local loyalty networks within them (Anderson, 1963; Gans, 1962; Whyte, 1943). Second, such communities were understood to comprise of loyalties to networks as well as places, with

people identifying (or not identifying) with characteristics of, and allegiances with, other members of particular networks. Thus urban communities appeared to exist as social worlds of 'sub-cultures' built around ideas of similarity and difference, or inclusion and exclusion. Third, a darker underpinning to the community concept is also revealed in the work of some past neighbourhood research, notable in Abram's argument that close knit social relationships in low income or working class neighbourhoods formed out of a need for self reliance and reciprocity in the face of social isolation and insecurity wrought by external pressures (Bulmer, 1985).

A further, methodological, concern with territorial community studies lies in their potential reliance on a somewhat naive appreciation of spatiality that could potentially lapse into environmental determinism. The rejection by sociologists of space as a determinant, or even constraint, on social relations and actions inevitably had repercussions on just what, if any, the power of local place was (Castells, 1977; Saunders, 1981). However, these concerns did not mark the end of 'locality' based studies. For instance, one strand of research began to explore the ways in which structural and globalised processes produced particular outcomes in particular places (e.g. Cooke, 1989). Another turned to understanding 'community' through its social groups of neighbours, friends and kin (e.g. Fischer, 1982). The later, when merged with network research (e.g. Barnes, 1954; Bott, 1957; Granovetter, 1973), offers an alternative approach to understanding community (Bulmer, 1985; Wellman *et al.,* 1988). This 'network' orientated approach to community has the benefit of "not tak[ing] as its starting point putative solidarities [such as attachment to locality]… to find and explain the persistence of solidarity sentiments" (Wellman, 1979; p1203). Bulmer (1985) explains in more detail the difference between exploring communities as places and communities as networks of social ties by considering the difference between neighbours and neighbourhoods:

> "A major virtue of shifting the emphasis from the study of 'community' to the study of the primary group – whether made up of neighbours, friends or kin – is that it gets away from the metaphysical problem of community. The study of neighbours, for example, indeed focuses upon the social relationships of geographical propinquity and certainly the term 'neighbour' needs careful definition… but is does not involve the reification of a geographical or structural entity which has proved so problematic in the case of 'community'… Ways of life indeed do not coincide with settlement patterns, but in studying neighbours, one is not studying settlement patterns but social networks and the ways in which people construct their primary group relationships… An approach formulated in terms of primary group relationships seems more fruitful than one tied, problematically, to geographical space" (Bulmer, 1985; p434)

I return to the 'problem' of geographical space later, but first, it is relevant to review the advancement of a network approach to social relationships. It is not just neighbours and neighbouring that can be understand by exploring the links and contacts between individuals, but also as Bulmer alludes to, friends, relatives and acquaintances (e.g. Delanty, 2003; Willmott, 1987; Pahl, 2001). Consequently, individuals' interactions with others are thought to be better understood in the context of their social environment rather than their physical one (Bott, 1957).

In general, the term social network has come to be used in two ways; one simply refers to the number of people that a person knows, regardless of the links between these people. The other, more formal usage, refers not only to the numbers of people a person is in touch with, but also the extent to which these different people also know each other (Wilmott, 1986). The resulting image; of a net surrounding an individual (or Ego), is termed the individual's network.

A discourse to describe and analyse these social networks has subsequently emerged. For example, social networks that have many links are defined as close-knit or dense while those with few links are deemed less-dense or loose-knit. Alternatively, some have explored the strength (or weakness) of ties in particular networks (Granovetter, 1973; 1983; Scott, 2000; Willmott, 1986). Granovetter has summarised the semantic nuances of these terms thus;

> "Bott [1957] argued that the crucial variable [affecting the structure of a social network] is that of whether one's friends tend to know one another ('close-knit' networks) or not ('loose knit' networks). Barnes makes this dichotomous into a continuous variable by counting the number of ties observed in the network formed by ego and his friends and dividing it by the ratio of possible ones; this then corresponds to what is often called network 'density' (Barnes, 1969; Tilly, 1969).
>
> Epstein (1969) points out, however, that different *parts* of ego's network may have different density. He calls those with whom one 'interacts most intensely and most regularly, and who are therefore also likely to come to know one another' the 'effective network'; the 'remainder constitute the *extended* network' (pp 110-111). This is close to saying, in my terms, that one's strong ties form a dense network, one's weak ties a less dense one" (Granovetter, 1973; p1370)

Social network research has gone further than merely metaphorically casting individuals within nets of contacts and links to become an analytic research process in itself (e.g. Wellman and Berkowitz, 1988; Wasserman and Faust, 1994; the journal *Social Networks*). Social network analysts have developed complex methods of mathematical modelling, based on the assumption that peoples' contacts are not random and chaotic, but rather exist in organised structures that can be revealed through the analysis of quantitatively derived empirical data about social networks (Scott, 2000). Yet while quantitative techniques may dominate some spheres of social network analysis (e.g. Degenne and Forse, 1999, Lubben and Gironda, 2004; Scott, 2000) this does not mean that qualitative-orientated research is absent (e.g. Morrow, 2004; Pahl and Spencer, 2004).

This methodological diversity is matched by a variety of disciplinary approaches to the study of social networks, and network analysis has also recently emerged on the policy agenda (Nash, 2004). Philllipson *et al.,* (2004) summarise several sociological perspectives on social networks. These include work exploring; the impact of ties for individuals and social organisation; the impact of particular configurations of networks; the role of networks in the provision of support; and the implications of adopting a social network perspective for public policy. They argue that the seductiveness of social networks lies in them being "especially effective in capturing those relationships or social connections, such as friends, neighbours, workmates or acquaintances which could rarely be understood in bounded terms" (Phillipson *et al.,* 2004; p2).

A social network perspective has been lauded for shifting analysis and explanation of 'community' away from a (geographically bounded) social group to a collection of 'networked individuals':

> "We find community in networks, not groups… In networked societies: boundaries are permeable, interactions are with diverse others, connections switch between multiple networks, and hierarchies can be flatter and recursive… Communities are far flung, loosely-bounded, sparsely-knit and fragmentary. Most people operate in multiple, thinly-connected, partial communities as they deal with networks of kin, neighbours and friends, workmates and organizational ties. Rather than fitting into the same group as those around them, each person has his/her own personal community" (Wellman, 2001; p227, cited in Larson *et al.*, 2005).

Larson *et al.* (2005) draw predominantly on Wellman's work (Boase and Wellman, 2004; Hampton and Wellman, 2001; Wellman, 2001; 2002; Wellman and Haythornthwaite, 2002) in their review of the subject, though the field is much wider. Larson *et al.,* (2005) present Wellman's work as a preferred alternative to the locality based approach to community. However, it is important to recognise that 'social networks' and 'spatial communities' may be two different ways of pinning down the same term ('community'). It thus might not be a question of 'which approach is better', but rather, 'which approach is better for what kind of community'. Yet it is debatable whether everyone is talking about the same type of community phenomenon here. For some analysts, the idea of a social network is one that can better represent what we might mean by the term than the fixed spatiality of the community studies literature (Delanty, 2003; Wellman; 2001; Wellman et al., 1988).

Larson *et al.,* (2005) elaborate on the benefits of such a network approach. First, by focusing on the individual (rather than a specific location), it is possible to understand how people can engage in a variety of different 'communities' (for example of faith, interest, kin, even neighbourhood). And second, it recognises and accommodates the changing nature of ties and contacts represented in the shift from door-to-door to place-to-place and then person-to-person communities. The resultant 'networked individualism' (Wellman, 2002; p2) has moved the "dynamics of connectivity from places… to individuals" (Wellman, 2001; p238). Rather than people being embedded in a small number of localised networks, networked individualism enables people to switch between different networks, permitting some degree of choice about which, when, how and where to enter particular networks of friends and acquaintances. It is the creation of these person-centred networks that forms the focus of the network approach. The consequences of this are discussed later. Before that, it is relevant to consider a further approach to understanding community outlined by Larsen *et al.* (2005).

The 'small world hypothesis'

The small world phenomenon (sometimes referred to as the small world effect) is a refinement of some of the network research discussed above. It is premised on the hypothesis that everyone in the world can be reached through a short chain of social acquaintances (Watts, 2003). The concept gave rise to the phrase 'six degrees of separation' after a small world experiment by social psychologist

Stanley Milgram (1976) in which he demonstrated how two random individuals were connected by an average of a chain of six acquaintances. In his best cited experiment, Milgram sent 60 letters to various recruits in Kansas who were asked to forward the letter to the wife of a divinity student living at a specified location in Cambridge, Massachusetts. The participants could only pass the letters by hand to personal acquaintances who they thought might be able to reach the target, either directly or via a 'friend of a friend'. Of the fifty people who sent letters in response to the challenge, only three letters eventually reached their destination, with one reaching its intended recipient in just four days. That such a small proportion of the letters either reached their intended destination is often overlooked and subsequent research has identified a number of factors (such as ethnicity or social class) can have significant effects on the results of small world experimentation.

More recent research by Watts (2003) has highlighted the importance of what Granovetter (1973) termed 'weak ties' in connecting geographically dispersed individuals and groups. Rather than being situated in random, scattered and isolated networks, individuals live in clusters of ties that link sets of networks together. Furthermore, Milgram identified a 'funnelling' effect whereby most of the forwarding of the letters (i.e. the connecting) was done by a very small number of 'star' individuals with significantly higher-than-average connectivity with two of the three completed letter-chains passing through the same people. Other research appears to confirm the existence of a 'small world effect' with different exploratory chains having completion rtes of between 12% and 33%, with the numbers of linked individuals ranging from 2 to 10 (Korte and Milgram, 1970; Milgram, 1967; Travers and Milgram, 1969).

In 1998, Watts and Strogatz published their network model of the phenomenon. They claimed the model 'proved' how naturally occurring, manufactured and social networks all exhibit properties of the small-world phenomenon. However, the status of the 'small world' hypothesis remains debateable. Even after more than thirty years, its status as a description of heterogeneous social networks still remains in question. Little research has been done in this area since the publication of the original paper, and no research has moved beyond the developed world to explore whether people really are connected to 'everyone in the world'. Consequently the small world hypothesis seems more applicable as a catchy rhetorical sound-bite or rather banal dinner party games such as the 'six degrees from Kevin Bacon' game.

That said, some concepts implicit in the small world metaphor, such as the degree of connectivity between unknown individuals, have made a contribution to the field of innovation diffusion (Granovetter, 1973; Lin *et al.,* 1978). However, it would appear to be the nature of the ties, and the type of information passed along them, rather than the number of links *per se*, that has proved more interesting for researchers (Granovetter, 1983). Much of this work focuses on the quality of the links between individuals in a particular social network (identified for example, as being 'strong' or 'weak'), which in turn have been considered by some to be indicative of particular 'structures of feeling' which can enable or restrict access to different resources and information.

The strength of weak ties

Perhaps the best source on the importance of the linkages within an individual's network is Granovetter's work on the relevance of strong and weak interpersonal ties (Granovetter, 1973; 1983). He argued that an individual has a number of strong ties (typified by close-knit, dense linkages for example between best friends) and weaker ties (the less dense, casual linkages for example between acquaintances). The strength of a tie was understood as "a combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services which characterise the tie" (Granovetter, 1973; p1361). Contrary to ideas about the distinction between *gemeinshaft* and *gesellshaft*, and the belief that the weakening of social bonds and growing social anomie wrought by urbanisation and modernisation, Granovetter theorised that weak ties between individuals are crucial for creating new opportunities, enabling resource and information diffusion, and for the successful integration of different social groups. Strong ties, while creating local cohesion, will ultimately lead to social fragmentation. Weak ties meanwhile, rather than generating anomie and alienation as might be expected, strengthened wider cohesion. Not all weak ties are so important, however, but rather those that act as bridging ties between two different networks of strong ties, along which ideas, innovations, information and artefacts flow. Thus, contrary to what might be expected (e.g. by Wirth's [1938] ideas about urban society, or Putnam's [2000] lament of the alleged loss of social capital in contemporary society), the loss of "the average weak tie would do more 'damage'... than would that of the average strong one" (Granovetter, 1973; p1366). Granovetter explains this further through the example of rumour:

> "Intuitively speaking... whatever is to be diffused can reach a larger number of people, and traverse greater social distance... when passed through weak ties rather than strong. If one tells a rumour to all his [sic] close friends, and they do likewise, many will hear the rumour a second and third time, since those links by strong ties tend to share friends. If the motivation to spread the rumour is dampened a bit on each wave of retelling, then the rumour moving through strong ties is much more likely to be limited to a few cliques than that going via weak ones; bridges will not be crossed" (1973; p1366).

Granovetter 'confirmed' his theory by examining the job search behaviour of professional, technical, and managerial job changers in a Boston suburb. He found that weak ties, where information about job vacancies were diffused through chains of acquaintances proved more successful than information passed through close friends. Thus;

> "from the individual's point of view... weak ties are an important resource in making possible mobility opportunity. Seen from a more macro-scopic vantage, weak ties place a role in effecting social cohesion. When a man [sic] changes jobs, he is not only moving from one network of ties to another, but also establishing a link between these" (Granovetter, 1973; p1373).

It is from this position that Granovetter, and other analysts, claim that even relatively micro-studies of social networks are able to bridge the gap between personal experiences and social structures, or between micro and macro understandings of the organisation of societies. This has echoes of the critique

of locality-based 'community studies' which struggled to move beyond the peculiarities of the particular and provide either generalisable, or 'elsewhere-applicable', explanations. By emphasising the 'structures' of social networks, network analysts have thus not only been able to make some semantic links to a sociological language, but also contribute to debate about structure, agency, and issues of generalisability from 'community case studies'.

The innovation in Granovetter's work lies not only his linking of network analysis with substantive sociological and economic concerns, but also in moving beyond an individualistic, rational choice approach and revealing the structuralist underpinning of social relations (Knox *et al.*, 2006). Knox *et al.*, (2006) comment that this is more complex then might be first supposed. They highlight the well referenced distinction between 'whole network' analysis and 'ego-networks'. While the former map the structural relations across a whole sub-population, the later only enumerate relationships between a given individual and his or her contacts. Bott adopted the later approach in her well cited study of 20 'ordinary' households living in London in the 1950s (Bott, 1957). Bott noted that those household with a larger number of social ties in neighbourhood and workplaces were more likely to have segregated gender roles while those households with weaker social ties tended to be more privatised. Although Bott's substantive findings have been criticised, her work revealed the 'embeddedness' of an individual's network and "just as individuals have a class, gender, ethnicity etc., so they can be said to have a network of ties to others" (Knox *et al.*, 2006; p118). The networks remain understood, however, as individualistic attributes.

A more explicit way of presenting the structural nature of networks can be seen in Granovetter's arguments about the importance of weak ties for maintaining social order. Granovetter (1973) illustrates this through the case discussed by Gans (1962) of the failure of a Bostonian Italian [locally-based] community to successfully fight an urban renewal project which "eventually destroyed it" (Granovetter, 1973; p1373). Granovetter comments on the peculiarity of this failure given that Gans had identified the structure of community as being socially cohesive. Gans's (1962) analysis led him to conclude with the importance of culture, arguing that the Italian community's lower and working class sub-cultures failed to muster enough trust in community leaders or lend support to the common goal of neighbourhood preservation. The result was a failure to resist the renewal. Following reanalysis of Gans's work, Granovetter argued that it was not the nature of the community's sub-culture, but rather the fragmentary, clique-based structure of the community networks. He proposed that the density and effort the Italian community put into maintaining their strong ties meant that they constructed too few weak bridging ties between their more strongly tied networks. This meant the community could not mobilize widespread support needed for the resistance. Thus it was claimed that; "the more local bridges… in a community and the greater their degree, the more cohesive the community and the more capable of acting in concert" (Granovetter, 1973; p1376).

Ten years later, Granovetter (1983) reviewed further research supporting this view. He highlighted a number of studies which indicate that poor people rely more on strong ties than do others, to the potential detriment of their social and economic position (e.g. Ericksen and Yancey, 1977; Lomnitz, 1977; Stack, 1974). He concluded that;

> "[t]his pervasive use of strong ties by the poor and insecure is a response to economic pressure; they believe themselves to be without alternatives, and the adaptive nature of these reciprocity networks is the main theme of the analysts. At the same time, I would suggest that the heavy concentration of social energy in strong ties has the impact of fragmenting communities of the poor into encapsulated networks with poor connections between these units; individuals so encapsulated may then loose some of the advantages associated with the outreach of weak ties. This may be one more reason why poverty is self-perpetuating. Certainly programs meant to provide social services to the poor have frequently had trouble in their outreach efforts. From the network arguments advanced here, one can see that the trouble is to be expected." (Granovetter, 1983; p213)

The weakness of a network approach

Network analysis and its associated ideas about social networks do not provide a panacea to understanding the complexity of a term like community. I now outline six points of concerns about a 'social network approach' to understanding what used to be called 'community'.

First, even proponents of the social network analysis approach comment on delayed progress in achieving its potential (Allen, 1989; pp30-34; Bulmer, 1985; Granvoetter, 1983), some of which remains unaccomplished (Scott, 2000). In part, this may be due to a lack of consensus on what a 'social network approach' entails. Larson *et al*., (2005) present it as a conceptual tool for understanding the meaning of 'communities' that is in many ways a more superior alternative to locality-based studies. Others view it as analytical apparatus, or "powerful instrument in the analysis of social life" (Granovetter, 1983; p229) evident in the complex methodological analyses of networks in journals such as *Social Networks.* A further group see it as a metaphor for describing a particular set of social relations (Willmott, 1986). Thus social networks can either represent metaphors for social relationships or tools for organising data.

Second, there are concerns about the methods employed in some social network studies. The problems of building consensus around definitions of social networks, and about methodological issues of validity and reliability have been raised (Scott, 2000). O'Reilly (1988) and Orth-Gumer and Unden (1987) have raised such concerns in reviews of research exploring links between social networks, social support and their impacts on wellbeing. They comment on the substantial amount of research exploring social networks and social support in the context of health and wellbeing (e.g. Gottlieb, 1981; McKinlay, 1973; Phillipson, 2004; Willmott,1986; 1987). A main concern they raise is the lack of consensus about what a social network is, with some research failing to distinquish between social support and social networks (O'Reilly, 1988). Of thirty-three instruments used to assess social support networks, O'Reilly (1988) identified just nine studies dealing specifically with social networks providing social support. These are listed in Table 1 along with the conceptual and operational definitions of social networks each study adopted.

Table 1: Methodological components of studies of social networks (from O'Reilly, 1988; Table 2)

Study	Conceptual Definitions	Operational Definitions
Barrera (1980)	Individuals who provide the functions that define support.	1) In 6 areas of social support, respondents identify individuals who typically supply support and who actually supplied support in past month. 2) Respondents identify those encountered in a social conflict and with whom they actually conflicted during past month.
Berkanovic et al., (1981)	----	Respondents identify up to 7 people to whom they talk about health-related matters and for each, give; age, proximity, frequency of visits. Respondents also asked whether they know each other, show concern, are consulted on health matters.
Branch and Jette (1983)	Those significant others with whom elders have close contact.	Respondents identify children, other relatives and friends seen or talked to often. Information provided on; proximity, frequency of contact, closeness, health, duration of friendships.
Froland et al., (1979)	Social ties that have a potential for providing social support defined as accessible and important.	Questions about networks; size, proximity, density, patterns of interaction, supportive functions, stability of network.
Gallo (1982)	Set of interpersonal links from which dependable others gratify a person's psychosocial needs.	Respondents identify up to 4 people with whom they talk to on matters of concern or importance and for each specify; frequency of contact, if they know one another, proximity, content, intensity, homogeneity, duration and directedness of relationship.

Hirsch (1980)	Natural support system: significant others who are members of one's social network or unaffiliated health professionals.	Respondents list up to 20 significant others who they are likely to interact with during a specified time period. Develop matrix to identify which of these people know one another; also include gender, frequency of contact, preferences of interactions.
Mitchell (1982)	----	Respondents identify up to 6 individuals important to them; identify which are relied on for material assistance, emotional support, companionship and information.
Perucci and Targ (1982)	A set of direct and indirect ties among a defined group of individuals or organizations.	Identify and then interview members of an individual's network to determine; network size, density, openness, pattern of ties, and role structure.
Wentowski (1981)	----	Structured interviews and participant observations used to identify providers of support and reciprocal nature of helping behaviours.

It should be stressed that these studies were designed to elicit information on networks of or for social support. Similar tables could be constructed around networks used for job searching, mobility, or any other function of social networks. However, O'Reilly's analysis has wider implications for the study of social networks, notably, his identification of three levels of decision-making culminating in; the operational definition, the specificity of questions, the specificity of network, and the specificity of network components (1988; p871). Three investigations (Branch and Jette, 1983; Perrucci and Targ, 1982; Wentowski, 1981) targeted specific groups, but the remainder were designed for a general population. Four investigations limited the potential size of participants' networks to sizes ranging from 4 to 20 (Barrera, 1980; Froland *et al.,* 1979; Perrucci and Targ, 1982; Wentowski, 1981) while the remainder left this open. Finally, differences were found in the components of the networks collected. For instance, data on structural dimensions include the type of relationship, size, density, and proximity while that collected about interactive dimensions included durability, frequency of contact, and intensity of the relationships. These same issues around methodological decision-making can also be seen in other network investigations summarised in Table 2.

Table 2: Measuring ties in network research

Study /source of reference	Brief description of methods	Means of identifying or measuring ties and contacts
Coates *et al.* (1969); Gates *et al.* (1973); Wellman et al. (1973); Wellman (1979)	Random sample of 845 East New Yorkers; 'closed-ended' survey questions about nature of urban community.	Respondents identified "socially close ('intimate') ties" outside households up to a maximum of six 'intimates'.
Wellman et al. (1988)	Interviews with 33 East New Yorkers Questionnaire about different types of 'aid' offered within social network (extension of above projects).	All persons with whom respondents were significantly 'in touch' with; how persons first met, circumstances of jobs and home lives, acts of reciprocity.
Willmott (1987)	Survey of friendship networks and social support. Open ended questionnaire with 132 individuals living in Council estates or private estates. Relatively homogenous sample of married people in households with one or more children under 16 screened through initial survey. 'Person forms' documenting contacts.	All persons respondents 'met socially' in last six months in any of following contexts; school or childhood, university or college, work or job interests, social clubs, places of worship, evening classes, trade unions, sports or other clubs, as a neighbour, or through living in the district. Plus additional 'catch all' question about anyone else who had not come up in this list. Three questions about seeking or giving advice.
Fischer (1982)	Survey of 1000 Northern Californians about the nature of small town networks and contacts. Questions about 'to whom they would turn to take care of their homes', 'talk with about personal matters', invite into their homes for lunch or dinner, borrow money from etc.	Ties identified as between individuals who did particular things for respondents.

Larson *et al.* (2005)	Explored geographical spread of young people's social networks in relation to mobility. Questionnaires and interviews with 24 individuals (architects, fitness centre employees and security personnel).	Pre-interview questionnaire establishing residential mobility and access to networking tools Interview eliciting communication practises, travel, and face-to-face visits for work, family and friendship Post-interview questionnaire identifying 'up to ten most important people in social network', their location, when and how they meet, how respondents maintain contact.
Granovetter (1973)	Random sample of job search behaviours among professional, technical and managerial job changers in a Boston suburb.	Respondents asked how recent job movers found new jobs. Those who identified a contact ($N = 54$) were asked "how often they *saw* the contact around the time that s/he passed on job information". Respondents also asked how received got the original job information.
Bidart and Lavenu (2005)	Exploration of interactions between development of personal networks and key life events. Longitudinal, qualitative study of 66 young people originally living in Normandy questioned every three years. Used name generators to explore the expansion and contraction of different ties.	Personal networks reconstituted from questions about life contexts (education, work, leisure, family, neighbours etc.) which act as 'name generators'. E.g. 'in your work, have you met people whom you know a little better, with whom you speak a little more?'

Chiu and West (n.d)	Exploration of importance of social networks among community health educators. Focus groups with community health educators about the concept of social networks and the construction of 'network pro-formas'.	Pro-formas capturing three domains of networks, comprised of individuals in 'regular contact': 1) family and friends (including closeness of relationship, mode of communication, degree of emotional and physical distance); 2) client-contacts (including details of who clients are, how made contact, means of referral, where met); and 3) work-contacts (including named contacts in work, relationship with them, advice seeking and giving behaviour, existence of social relationship).
Schlich *et al.* (2003) – summarised in Axhaussen (2005)	Exploration of interactions between spatial structure, social networks and travel patterns. Sample of 75 respondents: 12-week diaries of time use and out-of-home leisure activities, interviews.	Respondents identify their 'five most important contacts'; locations of non-household persons met through leisure activities.

Further methodological implications emerge from the studies identified in Tables 1 and 2. Clearly, the sort of data collected depends on the way networks are identified, including how the nodes and ties will be selected. Networks can extend considerably further than the social distances identified in some studies, yet there is often little explanation for how the size of the network was selected. In addition, the relations between members of a network are not static, but may change over time, or according to particular situations. For example, links may be negotiated on a daily or weekly basis while others are maintained through sporadic contact. Some networks may develop over the course of a lifetime while others may last only a few days or even hours. Yet this malleability is rarely captured or commented on. There are also differences in the 'purpose' of networks. For example, some may be based on trust and reciprocity while others exist in a stricter donor-recipient relationship. Perhaps then, more needs to be said about how different networks are utilised for different purposes. Finally, the 'things' that pass along networks may be more or less tangible, ranging for example from cash remittances and material gifts, to favours, information, emotional support or even status and respect. The result of all this complexity is that;

> "the diagrammatic representation of a social relationship in terms of line between two nodes in a network s necessarily only the beginning of the

> social scientific inquiry into the significance of this connection. Researchers have to find out precisely what passes along these lines before pronouncements about the nature of the network can be made" (Crow, 2004; p10).

This points to a third concern about the possible gaps between social networks as metaphorical maps of social relations, as forms methodological inquiry, or as substantive social phenomenon. For instance, Larsen et al. (2005) comment on how some research emphasises the form of social networks over their substance. For while some analysis of social networks might be mathematically complex, it appears to be somewhat lacking in substantive contribution to knowledge about social relations. In part, this may be due to the treatment of networks as 'real' objects rather than representation. Related to this, some theorisation about social networks, such as the relative value of strong and weak ties, remains empirically weak. For example, perhaps weak ties are more important than strong ones for maintaining social cohesion, but it may not be the number or type of tie that is important, but rather what that tie is for. Even then, the perceived presence of a tie is no guarantee that it can enable any material or emotional output, such as appropriate support. For as Bulmer comments; "[a] map of the ties connecting one individual to others in their network, or of the ties connecting a particular collectivity, is of little use unless one also knows what the content of these ties is" (1985; p437).

Crow (2004) refers to Harris's (1987) study on Redundancy in South Wales to illustrate the difficulties of adopting a binary language of strong and weak ties. Granovetter's ideas about the strength of ties formed a starting point in Harris's study, but it was found to be more useful to differentiate between the size, density, dispersion, contact and setting in the construction of empirical social networks, and that these have to be set in conjunction with (individual) identity and location measures. Crow builds on this to recommend more caution when differentiating network ties:

> "The ties that make up social networks can be stronger or weaker in several different ways, in terms of the number of people in the network, the extent to which the people in the network have overlapping interconnections, the degree of geographical concentration or dispersion of the network population, the extent to which the relations between network members are characterised by equality and reciprocity, and the impact of the broader social setting within which the network is located. The links between members of networks thus have several aspects to them, and the distinctions between strong and weak ties is insufficiently subtle to capture these nuances" (2004; p8).

A fourth concern relates to the temptation of reductionism of social networks. In reducing social networks to linkages between two individuals, it is important to question how social networks operate (or even exist) beyond the tie uniting them (Greico, 1987). For some, social networks represent the relations or linkages between a number of participants. Scott explains that networks should be understood as "the contacts, ties and connections, the group attachments and meetings that relate one agent to another and so cannot be reduced to the properties of the individuals themselves" (2000; p3; also see Cant, 2004). Yet there is a potential mismatch, first, between this analytic approach to networks

and some of the theoretical developments around, for example, dyadic relationships and ties, and second, in the methodological implications of producing network data.

To take the issue of dyadic ties first, Eve (2002) has commented on the tendency to reduce ties in a network to a dyadic relationship with limited or no contextual grounding. He questions "whether the framework of exchange between single individuals is really adequate to capture the significance of personal relations", suggesting that "focus on the immediate 'exchange' – the point where something valuable passes hands between two individuals – distracts attention from al the relationships and interactions which makes that exchange possible" (Eve, 2002; p394). Eve comments that there are benefits to understanding the "various relationships of personal and organisational relationships which form the backcloth" (p395) to exchange and person-to-person ties. However, there is a need to understand the temporal and spatial context that underpins the ties within and between different networks. For example, to take the operation of weak ties in seeking employment (Granovetter, 1973), it is unlikely that a single tie is responsible for recruitment, but is also the result of trust, reputation, and goodwill that go into the diffusion of information through interaction with other third parties (Eve, 2002; Grieco, 1987). Yet Granovetter focuses on the "special emphasis [placed] on the nature of the link between the job changer and the contact person who provided the necessary information" (1973; p1371 *emph. removed*). Granovetter used social network analysis to critique predominantly rational, economic explanations in relation to job seeking. He showed how individuals were embedded within a web or relations and ties which provided the context for particular activities. In this way, social network analysis can be presented as a kind of structuralism (Knox *et al.,* 2006). However, while this moves our understanding beyond individualism, it remains focused on the network as a cohesive entity. Consequently, examination of network structures, and of the relationships between node members within them, tends to overlook how these networks are themselves embedded in particular social, cultural, temporal and spatial contexts.

Turning to the methodological concern, much network research requests that individuals reduce their networks to a few key individuals for the purpose of eliciting data. It is common for example, for researchers to request participants to identify people they feel closest to; for example to think about their 'best friends', or to select, say, the six people they are in most frequent contact with. Yet this may limit the amount of data collected about a network, or even eliminate some ties which are important, but not considered close or part of a friend-relationship. Tables 1 and 2 outlines some of the ways participants have been encouraged to think about their contacts in a selection of studies. It can be noted that, with a few notable exceptions (e.g. Barrera, 1980), much research focuses on the beneficial or supportive aspects of networks. This of course may create a somewhat distorted picture of an individual social field, with the omission of unsupportive or possibly even detrimental or destructive social ties.

A fifth concern with social network analysis is the over reliance on the idea of ties being about providing access to resources. For some, it seems that ties exist between individuals so that they might share information, gain some 'insider knowledge', reciprocate particular favours. In other words, they fulfill some kind of almost utilitarian role. While Granovetter jokes that "lest readers… ditch all their close friends and set out to construct large networks of

acquaintances, I had better say that strong ties can also have value" (1983; p209), the effect is dampened when he goes on to say why;

> "[w]eak ties provide people with access to information about resources beyond those available in their own social circle; but strong ties have greater motivation to be of assistance and are typically more easily available…
> A general formulation is suggested by Pool [1980] who argues that whether one uses weak or strong ties for various purposes depends not only on the number of ties one has at various levels of tie strength but also on the utility of ties of different strengths" (Granovetter, 1983; p209).

The idea of people utilising different ties for different purposes, as though attempting to achieve some kind of optimal output for the effort they put in to maintaining so many contacts and juggling such a large network seems oddly unrealistic, not least because concepts like emotion, likeability, loyalty, perhaps even love, seem conspicuously absent from some analysis.

Beyond such emotional detachment, a final concern lies with the nature of agency choice and autonomy. For although a language of 'choice' about how individuals operate within networks can be found throughout the literature, this choice is frequently understood within the confines of the network structure rather than within any wider economic, political, cultural or societal constraints. While much sociology has been concerned with understanding the context of everyday life for individuals and groups, this context is less well understood in relation to the networked ties of these individuals. It remains to be seen whether personal networks can be understood as 'communities' (understood as networks of individuals belonging to a common idea or practise) or whether they merely represent "crude resources for a self-centred individualism" (Pahl and Spencer, 2004; p96). Although not grappling explicitly with the 'community' qualities of social networks, a recent body of work has begun to tackle this by considering the ways in which individuals in a network connect with each other, for example through communication or physical contact (Larsen et al., 2005).

Social ties in a networked society

Travel and telecommunication are vital ways people remain connected. It is thus axiomatic to declare that they are central to the creation and maintenance of networked communities, whether place-to-place or interpersonal. Wellman's (2001) summation of the evolution from face-to-face to place-to-place to person-to-person communities is useful shorthand for describing not only changing ontological approaches to what a community is, but also hints at how it might function and consequentially be understood. According to Wellman, the most dramatic process of change impacting on the idea of 'community' (after the shift from pre-modern or feudal to modern or capitalist society) has been the impact of technological change. Although technological change has been cumulative rather than discrete, many have commented on how changes in information and communication technologies have transgressed previous contact-shaping developments such as the automobile or steamship (Harvey, 1989). Regardless of whether present technology is having a more profound effect on community life than technological changes in the past, the rise of the 'virtual community' is a topic of considerable interest (e.g. Cairncross, 2001; Castells, 1996; 2001; Doheny-Farina, 1996; Kolko, 2003; Rheingold, 1993).

Technology is creating a new set of networked relationships that bring together new social groups. These networks may stretch across the world, only exist 'online' with members never meeting face-to-face, and may only exist for short periods of time. E.mail, text messaging, faxes, telephones and internet messenger services such as Microsoft's 'MSN' make communication across the world instantaneous and (relatively) cheap. For some, the result is that virtual communities are draining place and locality of their symbolic ties and contents, replacing them with more fluid and temporary forms of relations that exist only through their mode of communication (Castells, 2001; Harvey, 1989). These technologically enabled networks are constructing new types of social relationships, and consequently, new types of communities:

> "Networks are built by the choices and strategies of social actors, be it individuals, families, or social groups. Thus the major transformation of sociability in complex societies took place with the substitution of networks for spatial communities as major forms of sociability" (Delanty, 2003; p177; after Castells, 2001).

Networks, and their associated communities, no longer revolve around groups in fixed space, but around individuals theoretically set free from contextualising anchor points. Individuals are now able to use technology to contact others around the world at any time. A growing body of work on mobile sociologies has begun the task of rethinking some well-established sociological ideas, such as presence and absence, or trust in mobile, individualised, networked-societies (e.g. Larsen et al., 2005; Urry, 2000i; 2000ii).

Certainly the networked individualism of person-to-person ties facilitated by new technology has had a profound impact on the nature of social networks. On the one hand, cheap air travel and instantaneous technologies means social networks can becomes more geographically dispersed, facilitating connections with friends and relatives across the world (Larsen *et al.,* 2005). One result of this may well be greater autonomy for individuals to choose their contacts and ties, partly by being able to maintain ties regardless of distance (Axhaussen, 2005; Welman, 2001). Yet at the same time, there are fears about a social world of increased isolation. For while liberation from space may have created a separation from the local environment (the locality-based community), the personalisation of networks may have lead to less meaningful face-to-face communities, a breakdown in trust, growing social isolation, the elimination of a collective sensibility and a general advancement of the "impersonality of modern life" (Boden and Molotch, 1994; p257). Debate is moving beyond such polemical posturing to consider the particular structural and contextual ways in which different individuals are able (or not) to engage in a networked society. Yet inequalities in accounts of networked sociality remain. For example, some have drawn attention to the gendered and cultural nature of technology use (Boneva and Kraut, 2002; Lacohee and Anderson, 2001; Moyal, 1992; Wilding, 2006). Consider also the potential for class-bias in visions of individuals in a society of networked individualism;

> "Because Internet accounts are person-based and not place-based, they are already way-stations on the move to person-to-person community. As high-band width wireless computing becomes prevalent, communicating computers will break their tethers and become placeless. There are already leading-edge indicators of this trend. Internet cafes in malls or

> on main streets allow travellers to keep connected, road warriors use global phone / Internet access networks to connect from hotels or businesses they are visiting, mobile phones are developing Internet capability. I know a computer consultant in Silicon Valley who uses a wireless modem to check her email at 8.a.m. while she watches her young daughter play in the schoolyard. As she sips her cappuccino, she is a multitasking harbinger of the convergent integration of mobile phone's ubiquitous, portable connectivity with the multifunctional power of a personal computer. As satellite links develop and technical standards for wireless communications evolve globally, the same wireless phone-computer will be able to reach the Internet as easily in Bora Bora as in Silicon Valley" (Wellman, 2001; p241)

Wellman's portrait hints at an affluent, 'well connected' individual possessing a certain privileged economic and social position. Of course not everyone has access to personal computers with satellite links and wireless communication capabilities and for some, internet cafes (with or without cappuccinos) remain alien places. This does not just imply a 'digital divide' between places like Silicon Valley and the large sections of (less developed) world that remain disconnected from global telecommunications networks, but also between Silicon Valley and typically (though certainly not exclusively) low income groups in the developed world for whom access to public transport, let alone a wireless connected personnel computer, remains difficult (see for example Hine and Mitchell, 2001; Hodgson and Turner, 2003; Kenyon *et al.,* 2002 for discussion of barriers to transport).

Literature about mobile networks suggests that social networks have become more widespread, less coherent, composed of fewer people sharing multiple (spatially specific) affiliations, and with less geographical proximity. While on the one hand telecommunications has increased the depth and quantity of some networks, it has not eradicated the need for face-to-face context. Instead, physical travel has become more, not less, necessary in the construction of meaningful relationships. For instance, in a networked society, people may see contacts less often, and thus more effort has to be put into nurturing and maintaining networks, either through increased time devoted to navigating telecommunication technologies, or in facilitating face-to-face contacts (Cass *et al.,* 2005; Boden and Molotch, 1994; Urry, 2003). Consequently, there have been calls for more consideration of the role of individual action and choice in negotiating and engaging with existing, or developing new, social networks (Axhausen, 2005; Cass *et al.,* 2005 p551-553; Larsen *et al.,* 2005; Urry, 2000ii).

Rather than repeat the outcomes of these calls here (see instead Larsen *et al.,* 2005), I instead want to highlight some additional issues. The first concerns the ongoing relevance of geography in networked lives. Contrary to some ideas (e.g. Cairncross, 2001; Wellman, 2001), space still matters for everyday connectivity for four reasons. One, face-to-face contacts, and corporeal travel, continue to preserve the benefits of meetings in real time and spaces, even if such proximity is achieved less often than in the past. And of course, some people, in some places, still communicate with others in their immediate social locale. In particular, home-based women involved for example in childcare, or social groups such as the elderly, young people, or the poor, may all have locally-situated networks. Two, not everyone is connected to the internet, can afford the luxury of transnational travel, or even have adequate access to localised physical transport. Such individuals will continue to rely on face-to-face

networks grounded in 'real space'. Three, individuals remain embodied in physical space, even when connected to the virtual realm of the internet. Even if this space is fluid (afforded by mobile technologies such as laptop computers or mobile phones), it is nonetheless a physical presence. And four, 'networks' remain placed. While Larsen *et al.,* comment that "the reason why commentators like Putnam have found a death of communities is that they have looked for them in the wrong *places*" (2005; p23 *my emphasis*), they still hint that such communities exist *somewhere*. Even virtual networks remain located in a type of space, for as the emotional commitment of members of some online communities demonstrates, for many, 'cyberspace' has become a 'cyberplace' (Rheingold, 1993).

The second concerns the need to understand the ways in which social networks develop in specific contexts. As Laurier (2001) asks, if space is so irrelevant for mobile communication, 'why do we say where we are during a mobile phone conversation?' One reason, perhaps, is because of the ongoing need to place people, objects, communications, and interactions in context. As Boden and Molotch (1994) argue, even if it is not possible to see another person face-to-face, the social space they are communicating from still frames how communication occurs. Consequently space and time, as critiques of Granvoetter have argued, are important in shaping social networks. Of course, understanding the structure of social networks is important, but this structure must be understood beyond the confines of a dyadic relationship. For people's relationships do not drift unanchored in a vacuum:

> "Networks… are more than the sum of discrete two-person ties, floating in physical and social space. They are structures that help to determine which persons are available for interaction, what resources are available for use, and the extent to which these resources can flow to network members" (Wellman *et al.*, 1988; p153)

Consequently, some have explored the ways in which context contributes to the ways in which individuals engage with others through networks, or explored the impact of context on the reproduction of networks. In part, this stems from the idea of networks as structures or structuring. For if social networks represent a particular kind of 'structure', then they must posses enabling and constraining elements (Cant, 2004; Cattell, 2004). Yet while a sociological literature exists about the 'context' of friendship (e.g. Adams and Allen, 1998; Pahl, 2001), there is perhaps a need for more consideration of what the impact of this context is on the relationship between an individual and his/her contacts might be. Knox *et al.* (2006) consider this issue in their thinking about new types of network research. They contrast two disciplinary approaches to network research; one, based on the quantitative methods of social network analysis, and the other based on ethnographic accounts of networks presented by social anthropologists. This distinction maps onto the difference commented on above between the quantitative based analysis on networks typified by social network analysts, and the qualitative analysis of networks by ethnographers. Knox *et al.,* (2006) criticise the quantitative abstraction of some network analysis that appears to "erase all social connection" (p116) but also recognise that social networks, while remaining cultural forms, appear to be more than mere representational tropes. They draw on the work of Riles (2001) to consider the implications of networks being both a descriptor of social relations, and a descriptor of itself, through processes that make or affirm those relationships such as 'networking'. In essence, they suggest that while some take networks to

be metaphors for social relations, some may see them as objects for analysis, and others as prescriptions for how to organise, as performed actions. For Knox *et al.* (2006), it is precisely this tension in thinking about networks that makes them so useful.

A third issue concerns the relationship identity and life course events. For both the network approach presented by Wellman and Wittel's (2001) review of networked sociality hint at the importance of networked-communities as markers of identity. Wellman for example defines networks as "interpersonal ties that provide sociability, support, information, a sense of belonging and social identity" (2001; p228). Here the idea of a network goes beyond issues of resource distribution, reciprocity and even trust, to hint at their relevance to facilitate a sense of belonging, that is, a form of 'communityness' (Delany, 2003). The links between networks and personal development have been explored by Bidart and Lavenu, (2005). Their longitudinal study of school leavers in France tracks the evolution of personal networks and changing life events (Table 3). They show how networks are constructed and deconstructed alongside life changes and an evolving identity.

What this points to is not only the posing of more research questions (e.g. Wellman, 2001; pp 243-244; Urry, 2002; pp 270-271), the collection of better empirical data about social networks (Axhausen, 2005; Larsen *et al.*, 2005) and greater rigour in the collection of that data (O'Reilly, 1988), but also a more fluid and malleable set of methods that offer a more sympathetic understanding of social networks grounded in spatial and temporal context.

Table 3: Links between life events and evolution of personal networks (see Bidart and Lavenu, 2005; p373)

Life event	Impact on personal networks
Leaving school	Massive loss of 'contextual' relationships, partly assimilated to 'weak ties'.
Beginning employed work	General transformation of sociability towards greater selectivity based on homogeneity. Number of network members declines with less value accorded to weak ties. However, for the more disadvantaged, a job permits greater social life and increase in network size.
Long term relationships	Initially favours the addition of new ties through the partner's network. However, when a couple move in together, sociability can drop. A break-up can favour a resurgence of richer sociability. Birth of children can contribute to a decrease in the size of a network.
Geographic mobility	Initially produces a significant decline in the number of network members. Over time new ties are created in the new environment. For students arriving at university, this initial drop is brief and limited.

Conclusion

The literature on social networks, community, and mobility is vast. Larsen *et al.*'s (2005) report to the UK Department for Transport on *Social Networks and Future Mobilities* has combines much of the recent literature the present state, and future potential, of social network research in the UK. Consequently it has provided the grounding for this review. Their organisation of this literature culminates in a paradigmatic call for a 'sociology of mobility' (e.g. Axhausen, 2005; Larsen 2004; Sheller and Urry, 2006; Urry, 2000i; 2000ii; 2002; 2003). Of course, this is not the only possible future for network research and there remains a wealth of research pointing to alternative visions of a future that embraces other ideas about 'virtual', 'real', and 'imagined' communities (e.g. Anderson, 1983; Delanty, 2003; Doheny-Farina, 1996; Eade, 1997). In part, Larsen *et al.'s* (2005) view of networked communities facilitated through mobility and communication is based, albeit implicitly, on underlying processes such as time-space compression and technological change. Consequently (and perhaps inevitably), they have omitted a considerable body of work about the politics of representation, difference, and processes of inclusion and exclusion in the field of community studies (e.g. Anderson, 1983; Nancy, 1991; Panelli and Welch, 2005; Silk, 1999; Young, 1990). Moreover, the links between these bodies of work and analysis of social networks remain, to a large degree, unexplored. Of course, no one text can take account of such a diverse and contested subject as community and future opportunity lies in attempting to see how contemporary thinking on networked communities can engage with these and other sociological concepts.

This review has considered the shifting terrain of 'community' research. There may be widespread agreement that;

> "[t]he big change from door-to-door to place-to-place community is old news – apparent to all but politicians and community scholars habituated to thinking of neighbourhoods as the only possible sense of community. If community is defined socially and not spatially, it is clear that contemporary communities are rarely limited to neighbourhoods" (Wellman, 2001; p233).

However, there is a need to move beyond binary categorisation of the 'community' idea being either social or spatial to explore how the social and the spatial interact in the reproduction of individual and group relations, contacts and ties. For as argued here, context, such as space and time, may still play a role in network formations. This may be particularly so for individuals in less affluent neighbourhoods, or for those who have restricted access to public transport. Consequently, it remains important not to succumb to the lure of pithy statements about 'the death of distance' (Cairncross, 2001) or triumph at how the "mobile phone frees people from spatial fixity" (Geser, 2004; p4) in networked societies.

This review has presented only a partial overview of the current state of research into social networks. Although attempting to draw out a few choice summation points is difficult, some key messages do emerge. First is to question the (often implicit) links between the idea of community and ways of understanding social networks. Of course, not all social network research is about community just as not all community research concerns social networks. The transition from door-to-door, to place-to-place, and then to person-to person forms of contact, and

the rise of individualised networking (e.g. Castells, 1996; Larsen *et al.*, 2005; Wellman, 2001; 2002 and others) frequently makes reference to the replacement of spatially organised communities with individual centred relationships situated within a 'networked community'. A brief review of the literature about social networks reveals some weaknesses in the approach. These range from methodological concerns about 'measuring' or assessing networks empirically, through to conceptual debate about how relationships within networks are understood, and wariness about the pragmatism behind some decisions about how to capture social networks in the research.

Second, and in response to this, some are calling for a refined approach to social networks with the networked individual paradigm premised upon different forms of mobility (e.g. Urry, 2000ii). While some point to the need for more research into the "spatial distribution of members of a person's social networks" (Axhaussen, 2005; p97), further work is required, for example around the ways in which relationships are created and reconstituted through the physical and technological materialisation of those networks. There is already evidence that individual attributes may affect the formation of networks. For as Wilding (2006; p135) has remarked;

> "distances and the capacity to overcome them, are… perceived differently by different social actors at different moments in time, depending on where they are located and which social relationships they wish to emphasize or suppress."

Third, and consequently, the final section of this review has explored some of the silences in the network literature about the relevance of spatial context. While there is much work that has not been covered here (e.g. Adams and Allen, 1998 and Pahl, 2001), in some cases the importance of context remains somewhat subdued. It is easy to call for more work that combines different disciplinary dimensions. Nevertheless, research that is able to blend temporal and spatial context into a more fluid or mobile, understanding of social networks while remaining conscious of both the structuring and the metaphorical nature of these networks, could achieve a more nuanced account of connected lives in contemporary society.

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