

Weak Tie Relationships in High Density Residential Areas, and the Types of Spaces Used to Maintain Them

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Abstract: The next few decades will see a significant increase in high density development in strategic centres in Australian cities, if current city plans are put into practice. The social consequences of this shift towards higher density are profound and will have a significant impact on Australian cities' social sustainability. An important, yet often overlooked, aspect of this social shift is the different ways in which people interact within and around the buildings in which they live. This paper presents findings from a study of weak tie relationships within and around a high density apartment complex in Sydney. Eighteen residents were interviewed about the weak tie relationships they maintained within 400 metres of their apartment building, and asked to mark where they saw their weak tie contacts on area and building plans. A wide variety of spaces was used by residents to maintain weak ties with others living and working in the area, for a variety of reasons. Weak ties were maintained in spaces where activities were held, that were regularly used through attractiveness (of space or products) or necessity, and/or that catered to particular interests which allowed users to infer other users were similar to themselves. Weak tie relationships are particularly important in a local high density environment because they provide low-level social and practical support while maintaining privacy. The research provides insights into how people use spaces socially in high density, and which kinds of spaces are likely to facilitate the maintenance of weak ties. These findings can inform the design and planning of socially sustainable high density areas.

Introduction

All major Australian cities currently have metropolitan strategies that promote urban consolidation (Forster, 2006, Easthope *et al.*, 2014), but the social consequences of the planned shift to higher density living are unclear. Past experiences with the social outcomes of higher density living have been mixed (Jacobs, 1961, Evans *et al.*, 2003, Gifford, 2007, Hill, 2014) and social isolation and alienation are common problems in urban areas (DeFilippis, 2001, Foth and Sanders, 2005, Gifford, 2007, Easthope and Judd, 2010, Lapitan *et al.*, 2011). Meanwhile, the increasing diversity of our cities may also increase the chances for disconnection between different societal groups (Sandercock, 2003, Talen, 2006). A series of Australian academics have discussed and debated the social outcomes of higher density living (Easthope and Randolph, 2009, Baker, 2013, Townsley *et al.*, 2014) and neighbourhood densification (Davison, 2011, Davison and Rowden, 2012, Ruming *et al.*, 2012, Ruming, 2014). There remains a need, however, for investigation into how high density residential areas can successfully meet the social needs of their residents, neighbours and the wider city. An important part of this question is how higher density residential areas can be better planned and designed to meet these social needs. This paper presents the outcomes of a study designed to address this question, focusing on the impact of building and urban design on the ways in which people interact within and around the buildings in which they live.

This research is significant in that it seeks to discover what value one component of socially-sustainable cities (weak ties) has for residents of a high density residential area, in what spaces these weak ties are maintained, and what relationships exist between use of space and weak ties. This has practical implications for the design and placement of high density residential developments, and policy implications in terms of facilitating socially-sustainable cities, defined as equitable cities with "communities that can sustain and reproduce themselves at an acceptable level of functioning" (Dempsey *et al.*, 2011). After briefly reviewing the existing literature on compact cities, weak ties and their relationship to the environment, the paper describes the method and discusses the research findings as well as their application to planning, policy and practice.

The Move towards Compact Cities

Over the next thirty-five years, the population of the world's cities is projected to almost double, with 6.4 billion people expected to be living in urban areas by 2050 (World Health Organisation, 2014). In Western countries the suburbanisation trends of the twentieth century are giving way to policies encouraging higher residential density, as governments recognise the need to house everyone with minimal impact on the natural environment and arable land (Kenworthy, 2006, OECD, 2012) and with the most efficient use of existing infrastructure (Breheny, 1995). The focus of urban planning has shifted towards compact, walkable cities rather than low-density cities, for social as well as environmental reasons (Kenworthy, 2006, Dempsey *et al.*, 2011, Haarhoff *et al.*, 2013, NSW Department of Planning and Infrastructure,

2013), with cities across Australia, Europe and North America instituting compact city planning policies (Bramley and Power, 2009, OECD, 2012, Haarhoff *et al.*, 2013).

Compact city policies generally promote greater accessibility to services and workplaces, higher densities and mixed residential and commercial uses around public transit (Burton, 2000, Kent *et al.*, 2011, OECD, 2012). These approaches are justified with reference to their assumed benefits for improved environmental, economic and social sustainability, including reference to the importance of particular built forms for supporting and encouraging social cohesion and local community (Dempsey *et al.*, 2011).

Debate continues, however, over whether a 'compact city' is the best way to ensure sustainability (Neuman, 2005). It is difficult to predict long-term outcomes of a shift from lower densities to higher densities, and unclear whether the predicted benefits will be achieved (Randolph, 2006). In Australia, the expectation of eventually moving to a suburban stand-alone house creates problems of transience for high density developments, as well as discouraging developers from providing high density housing suited to families (Randolph, 2006). Increased transience is associated with lower levels of neighbouring and sense of community (Farrell *et al.*, 2004), and so reduced social sustainability.

While higher density means more people and correspondingly greater opportunity for social interaction, difficulties with privacy and real and perceived safety mean that social isolation and alienation are pressing problems in high density urban environments today (DeFilippis, 2001, Foth and Sanders, 2005, Gifford, 2007, Easthope and Judd, 2010, Lapitan *et al.*, 2011). Gifford (2007) notes that having so many strangers living in close proximity can lead to fear of others and a lack of community amongst many. High density development may also result in fewer spaces in which people may run into acquaintances. In their United States study, Jeffres *et al.* (2009) found that people living in cities were more likely to say there was nowhere to chat informally than people living in suburbs or small towns. This means that the social interaction needed to build relationships, which underpin social sustainability, is less likely to occur.

Weak Ties

If high density residential areas are to be socially sustainable, they must be able to support relationships between their residents and other users of the area. Communities are made up of many different types of relationships, varying in strength from close family or friendship ties to weak ties of mutual recognition (Granovetter, 1973, Marsden and Campbell, 1984, Henning and Lieberg, 1996). Given the number of people and their existing relationships, which may range across a very wide geographical area (Wellman, 1979, Schiefloe, 1990), it is not feasible to expect residents to maintain many strong relationships amongst themselves. It may therefore be more beneficial to look for ways to promote weak tie relationships (Granovetter, 1973) in high density residential areas.

Weak ties are relationships with low associated time and emotional investment (Granovetter, 1973). People may have many more weak ties than strong ties, due to their needing less time and energy to maintain (Adler and Kwon, 2002), and weak ties are more likely than strong ties to form between heterogeneous individuals and groups (Granovetter, 1973). This means weak ties can bridge groups, increasing societal cohesion through passing along information, values and norms as well as allowing access to a wider range of resources (Granovetter, 1973, Bourdieu, 1986, Adler and Kwon, 2002). Weak ties are useful for creating well-rounded, tolerant people, because they afford access to diverse opinions and opportunities, and allow people to better imagine walking in others' shoes (Granovetter, 1983). Weak ties within a neighbourhood can provide locally-available social and material support, which is especially important when one's strong ties are spread across large geographic areas (Henning and Lieberg, 1996). They are also invaluable during disasters and disaster recovery, allowing first-response aid networks to be quickly set up and reducing the possibility of individuals being overlooked (Granovetter, 1973, Bridge, 2002, Godschalk, 2003).

The increased mobility of modern urban societies means that strong ties that might once have been formed within a neighbourhood are now based across a wider geographic area (Wellman, 1979), and that weak ties are now the building blocks of neighbourhood-based community (Henning and Lieberg, 1996).

Relationship between Weak Ties and the Environment

Weak ties are generally maintained through familiarity and repeated interactions in the neighbourhood, such as greetings and short conversations (Skjaeveland *et al.*, 1996, Kuo *et al.*, 1998). For these

interactions to occur, people need to be out and about in a physical or virtual environment (Jacobs, 1961, Petróczi *et al.*, 2007).

Some types and features of spaces can facilitate social contact and interaction, and so relationship formation. Many studies have investigated different aspects of common space and their relationship with social interaction, finding that edges (Gehl, 2010), protection from weather (Whyte, 1980, Mehta and Bosson, 2010), the presence of other people (Whyte, 1980, Gehl and Svarre, 2013), mixed use areas (Jacobs, 1961), seating (Gehl, 2010), more-private areas (Whyte, 1980, Raman, 2010) and green space (Kuo *et al.*, 1998) can all facilitate lingering and social interaction, while purpose-built community rooms generally do not get much use (Lette, 2011). The layout of buildings and common spaces has also been correlated with different levels of social interaction in neighbourhoods (Raman, 2010).

The relationship between the environment and social behaviour is not direct, however, being mediated by factors such as norms, perceived homogeneity and preferred level of sociality (Wohlwill, 1974, Schiefloe, 1990, Aronson *et al.*, 2010). A perception of high numbers of people in a space and feelings of crowding can reduce social interaction (Gifford, 2007, Dempsey *et al.*, 2012); according to Adaptation Level Theory (Wohlwill, 1974), when people feel exposed to too much social contact, they are likely to withdraw physically or psychologically, avoiding eye contact and using closed-off body language (Wirth, 1938, Jacobs, 1961, Goldberger, 1996). Privacy is therefore extremely important in high density areas, and for individuals a lack of interaction in one's neighbourhood becomes a problem only when it is not a choice. Foth and Sanders (2005) stress that some people are quite happy not knowing their neighbours and social interaction should not be forced upon people in cases where they do not want it.

Investigation into the Environmental Factors Supporting Weak Ties

Compact, high density development sometimes leads to adverse effects on social interaction and community, but evidence shows that these effects are due to factors such as poor design, lack of diversity and lack of infrastructure rather than density *per se* (Jacobs, 1961, Wilson and Kelling, 1982, Raman, 2010, Williams and Pocock, 2010). Many current high density developments are poorly serviced by local open space (Searle, 2009), have common areas that are uninviting or relatively little used (Foth and Sanders, 2005, Lette, 2011), and may support few relationships between residents (Gifford, 2007, Raman, 2010). In order to ensure that future developments can support desired social interaction, it is important to investigate the ways in which people get to know each other in high density neighbourhoods and the role of the built environment in encouraging these connections.

There is a need for continual assessment and observation of behaviour in spaces to ensure that neighbourhoods designed for community deliver on their promises (Talen, 1999). While there have been many studies on social behaviour in wider public spaces, there have been fewer discussing environmental factors facilitating social interaction in private residential buildings. This research considers social interaction at the building scale (in addition to the neighbourhood scale) to contribute to the sparse research on the relationship between the built environment and social interaction at this scale, especially in Australia.

Method

The study sought to identify common spaces in a high density residential area in which weak ties were maintained, investigate why they were maintained in these spaces, and examine the value residents placed upon these ties. A case study approach was used to enable in-depth investigation of a particular area, and a large mixed-use complex was chosen in an area zoned for high and medium density in Sydney. This complex incorporates over five hundred apartments across five buildings, with a large garden, resident gym and swimming pool. These are set atop a podium containing a mall with more than fifty shops, restaurants and cafés, making it suitable for investigating which spaces are most often used to maintain weak ties when a range of spaces are available. The surrounding area also contains many street-fronting shops, cafés and restaurants, a library, community centre, two schools and other amenities.

The research focus on common space called for an efficient method of collecting location data. Foland and Lewicka (2007) describe a method wherein participants mark places on a map according to meaning, for example liked and disliked locations, and the maps for all participants are then combined to show the most-liked and least-liked places through colour intensities. This psycho-cartography method collects spatial data that can be both objective, such as common space used by the participant, and subjective,

such as meanings associated with that space, and the data can be compared between participants. Concurrently, participants can discuss the space and their use of it, producing rich qualitative data. Due to the research focusing more on social behaviour than psychological representations of place and to differentiate the method from that used by Foland and Lewicka (2007), the approach adopted here is termed 'socio-cartography'.

Eighteen participants were recruited through the case-study complex's executive committees, posters and flyers, and through researcher approach in the complex garden. All participants completed semi-structured interviews, including socio-cartography. The socio-cartography was conceived primarily as a tool for prompting and enriching the qualitative discussions and, given the relatively small number of participants, its findings should not be considered standalone. Participants included twelve men and six women from a range of cultural backgrounds including Australia (four participants), South-East Asia (four participants), North-East Asia (four participants), the Middle East (two participants), Europe (two participants), and Southern Asia (one participant), with one participant not stating their cultural background. Six participants were in their twenties, six in their forties, five in their thirties and one in their fifties. Four participants lived alone, and eleven rented their apartments as opposed to owning them.

Participants were asked about their use of common spaces within their complex and within 400 metres of their complex in relation to three different types of weak ties, following categories put forth by Henning and Lieberg (1996). These are: helping ties, where individuals can call on each other to, for example, borrow tools; greeting ties, where individuals might stop and talk when passing; and acknowledgement ties, where individuals may recognise and nod to each other but have no greater interaction.

The socio-cartography method in conjunction with interviews was used to identify which common spaces in an area are successful in terms of supporting interaction, and to investigate the reasons behind their success. This paper focuses primarily on the qualitative findings, given the low number of participants, but the quantitative socio-cartography data provides an extra and rich layer of information and understanding to the spoken interviews. It was also a useful way to test the method so that it might be used in future studies with a larger sample, to make more generalisable conclusions. This method could be used by other researchers for any investigation of relationship ties or activities associated with spaces. It may also be useful in studying the impact of a new complex on the surrounding common spaces and neighbourhood social ties, enabling a better understanding of the effects of densification.

Findings and Discussion

This section first covers the research findings on the value of weak ties to participants and the spaces in which participants' weak ties were maintained. This is followed by a discussion of the application of the findings to planning, policy and practice, and recommendations for further research.

Value of Weak Ties

The majority (14/18) of participants believed that having weak ties in the neighbourhood was valuable (though it should be remembered that these participants may not be representative of the wider population). Helping ties were considered especially important by participants who did not have family close by, reducing the stress associated with living in a place where one knew few people. B, a woman in her 30s, explained, "If I have an emergency situation, I have someone I can call and ask some help [...] so I think, I feel relieved, you know, living in here."

Several participants mentioned the importance of weak ties for daily social interaction, which was seen as a stress release and a way to feel part of the world, especially if participants had little social contact in other areas of their lives. M, a man in his 20s living alone, noted "Even just saying hi, [...] going and buying lunch or going to Coles, [...] if they say hello to you, it's good 'cause you've got out of the house and you've got, yeah, someone's said hello to you." This indicates that weak ties can aid in reducing the social isolation of cities (DeFilippis, 2001, Foth and Sanders, 2005, Gifford, 2007, Easthope and Judd, 2010, Lapitan *et al.*, 2011) through providing low-level relationships which may, as participants noted, become stronger ties given time and repeated interaction.

Other participants valued the role of weak ties in enabling them to exchange culture and knowledge, and making the area feel more "homey" (Participant I, female in 20s). The latter supports Henning and Lieberg's (1996) finding that weak ties help to create an atmosphere of home. Participants, however,

differed in the type of interaction they preferred. Two participants were satisfied with having only acknowledgement ties in their neighbourhood, noting that they could find social interaction in other areas and feeling that greeting and helping ties took up too much time and effort. "I like to have friends," said A, a woman in her 40s, "but just talking, I can talk at work". Conversely, several other participants did not place much value upon acknowledgement ties and were satisfied with those they had, but these participants wanted more helping and greeting ties. Preference for ties could also differ according to reliance on strong ties in the area and strong and weak ties outside the area, as well as household type; every participant living alone wanted a greater number of greeting ties.

The participants who felt that weak ties were not important talked about the value of having their own space, and noted that these relationships would take up time they did not have. They also said that weak ties were "just, like, acknowledging the other people in the area" (Participant F), implying a simple courtesy, and felt that their need for social interaction was fulfilled by friends, family and colleagues outside the area. This indicates that while weak ties should be supported through providing common spaces in which to maintain them, it is also important that residents are able to choose not to interact and can maintain privacy.

The potential for weak ties to bridge different groups was not demonstrated in this research, contradicting Granovetter's (1973) reasoning that weak ties facilitate societal cohesion due to their likelihood of connecting heterogeneous people. Weak ties in the study tended to be between people who shared the same cultural background or had some other point of similarity. This might imply that barriers between groups were in most cases too high to be bridged by weak ties. A potential explanation is that people from different cultures are likely to have different standing patterns of behaviour (Barker, 1968), and that this can complicate interactions. E, a man in his forties from South-East Asia, remarked "the culture's different [...] you try to be polite but the other culture says that thing is impolite". The increasing diversity of Sydney and other world cities makes cross-cultural understanding ever more important to improve the chances of creating a safe, sustainable society (Sandercock, 2003).

Three participants were considering leaving the area because they found it difficult to make connections with people. This is significant because it suggests that weak ties and social interaction in the local neighbourhood were so important to these people that they would consider moving in order to improve their chances of developing such social relations. This situation has the potential to be self-perpetuating in that high residential turnover reduces the likelihood of people getting to know each other (Bramley and Power, 2009), and so an area that performs poorly in facilitating the maintenance of weak ties can fall into a cycle of high turnover and low weak tie development.

Types of Spaces

Figures 1 and 2 show sociocartography for the spaces in which greeting ties (the most numerous ties) were maintained by participants in the wider area and in the case-study complex respectively. As evident from these Figures, the most common spaces for maintaining greeting ties for the eighteen participants were frequently-used spaces such as lifts, the residential garden, apartment common corridors, supermarkets, the local library and the school, but also a wide variety of cafés, shops and community facilities. While the number of participants means the quantitative findings are not representative of the wider complex or neighbourhood, qualitative findings around the reasons people use different spaces and the type of interaction experienced in them are informative.

Participants used spaces regularly due to a preferred atmosphere or, especially, a product. "It's *my* cup of coffee" stated a woman in her fifties, upon being asked why she used a particular café out of the many in the area. Spaces were also used regularly out of necessity, for example the lifts or the Coles supermarket that was used by all participants.

Participants also tended to interact with people in spaces such as cafés, the school, the lifts and the library, where users were likely to have something in common – common tastes or interests, children, or a common residence – that indicated a similarity and a possible conversation topic. W, a man in his forties, believed people talked to each other in the library because users have "a lot of similar interests, for example playgroup, for the kids". These kinds of spaces were also likely to have fewer people visiting them, and so a greater likelihood of recognising a stranger on a second encounter as opposed to, for instance, in a large supermarket.

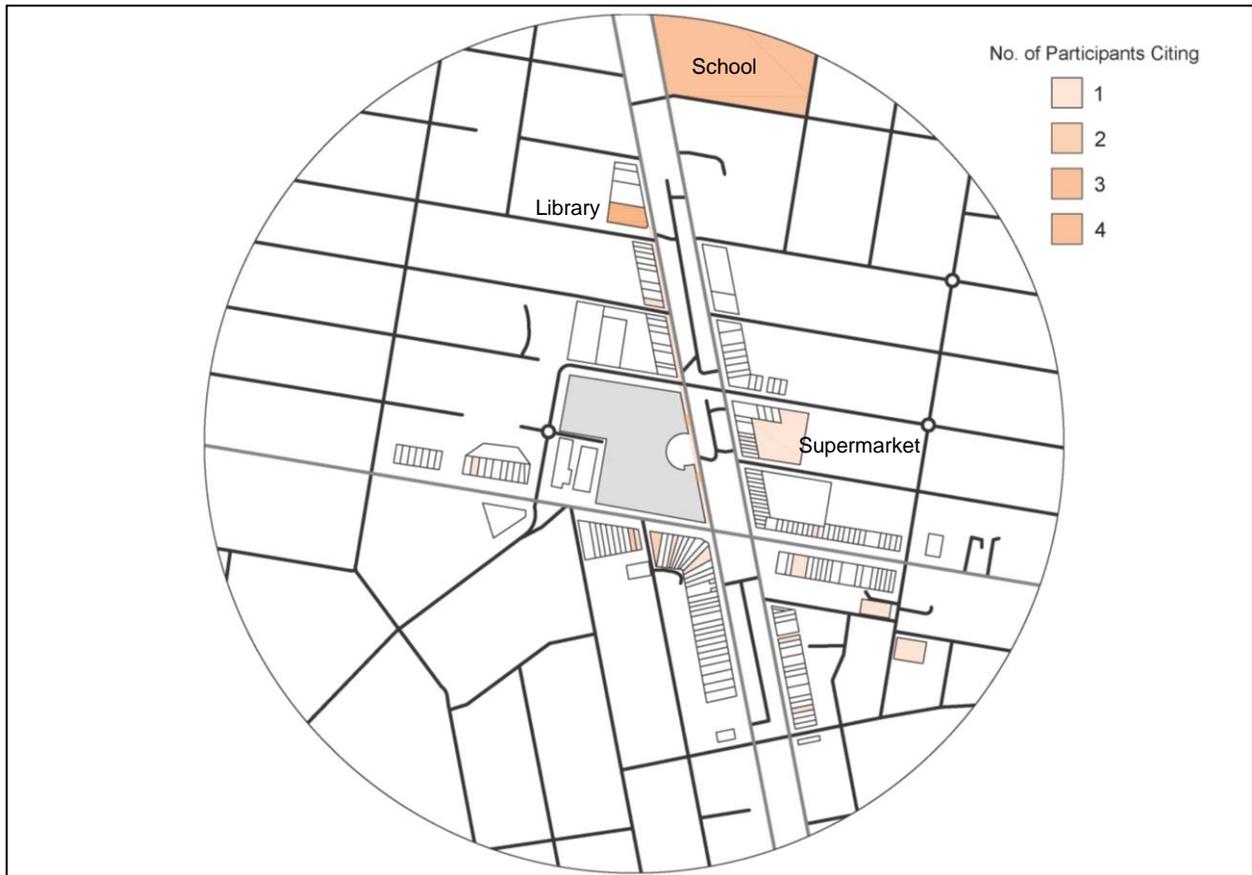


Figure 1. Greeting ties maintained within 400 metres of the complex, all participants (18)

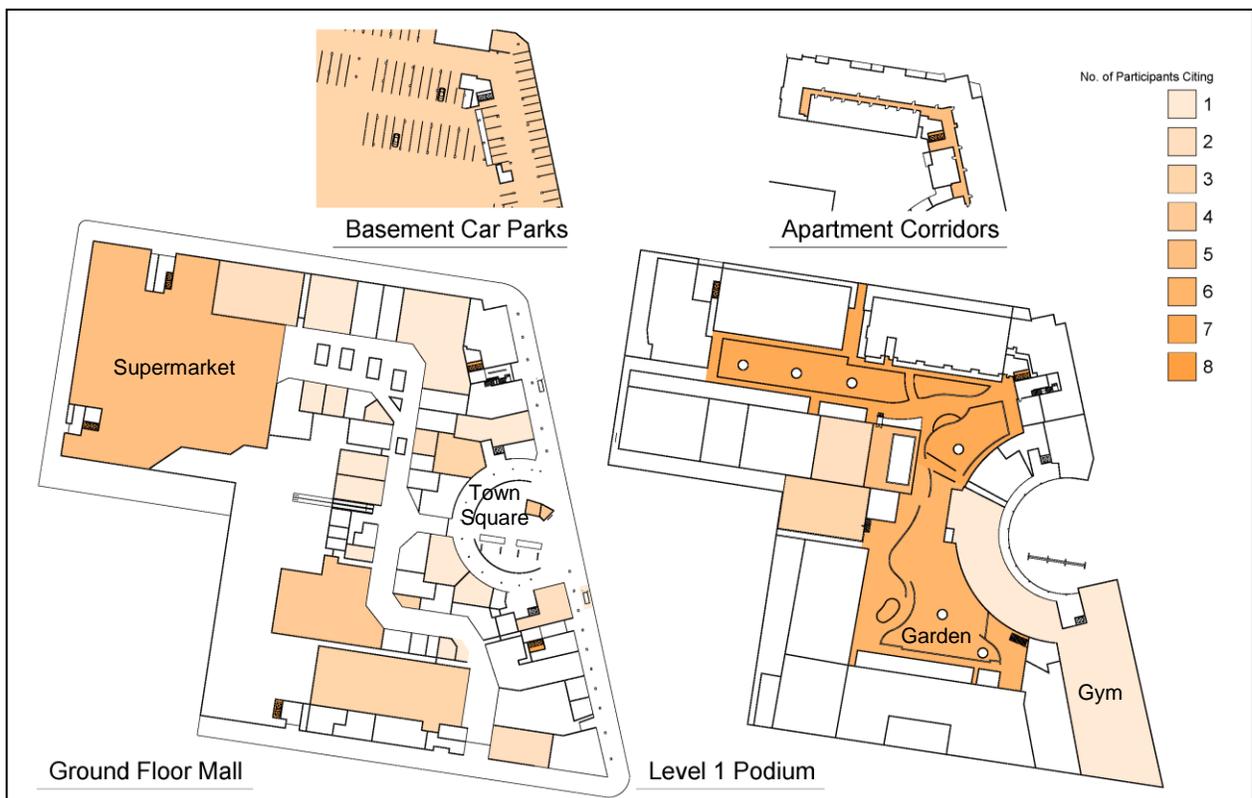


Figure 2. Greeting ties maintained in complex, all participants (18)

Spaces that afforded particular activities such as children's groups or gym classes were also commonly spaces in which weak ties were maintained, with the activity giving people a point of connection and a reason to interact. Spaces in which different activities can happen concurrently would therefore seem promising for facilitating contact between people with different interests or belonging to different groups. However, the low number of ties between groups amongst the research participants suggests that such spaces as exist now, such as the town square (Figure 2), may not actually be facilitating interaction.

Participants who used a high number of spaces in the area tended to have more greeting ties. This, while not necessarily representative of the wider population of the complex, is interesting in that it suggests that participants who spent time in a wider variety of spaces had more opportunity to make connections with people. This could have been due to being out and about for a greater amount of time or because participants were able to interact with more people. Further research around this possibility would be useful.

Overall, these findings suggest that high density urban areas need spaces that can host activities, are specialised enough that users have a common point of interest, and/or can encourage regular use through necessity or through being attractive (through space or products). When people cannot get the social interaction they desire or fulfil other interests in the local area, they are likely to seek these things outside the area or permanently move away to find them.

Application to Planning and Policy

Compact city policies, while advocating for higher residential densities, also need to ensure that the high density environments created are capable of sustaining meaningful social interactions. The extent to which the environment can have a positive impact on weak ties and social interaction must be considered, especially if time and money is to be invested in the built environment to achieve the compact, liveable, socially sustainable cities sought by plans and policy (Kenworthy, 2006, Dempsey *et al.*, 2011, Haarhoff *et al.*, 2013, NSW Department of Planning and Infrastructure, 2013). The question is whether that time and money might be better invested elsewhere, such as in community development or cultural awareness programmes that may have a greater impact.

This research suggests that features of the built environment and policy to support them are worthy of attention for two main reasons. Firstly, other interventions are reliant on an environment that at the very least does not inhibit social interaction (Wilson and Kelling, 1982). The design of the case study environment was of relatively high quality (not dangerous or inaccessible, and providing a range of facilities), and in most cases may not have inhibited social interaction to the extent that it was noticeable by participants. However, the fact that some participants felt unable to make satisfactory ties in the case-study area but had been able to in other areas suggests that aspects of the environment, rather than the individual, are inhibiting ties.

Secondly, the environment cues particular standing patterns of behaviour, and it is easier to change the cues in the environment than to change standing patterns of behaviour. Relationships are not one-way, and, if not perceived as congruent with standing patterns of behaviour, an individual's attempts to forge a tie may go unacknowledged, as was the case for several participants in this study. Participant G, for instance, wanted to exchange greetings with those on his floor, but had found in many cases that a neighbour "doesn't care, or doesn't respond".

Alongside social policies such as community programmes, planning policies and relevant design guidelines should ensure that high density residential areas can support weak ties. The findings of this study suggest that in order to enable low-intensity social interactions, common spaces in higher density developments should afford a variety of activities, be specialised for particular uses and interests (facilitating the formation and maintenance of weak ties between people with commonalities), and encourage frequent use. They should also offer differing levels of privacy and interaction so that people may choose their preferred level. Spaces like these are likely to attract people, encourage them to spend time there, and provide conversation-starters, aiding in the formation and maintenance of weak ties.

Application to Practice

The findings of this research have practical implications for the design and placement of high density residential developments to facilitate socially-sustainable cities. They may be useful in identifying which

types of common space might be successful in an area, as well as how existing under-performing common spaces could be improved. This enables public and private investment in an area to be more precisely targeted to use and social sustainability goals.

Designers and planners of future high density residential areas need to carefully consider the need for local connection when seeking to create compact, liveable, socially sustainable neighbourhoods (Kenworthy, 2006, Dempsey *et al.*, 2011, Haarhoff *et al.*, 2013, NSW Department of Planning and Infrastructure, 2013). Spaces that facilitate weak ties appear, from this research, to be spaces that host activities, allow people to infer that others using the space are similar to them, are regularly used through attractiveness (of space or products) or through necessity, and/or have standing patterns of behaviour conducive to social interaction. At the same time, spaces should also provide different levels of privacy, allowing people control over their level of interaction (Abu-Ghazze, 1999, Raman, 2010).

Limitations and Further Research

It is acknowledged that the findings from this case-study may not be representative of high density residential complexes more broadly, and that research participants may potentially have had a positive bias towards neighbourhood relationships. The latter is due to the fact that most participants responded to advertisements about the research, so were more likely to be interested in the topic.

Further research is needed in a number of directions. Firstly, the findings should be tested in other areas with a greater number of participants, as well as in areas with both mixed use and residential-only developments, and different commercial and community spaces, to determine whether they are unique to the area and participants or if they may be more widely applied. Secondly, more investigation is needed into how the barriers between cultural groups may be overcome while maintaining cultural diversity and customs. One of the benefits of weak ties is that they may connect disparate groups, but there are few examples of this happening in this study. Without weak ties between groups, society is likely to be less integrated with less understanding between groups, which can lead to conflict (Bourdieu, 1986, Forrest and Kearns, 2001, Adler and Kwon, 2002). Further research into the reasons that some spaces support the maintenance of weak ties while others do not would also be useful in further defining particular common spaces that facilitate social sustainability in high density residential areas.

Conclusion

Weak ties amongst residents and users of high density residential areas have the potential to reduce feelings of social isolation, aid people in their everyday lives and facilitate social sustainability while allowing privacy to be maintained. Most participants in the study wanted more weak ties in their local area, indicating a need for investigation into how this desire may be facilitated by the planned physical environment. In this case-study, the spaces that most effectively afforded the maintenance of weak ties were those that hosted activities, encouraged regular use through necessity or through the attractiveness of their space or products, and/or were specialised enough that users were likely to have common points of interest. If our increasingly compact cities are also to remain socially sustainable, it will be crucial that policy and practice ensures the adequate provision of spaces such as these in high density residential areas.

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