Normalising New Behaviour:

Networks and the uptake of environmental practices amongst small businesses in Australia

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Thesis Abstract

Climate change has created an imperative to modify human behaviour from its historical use of the earth as a resource and sink to new practices that are environmentally sustainable. Governments have attempted to influence voluntary behaviour change through social marketing, but their success with the small business sector, which makes a sizable contribution to the pollution load, has been largely unsuccessful. Small business owners are isolated, time poor, and focused inwardly on their businesses, making the process of large-scale contact and engagement extremely challenging.

The primary objective of this thesis is to identify a strategy for engagement of communities in the adoption of reluctant behaviours. The secondary objectives were to determine the role of social capital in creating norms of new behaviour, and to establish the process by which learning can underpin the transition from 'just knowing' to active participation in new practices.

Referencing the social capital, learning and environmental behaviour change literature, research was undertaken with three groups of small business owners to provide a comparison of the effects of social capital on learning. The results of this research demonstrate that creating sustainable change in reluctant behaviours can be achieved through an overt focus on learning and group norms.

The findings of the research have relevance to behaviour and attitudinal change beyond the environmental sustainability field.

Declaration

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

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PhD Candidate

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theory by the late 1980s in works by Coleman (1988) and Portes (1998), and came of age in the popular imagination with Putnam (2000).

The two pillars of social capital are 'bridging' and 'bonding' capital, with bridging capital crossing network borders to generate trust, reciprocity and exchange between groups, and bonding capital reinforcing and strengthening groups internally. These two social capital components are examined in the research from the perspective of learning from others outside the group (bridging) where bridges link numerous individuals (Anderson & Jack, 2002: 207) and internalising the learning within the group (bonding): 'the undercover activity – the learning activities as we are recognising them to be – are the oil between the cogs' (Falk & Harrison, 1998: 611).

Connectivity is especially important in the case of small business, which more so than large corporations[1], has strong links to its community (although as noted by Spence & Schmidpeter (2003: 93), the civic engagement of owner-managers is not always business-orientated, and local involvement can offer a change of focus and a different challenge). It is not unusual for the business to be located in or near to the owners' home, to support their local communities through sponsorship and donations and to provide services to local residents and businesses. Frequently, small business employs family and extends the family ethos to include staff (Doppelt, 2003: 247). However, in small business the links are weaker across businesses and business networks, with small business characterised as

[1] In South Australia, larger corporations are typically directed by head offices in other states or countries.

'independent, competitive and resistant to sharing' (Browning et al., 1995; Human & Provan, 2000, cited in Miller et al., 2007: 651).

Social capital has been proposed as a framework for resource management through its ability to support adaptive processes and collective action (Adger, 2003: 387), although the existence of social capital does not necessarily facilitate change – particularly in cases of strong bonding capital, which places the group at risk of stagnation (Dasgupta, 2003) – thus indicating a need for bridging to other individuals and groups to 'seed' ideas, knowledge and action, as illustrated by Adger:

> *Building trust and cooperation between actors in the state and civil society over adaptation has double benefits. First, from an instrumentalist perspective, synergistic social capital and inclusive decision-making institutions promote the sustainability and legitimacy of any adaptation strategy. Second, adaptation processes that are built from the bottom up and are based on social capital can alter the perceptions of climate change from a global to a local problem. When actors perceive adaptation to and the risk of climate change as being within their powers to alter, they will be more likely to make the connection to the causes of climate change, thereby enhancing their mitigative, as well as adaptive, capacity.* (Adger, 2003: 401)

The influence of networks on individual business owner behaviour is a pivotal area of enquiry in this thesis. Social capital provides a functional context for the study of peer influence in small business. The research uses three groups of businesses with different levels of social capital (a tight family-oriented business

group, a looser information sharing group, and individual businesses with few connections to other businesses in their locality) to examine the effect of social capital on member attitudes and behaviour. Hopper & Nielsen (1991: 215) tested intervention and information-provision without social influence and found that block leaders had the most substantial impact on behaviour change, changing norms and behaviour in spite of household attitudes.

There is limited literature that quantifies the benefits to small business from membership of networks and local business associations (Spence & Schmidpeter, 2003: 106), and still less on the consequences of business network/association involvement and improved environmental practices, although unpublished research by the author suggests a causal link. This research will test the relationship between membership and behaviour; specifically attempting to target the key influencers of improved environmental performance and the degree to which a shared culture contributes to environmental norms.

The juxtaposition of self and community is at the heart of the discussion of motivation in small business, with business owners continuously required to navigate the dichotomy between social norms and the individualised, profit-driven function of business. The role of voluntary groups in creating their own culture reflects Koza & Thoenig's (2003: 1228) view that culture is not an exogenous environmental factor, rather it is intra-organisational property that results from the demands of modern societies: 'the bonds of tradition, manifest in kinship, tribe and community, have been supplanted by individuals' membership in purposefully designed and administered organisations' (2003: 1219). This view is reinforced by Maguire et al. (2001, cited in d'Iribarne, 2003: 1285) who posit that

trust is built by actors (and is therefore not dependent on shared identity and inherited myths), and that organisational culture is not imparted by a community, but is a product of strategic actions by that community. Fielding et al. (2010: 14) suggest that when people identify in particular ways with behaviours or group norms (e.g. as a recycler or a water conserver), that identity is internalised and guides future behaviour. Hence the motivation of the two local business associations will be explored, examining the degree to which learning and environmentalism is promoted and reinforced, and how this influences member behaviour.

These themes will be examined in more detail in the literature review, which will position the study within the fields of social capital (Chapter 2) and shared learning (Chapter 3). The social capital literature will explore peer influence and the role of business networks and groupings such as local business associations, which for the purpose of this research are defined as 'voluntary, spatially-associated groups of business owners, formalised through incorporation and membership'.

Learning and sharing knowledge

This thesis contends that deep learning is essential to achieve voluntary behaviour change. In particular, the thesis tests the hypothesis that an extended experience of learning is needed to generate change that can be maintained over time. The distinction between information, knowledge and learning is central to this argument, and the thesis tests the proposition that although knowing and even participating in some environmental activities changes norms and attitudes (after

Hopper & Nielsen, 1991), deeper learning is needed to create change that can be sustained by the individual.

As discussed in the previous section on environmental practices, small business owners are the primary determinants of environmental values in their business (Schaper, 2002: 237). However, they suffer restricted exposure to staff knowledge because of the small size of their business (normally less than 20 employees) and, because they are primarily concerned with the running of the business, they lack the time to access the experience and knowledge of other business owners. Typically, small business owners have a low level of management education which reduces their capacity to undertake empirical research, and have poor access to online research tools (87.6 per cent of businesses employing fewer than 20 staff were connected to the internet in 2007-08, compared to 98.4 per cent of businesses employing 20 or more[2]). These factors create a situation where small businesses are increasingly disadvantaged in their ability to gain benefit from the vast but dispersed pool of electronic information, at the same time as organisations with the resources to invest in knowledge management gain greater advantage. Bertrand Russell (1943) observed that some knowledge is shared and accessible by the community, but much is held by individuals and cannot be made available to others without appropriate opportunities or environments that allow it to be transferred. Clearly small business owners need mechanisms that allow them to be exposed to new ideas, and to test and embed those ideas within the context of their business.

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Chapter 1: Introduction to the Thesis

While there is extensive literature on learning in the educational and organisational disciplines, there is very little specifically relating to small business and the environment, with the bulk of the literature concentrating on consumers, householders and communities. The exception is Roy & Thérin's 2008 article *Knowledge Acquisition and Environmental Commitment in SMEs*, which describes the results of research with 136 Canadian SMEs (20-250 employees) and discovers a correlation between environmental commitment and purposeful acquisition of external knowledge (Roy & Thérin, 2007: 256), where environmental knowledge is more likely to be gained from trade associations, suppliers and public agencies than from normal sources of business information. The authors conclude that environmental knowledge networks are a necessary tool for the development of improved SME environmental practices and that policy makers should be mindful of the role their programs play in supporting this approach (Ibid.: 2007: 257).

The saying 'we remember 5% of what we hear, 10% of what we read, but 90% of what we learn with others' (attributed to both Treichler, 1967 and Dale, 1969) resonates with Maslow's (1943) claim that sociality is needed for optimal functionality, and Lave & Wenger's (1991: 131) representation of learning as social construction: 'learners learn to function in a community by learning the shared language and acquiring the community's subjective viewpoint'. This reinforces the need for sociality and (by extension) social capital: 'learning in communities is about learning how the community behaves, what processes to follow, what attitudes and values to hold, language to speak and how to access the community's knowledge' (Ibid.). Vygotsky (1978, 1987) noted the tension

between individual development and group norms that underpins the connection between learning and social capital in this research.

This thesis contends that deep learning which uses evidence, relates ideas and organises the learning process (Entwhistle, 2000) is necessary to generate behaviour change, and that simply providing information is unlikely to create an effective catalyst for individuals to consolidate information into useful knowledge. Hence the concept of single, double and triple loop learning (Argyris & Schon, 1978; Swieringa & Wierdsma, 1992; Flood & Romm, 1996) is introduced to explain the mechanisms of paradigm shift – with single loop learning supporting a change to mental models within an existing paradigm; double loop enabling reflection and deliberate questioning of core assumptions (leading to exploration beyond the paradigm); and triple loop learning questioning the foundation values and norms that allow a transition to new paradigms. The single/double/triple loop theory is critical to the issue of corporate environmental behaviour, as sustainable environmental practices require businesses to move beyond the simple commercial paradigm of maximising profits and reducing costs (single loop); and beyond the questioning of core assumptions about profitability as the single purpose of business (double loop); to a quite different way of thinking that challenges long-held corporate resource and waste values and relearns them in terms of environmental concepts such as carbon neutral and cradle-to-grave (triple loop).

Learning requires more than simple information provision. To achieve triple loop learning learners need to be motivated, trained and supported in the process, and (it is suggested by Amin & Cohendet, 2004) some friction may be needed to

trigger a move from inaction to action. It is within this framework that the concept of tacit learning is introduced, proposing that context is an essential element of learning that brings meaning to knowledge (after Nooteboom, 2007; and Amin & Cohendet, 2004). Often described as 'at the elbow' learning, tacit learning requires a situated interplay between individuals, which in practical terms could involve working together on a problem or visiting a neighbouring business and discussing the issue on site. Based on learning theory, this thesis posits that contextualised, or tacit learning is highly suited to the transformational learning required by small business to effectively develop and implement better environmental practices, and fits with their needs for social interaction, shared activity, unstructured discussion and reinforcement of new ideas.

The assumption that small business owners lack access to tacit learning mechanisms will be tested in the field through examination of the role of the local business associations as agents of social capital that can reinforce norms of learning and environmental management, and facilitate double and triple loop knowledge generation opportunities. The influence of the group will be examined in relation to its role in setting the learning agenda (establishing the norm) and the development of a culture (relating to learning and good environmental practices) that is recognised, adopted and actively disseminated by members – once again highlighting the connection between triple-loop learning (where values and norms are examined) and social capital, which connects 'islands of interacting knowledges' (Brown & Pitcher, 2005) to facilitate change through new knowledge relationships.

Chapter 3 examines the literature about discovering, learning and behaviour change, and addresses Machlup's (1980) model of three knowledge-seeking states: stumbling onto the answer; not actively seeking information but receptive to ideas; and intentional search for answers. Concepts such as the consciousness of learning (implicit and explicit learning, after Jiminéz, 2002), the role of rational action (Mehan, 1984) and complex decision-making (Tversky, 1972; Quinn, 1976 in Mehan, 1984) will be explored in more detail and tested in the field research to identify connections between motivation, attitudes, learning and doing.

Significance of the research

There are extensive bodies of literature about learning and social capital, and to a lesser degree about environmental motivation and behaviour change, but very little literature about small business behaviour, and only isolated mentions of small business environmental practice (Spence et al, 2000). Relevant works in the small business environmental literature included Hillary's (2000) book *Small and medium-sized enterprises and the environment: business imperatives* that provides perspectives on small business attitudes, environmental management, and practical strategies. The book mainly discusses information and policy responses, but also addresses mentoring (Tunnussen: 219) and supply chain environmental management systems (Powell: 233), with Fay (in the forword to the book) calling for mechanisms that are appropriate to business size. Mir & Feitelson (2007) identified a lack of correlation between environmental awareness and action in small laundry and motor vehicle repair firms, supporting McKeiver & Gadenne's (2005) finding that the majority of businesses in their study were following a 'resistant strategy'.

Merritt's (1998) article *EM into SME won't go? Attitudes, Awareness and Practices in the London Borough of Croydon* found that market forces and intervention strategies had little effect on SME behaviour, a conclusion supported by Lawrence et al. (2006) who reported that personal values of the owner were the strongest influence, although Schaper (2002) found no relationship between attitude and firm environmental performance. Petts et al.'s (1999) article *The Climate and Culture of Environmental Compliance within SMEs* identified a disconnect between small business understanding of the importance of compliance and the feasibility of action, and this was also reported by Tilley (1999). However, by 2010 Revell et al. found that the SME 'intransigent stance' was slowly changing (2010: 273), a finding supported by Collins et al.'s (2010: 91) report of an increase of 10 per cent in the number of companies adopting environmental practices from 2003-2006.

Collins et al. (2010: 93) found that cost, management time and knowledge remained the greatest barriers. Simpson et al.'s (2004) exploration of competitive advantage through environmental practices also identified cost as a barrier, particularly for many small businesses where costs outweighed benefits (also reported by Taylor et al., 2003; and Hitchens et al., 2003), although Hitchens et al. found that SMEs failed to take up available advice even when the advice was of good quality (2003: 45).

The scholarly work closest to this thesis is that of Roy &Thérin (2008) whose article *Knowledge Acquisition and Environmental Commitment in SMEs* investigated the relationship between firms' knowledge acquisition activities and environmental commitment, finding a positive correlation, particularly when

information is provided by trade associations and suppliers. This thesis builds upon the findings of that research, making a deeper exploration of 'provision of information' in the knowledge acquisition process and identifying ways of triggering action through socially embedded learning practices that address the barriers noted above. Within the social capital literature, Adger (2003: 401) comments on perspectives of collective action, particularly strategies such as networking social capital to generate adaptive capacity that can be extended to state and civil society to create local awareness of global climate change.

Social capital is the subject of a broad-ranging literature. The focus of this thesis is on influence and learning within social capital networks as framed by Coleman's (1998) conceptualisation of social capital as a resource for action reflecting three forms of social capital: obligations and expectations, information channels, and social norms. Within this framework, the thesis builds on the positions established by scholars such as Granovetter (linking small scale interactions to large scale patterns, 1973); Burt (learning through structural holes, 2002, 2004); Upadhyayula (the absorptive capacity of firms, 2004); Nahapiet & Ghoshal (organisational advantage from the creation and sharing of knowledge, 1998); Lorenzen (social capital and localised learning, 2007); Kilpatrick et al. (learning across the boundaries of individual businesses, 1999); Cooke (social capital and group norms, 2007); Nooteboom (relational and cognitive proximity, 2000) and Cooke & Wills (government programs to promote SME collaboration and learning, 1999). This thesis connects these positions in the interface between groups, norms and learning – adding a motivational dimension to our understanding of how social capital influences behaviour.

Chapter 1: Introduction to the Thesis

Of the three main literatures investigated for this thesis, the most voluminous is that of learning – encompassing fields as diverse as education, cognition, organisational development and epistemology. Within this field, the thesis is positioned between Machlup's (1980) state of transition to knowing and Russell's (1948) distinction between social and individual knowledge, specifically looking into the nature of learning associated with conscious and unconscious thought (after Lakoff & Johnson, 1999; Jiminéz, 2002); the influence of situatedness (Rogoff & Lave, 1984; Nooteboom, 2004); and tacit knowledge (Amin & Cohendet, 2004; Harris & Deane, 2005).

The examination of knowledge as it relates to shifting social paradigms references Argyris & Schon's (1978) and Amin & Cohendet's (2004) work on single, double and triple loop learning. Based on this understanding of the nature of knowledge, a further connection is made between knowledge and behaviour change, acknowledging the contributions of Chamley (rational and adaptive behaviour, 1999); Guthrie (learning as an alteration in behaviour, in Dewey & Humber, 1996); and Katz & Lazarsfeld's (1955) work on action as a result of information transmitted through personal ties (also Rogers, 1962). Although leadership is not a core aspect of this research, leadership cannot be disconnected from social capital, and the work references Hopper & Nielsen's (1991) study of the influence of leaders on behaviour change. Thus the thesis contributes to the literature about knowledge, social capital − particularly learning and sociality as an influencer of behaviour − and enhances our understanding of motivation and behaviour in small business.

Chapter 1: Introduction to the Thesis

The size of the environmental load generated by small business, the apparent lack of benefit from environmental involvement, and the difficulty in engaging small business in activities that do not produce immediate returns, indicates a need for research that identifies environmental motivation in small business and how motivators might be applied to the problem of changing attitudes and behaviour. This thesis examines environmental practices in small business from two interacting perspectives: the individual and the social. Ultimately, all behaviour is enacted by individuals and therefore the influences that affect individual behaviour are critical to understanding behaviour change motivation. At the same time, behaviour is formed in social situations and behaviours need to be contextualised within social norms, which will be received both consciously and unconsciously through group culture, leadership, and personal connection. It is expected that the results of this research will contribute to the social capital behaviour change literature, and, because the research has provided a number of insights into practical interventions that have been successfully connected with behaviour change, to be applicable in fields as diverse as health, social inclusion and economic development.

CHAPTER 2: Social Capital Literature Review

Introduction

What is it that motivates behaviour change in small business? Profitability? Naturally. Customer demand? Of course. But leaving aside these core business imperatives, what motivates behaviour change by small business owners when there is no appreciable benefit to the business? This thesis examines pro environmental practices as an example of a reluctant behaviour, based on the assumption that for many small businesses, environmentalism is a cost with few corresponding direct benefits. Chapter 1 has provided an introduction to the three key themes of environmental behaviour change, social capital, and knowledge transfer. The following two chapters examine the literature underpinning the social capital theme (Chapter 2) and knowledge transfer theme (Chapter 3), specifically looking at how these two themes influence individual beliefs and behaviours.

Chapter 2 provides an overview of the social capital literature, examining the dissemination of knowledge between social capital nodes (citing Burt's structural holes and Granovetter's weak ties), and Svendsen & Svendsen's voluntary co-operation as a reinforcing mechanism. Other perspectives on the role of knowledge in social settings are examined, including the dichotomy between Ostrom's (1990, 2000) view of the normalisation of individual selfish behaviour and Grix's (2004) discourse on structure and agency and the role of social context

in guiding individuals; the role of trust and friction in generating and supporting interactions; and how attitude, belief and tradition can be changed through the creation of new norms.

The groups under investigation in this thesis are voluntary-membership local business associations. The literature around voluntary groups sits within social capital theory, reflecting on the views of Fukuyama (1995), Coleman (1998) and Olson (1965) that such groups serve a mutual purpose, and looking more deeply at the interface between the individual and the group (Stoljar, 1973). Pretty & Ward (2001) pose the need for internal and external group connections for connectivity to external agencies, allowing consideration of social capital as a policy instrument that seeds information into groups. The importance of proximity and group cohesion is discussed, as is the role of knowledge in group formation and maintenance.

Small business isolation (Putnam, 2000; Curran et al., 1993; Pyke & Sengenberger, 1992) is addressed within the context of business networks. The work of Granovetter (1973) and Burt (1992, 1998) is a particularly important framework for consideration of network strength, connections between groups, absorptive capacity and innovation.

Finally, this chapter considers the social influencers of behaviour, and reviews the literature about groups, social learning and environmental behaviour. The role of knowledge acquisition and individual behaviour is addressed in Chapter 3.

Social capital in context

Group development is supported through the generation, management and distribution of knowledge. This thesis considers how knowledge and learning, particularly learning within groups (in this case, local business associations), influences behaviour. This section of the chapter will consider groups from a social capital perspective, describing the evolution of social capital theory, how social capital works in networks and voluntary groups and the relationship between social capital and the sharing of knowledge.

According to Woolcock (1998: 155-159) the term 'social capital' was first used by Alfred Marshall in 1890 and later by John Hicks (1942) to distinguish between temporary and permanent stocks of physical capital. The use of the term in its contemporary context has been identified with Jacobs, Bourdieu, Passeron and Loury, but the widespread use of social capital is as a result of the empirical and theoretical work of Coleman, Burt, Putnam and Portes in the 1990s. It was at this time that key concepts in social capital (in particular the terms 'bridging' and 'bonding') were introduced, building on the earlier work of Granovetter (1973: 1360), who identified the role of networks in linking small-scale interaction into large-scale patterns, creating beneficial effects through connections between people and groups that are different and 'unlike' (Rydin & Holman, 2004: 119). During the last quarter of the 20th Century, economists began to appreciate that orthodox economic theory was unable to explain motivation and group decision-making processes, with Loury (1977, 1981) being the first to use social capital to explain these gaps. Portes (1998: 3) attributes Coleman's later conceptualisation

of the role of social capital in the creation of human capital to Loury's earlier work. Portes (1998: 8) also contends that Durkheim's (1893) theory of social integration and 'the sanctioning capacity of group rituals' influenced social capital theory, and his view has relevance to this thesis when considering the role of the group in guiding member behaviour.

Bourdieu (1986: 248-249) has been widely credited with establishing the concept of social capital in its contemporary setting, describing social capital as 'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition'. Bourdieu emphasised that social capital sat within 'durable networks', in which members are supported by shared credits of 'collectively-owned capital'. Thus social capital is not 'owned' by the individual, rather it exists in the relations among persons (Coleman, 1988: S100) and is the sum of the actual and potential resources embedded within, available through, and derived from networks of relationships (Nahapiet & Ghoshal, 1998: 243).

The role of networks has become central to the study of social capital: 'the core idea of social capital theory is that social networks have value' (Putnam, 2000: 19). Coleman and Loury based their theories on the importance of dense networks as a precondition for social capital, highlighting the value of dense ties to 'increase adherence to norms and thereby facilitate exchange without recourse to the formal system of law' (Barr, 2002: 92). On the other hand Burt's (1992) studies of social capital and career success identified the necessity of 'structural holes' where benefits were gained from information across networks, reinforcing

that Granovetter's (1973) 'weak ties' create innovation, learning and professional advancement because of the knowledge gained between groups. Weak ties allow group members who stand on the bridges between groups to be exposed to and adopt new ideas before they spread into their group. So the individuals who create the weak ties benefit from connection to a group as well as from exposure to new ideas. Group members who are not positioned or predisposed to stand on or near bridges benefit from innovation interpreted by those with weak ties. Granovetter (1973: 1367) concludes that 'individuals with many weak ties are best placed to diffuse difficult innovation, since some of those ties will be local bridges'.

Coleman made a key contribution to the social capital debate, again citing Granovetter's work (1998: S97), in recognising the need for co-operation to achieve a common goal and voluntary co-operation as a self enforcing mechanism in informal institutions (Svendsen & Svendsen, 2004: 27). Coleman summarised the social capital literature at the time: 'although social capital takes many forms, each of these forms has two characteristics in common: (1) they constitute some aspect of the social structure, and (2) they facilitate the actions of individuals within the structure' (Coleman, 1990, in Nahapiet & Ghoshal 1998: 244).

Cooke (2007: 80) identified social norms as a key element of social capital: 'the application or exercise of social norms of reciprocity, trust and exchange for political or economic purposes', where reciprocity was described as mutuality and returning favours. It should be recognised that not all social capital is good, as Putnam reminds us that social capital 'can be directed toward malevolent, antisocial purposes, just like any other form of capital' (2000: 22), with 'undesired

outcomes' (Woolcock, 1998: 158) as a result of the reinforcement of inward-looking sanctions (bonding social capital) and reduction of 'bridging' processes.

Putnam's work (1993, 2000) on civic involvement and social capital became a benchmark for social capital being viewed as the mechanism for cooperation based on 'features of social organisations, such as networks, norms, and trust, that facilitate action and cooperation for mutual benefit' (Portes, 1998: 18). Putnam concentrated on the distinction between *bridging* (or inclusive) and *bonding* (or exclusive) social capital: 'bonding social capital is good for undergirding specific reciprocity and mobilising solidarity … bridging networks, by contrast, are better for linkage to external assets and for information diffusion' (2000: 22) and that 'to build bridging social capital requires that we transcend our social and political and professional identities to connect with people unlike ourselves' (2000: 411). These concepts (largely through the popularity of Putnam's *Bowling Alone,* published in 2000) became widely known outside of the academic realm, and introduced social capital into vernacular language.

By the turn of the 21st century the framework for social capital theory had been laid, with some theorists claiming social capital as a possession of individuals, and others conceptualising social capital as the resources contained in relationships (Burt, 1992). According to Granovetter (1973), social interactions are the structural dimension of social capital, 'the sum of relationships within a social structure', whereas Tsai & Ghoshal (1998, in Anderson & Jack, 2002: 197) emphasise the relational dimension the 'direct relationships of the entrepreneur to others and the assets rooted in these relationships, such as trust and

trustworthiness'. Grix (2004: 48-49) saw this as the 'structure and agency problem', an interplay between the social context in which individuals act 'that guides, determines, constrains or facilitates their actions' and individuals 'who form and shape the social context and institutions around them'.

Providing a different perspective, Portes (1998: 7) contends that 'to possess social capital, a person must be related to others, and it is those others, not himself, who are the actual source of his or her advantage'. Cooke & Wills (1999: 224) identified social capital in both 'the origin and the expression of successful network interactions'; and Anderson & Jack saw social capital in terms of rational choice and embeddedness (2002: 196), where social capital is a 'basic resource which individuals use for their own self-interested ends' (rational choice), and 'connotes individual freedom of action … reciprocity or mutuality' that shapes agency through 'implicit rules and social mores' (embeddedness) (after Flora, 1998). Hence social capital provides benefits to individuals but creates obligations in turn.

The complex origins of social capital theory provide an insight into the variability of social capital definitions. Key theorists include Bourdieu (1986: 248-249):

> *Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectively-owned capital, a "credential" which entitles them to credit, in the various senses of the word.*

Coleman (1998: S98) provided a descriptive definition:

> *Social capital is defined by its function. It is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors − whether persons or corporate actors − within the structure… Unlike other forms of capital, social capital inheres in the structure of relations between actors and among actors. It is not lodged either in the actors themselves or in physical implements of production. Because purposive organisations can be actors ("corporate actors") just as persons can, relations among corporate actors can constitute social capital for them as well … [and (S100)] Social capital … comes about through changes in the relations among persons that facilitate action.*

Burt (1992: 9) clarified the relationship element of social capital in his definition 'social capital is a thing owned jointly by the parties to a relationship' where social capital 'is at once the resources contacts hold and the structure of contacts in a network. The first term describes whom you reach, the second describes how you reach.' (1992: 12). Lorenzen (2007: 811) saw social capital as 'a complex collective system of social relations and institutions' created in 'organic, collective and market-driven processes'.

Nooteboom (2007: 32) introduced goals, and defined social capital as 'contributing to goal achievement of actors on the basis of relationships, (where) actors may be individual people … (or) groups, such as firms or other organisations'. Schmid (2002, in Jordan & Manasib, 2006: 1093) contended that

social capital is embedded in motives and Nahapiet & Ghoshal (1998: 243), in the context of intellectual capital, added another important aspect to the debate, seeing social capital in three clusters: 'the structural, the relational, and the cognitive dimensions', of which the cognitive dimension has immediate relevance for this thesis as it considers 'shared values or paradigms that allow a common understanding of appropriate ways of acting' (Anderson & Jack, 2002: 196).

Ostrom (1990: 33), in her seminal work *Governing the Commons*, explored how the normalisation of individual selfish behaviour resulted in successful management of community-owned resources, and observed that, unlike other community resources, the taking of knowledge actually built the resource 'because both giver and taker learn from each other and because the taking generates a social capital debt that would be paid back in other ways'. Hence the building and sharing of knowledge in itself contributes to social capital.

The complexity of social capital has been captured by Powell & Smith-Doerr, (1994 in Anderson & Jack, 2002: 193) 'paradoxically, social capital is described as both the glue that binds to create a network and also the lubricant that eases and energises network interaction'. Contemporary additions to social capital theory include Rydin & Holman's (2004: 122) concept of 'bracing' social capital, a 'kind of social scaffolding' that is primarily concerned with strengthening links across and between scales and sectors but which only operates within a limited set of actors. In summary, Portes (1998: 6) found that there was a consensus in the literature in the definition of social capital in that it 'stands for the ability of actors

to secure benefits by virtue of membership in social networks or other social structures'. The specific role of networks will be addressed in the next section.

Networks

Networks are central to social capital theory, and have relevance for this thesis in that the local business associations addressed in this work behave as networks, in particular as strategic networks, which Miller et al. (2007: 632, citing Jarillo, 1988; Nelson, 2004; Thorelli, 1986) describe as enhancing sharing of information and providing opportunities for network members to achieve competitive advantages in the marketplace. According to Nahapiet & Ghoshal (1998: 243), 'social capital in the form of social status or reputation can be derived from membership in specific networks, particularly those in which such membership is relatively restricted' (after Bourdieu, 1986; Burt, 1992; D'Aveni & Kesner, 1993). This research will explore the relevance of group size and social capital, specifically considering why the more spatially restricted group involved in the study exhibited stronger social capital, supporting Maskell & Malmberg's (1999: 180, in Amin & Wilkinson, 1999: 123) view that proximity complements interactive learning, particularly where institutions embody tacit knowledge.

Bourdieu (1986: 249) reminds us that 'the existence of a network of connections is not a natural given, or even a social given, constituted once and for all by an initial act of institution … it is the product of an endless effort at institution'. The nature of the effort invested by the local business groups in this research reinforces that the process is not natural or 'organic', simply following in the

wake of accidental issues, rather that successful organisations intentionally create activities to perpetuate the values of their leadership, providing an opening for government (and other influencers) to seed ideas with leaders who, if accepting, will carry these ideas to their members.

Irrespective of the reasons for network formation, Putnam (2000: 136) reminds us that the value of dense networks is in their ability to create 'an effective norm of generalised reciprocity', noting the difference between 'honesty based on personal experience (thick trust) and honesty based on a general community norm (thin trust)'. The role of trust and trustworthiness permeates the social capital literature, which distinguishes between trust and trustworthiness, where trust is an attribute of a relationship, but trustworthiness is an attribute of an individual involved in the relationship (Tsai & Ghosal, 1998: 465, citing Barney & Hansen, 1994). Coleman (1998: S102) and Pretty & Ward (2001: 211) reported on the importance of trustworthiness and repayment of obligations in the social environment, reducing transaction costs between people and liberating resources. Nooteboom (2007: 29) considered that trust − which may be based on institutions or relationships − is both an outcome and an antecedent of relationships, and is the base from which social capital is generated.

Closely affiliated trusting networks are at risk of isolation and lack of exposure to new contacts and ideas (Granovetter, 1973; Burt, 1992). Burt's important contribution to the literature is that non-redundant contacts (those that lead to new networks rather than loop back into the same group) are essential in creating diversity in network information resources, and contends that dense networks are

inefficient because they provide ‘less diverse information for the same cost as that of the sparse network’ (1992: 17-18). Furthermore, ‘people who stand near the holes in a social structure are at a higher risk of having good ideas’ because people who are ‘connected across groups are more familiar with alternative ways of thinking and behaving, which gives them more options to select from and synthesise’ (Burt 2004: 349-350). This reinforces Putnam’s (2000: 20) view that social capital is simultaneously a private and public good, where ‘bystanders’ also receive a benefit from the investment of others, and where networks are not merely ‘contacts’, but ‘foster sturdy norms of reciprocity’.

Barr (1998: 1) sees networks as capable of reducing the uncertainties faced by entrepreneurs – particularly in relation to income variability – although Barr observed that networks that are required to assist in the reduction of uncertainty will have far less impact on individual enterprise performance than on positive spillover effects. Barr (1998: 5) attributes this to the inability of members to keep secrets about themselves and their technological and market developments, where sensitive information within the network is shared within the group, with the result that inter-firm competition is reduced but the group as a whole is more competitive against external businesses. Sharing sensitive information requires two attributes: trust and agreed norms.

The development and maintenance of norms, which underpin the bonding aspect of social capital, is a key theme in this research. Fukuyama (1995: 195) introduced the importance of norms in networks, noting that networks are only efficient where there is ‘a high level of trust and the existence of shared norms of

ethical behaviour between network members'. This view is contested by Westlund & Nilsson (2005: 1081, after Casti, 1995) who consider networks as nothing more than a system consisting of 'objects and connections' usually dominated by nodes and links. However, Westlund & Nilsson are in the minority in the literature where the more commonly-held view is that trust is central to group and network formation, and essential for social capital within voluntary associations. The worldwide trend of breaking up 'integrated conglomerates and multidivisional firms into loose alliances of small firm networks' (Chu, 2004: 395, citing Perrow, 1992) reinforces that small firm networks are more likely to generate trust than self-interest maximising behaviours. The social capital aspect of networks is reinforced by Nahapiet & Ghoshal (1998: 244) who observe that networks provide ties that transmit information, and the overall configuration of the density, connectivity and hierarchy of information exchange through these ties 'constitutes an important facet of social capital that may impact on the development of intellectual capital'.

Voluntary groups

Social capital theory relating to voluntary groups has relevance to this thesis because local business associations, although also of behaving as networks, have at their core a group of dedicated volunteers who have either set up or inherited the group and who work in the interests of the members to provide economic benefit. Stoljar (1973: 38) describes group purpose in relation to voluntary groups:

> *To say that a voluntary group pursues a given purpose is not to suggest that this purpose has to be precise or single minded: what matters is that men come together of their own free choice; that their group is thus a self-organised and self-organising one … This associative feature distinguishes the voluntary from other groups in which men are, so to speak, thrown together either by family relationships or by economic or politic connections created by territorial proximity.*

The literature about voluntary groups ranges from Olson's (1975) and Stoljar's (1973) discussion of group purpose, through Fukuyama's (1995) link between spontaneous sociability and organisational form, Pretty & Ward's (2001) group formation process, Putnam's (1993, 2000) use of membership in formal associations as a barometer of community involvement, to the development of group culture and norms (Coleman, 1998; Svendsen & Svendsen, 2004) and social capital in business associations (Spence & Schmidpeter, 2003; Cooke, 2007). Mancur Olson's groundbreaking work *The Logic of Collective Action* (1965) challenged the long-held assumption that 'individuals with common interest would voluntarily act so as to try to further those interests' (cited in Ostrom 1990: 5), concluding that social pressure and social incentives operate only in groups so small that the members can have face-to-face contact with one another (Olson, 1965: 62). This implies that smaller groups are better able to 'self manage' their members to achieve goals that would require controls such as formalised rules in larger groups.

Stoljar (1973: 39-40) observes that although voluntary associations can have considerable longevity, this is not an essential feature and the basic requirement of voluntary groups is that they determine their own agenda. This perspective raises questions about the usefulness of the current Australian government approach of leveraging voluntary group connections to disseminate information and provide services, as groups may not accept or interpret the messages as intended if they do not fit the group purpose.

Group development and organisational forms

Curran et al.'s (1993: 24) study of the small business sector in the United Kingdom found that small business owners have limited contacts outside their business, and the contacts they do have are ‘much less than the notions of ‘networks’ and ‘networking’ imply’. A previous study by Curran et al. (1993: 16) involving interviews with 350 small businesses discovered that the major finding was the lack of voluntary relationships. Even though Cooke (2007: 80) saw collaborations between SMEs and sharing of non-confidential knowledge to be effective ways to ‘overcome barriers caused by small size in a relatively costless manner’, Semlinger (1995: 23-24) observed that networks for institutionalised cooperation and business organisation are not necessarily suited to small firms because small firms are less well organised in developing voluntary associations, lack the time and resources to spare personnel to work on committees, and their interests are overlooked in larger networks.

So how then do SMEs develop affiliations capable of generating social capital? Pretty & Ward's (2001: 218) three stages of group evolution describes the first stage as reactive-dependence, where individuals within the group make sense from old realities (backward-looking), for example 'this has worked in the past'. The second stage is realisation-independence, where individuals look inwards to the group and make sense of the new reality (adjusting to change), for example 'how do we adapt to this new situation'. The third stage is awareness-interdependence, where the group is self-determined and shapes its own reality by looking forward (critically reflecting and expecting change as a norm), for example 'if we change the way we think, we can take advantage of...'. Stage three groups are more likely to come together in apex organisations to achieve higher level aims, as is the case in this study where the local council actively promoted local business groups progressing through these stages to capitalise on the benefits of critical reflection and better understanding of the need for change.

Fukuyama (1995: 318) believed that there is no ideal organisational form to promote economic benefit, and that associational flexibility, based on trust and sociability, will create the adaptability needed to capitalise on new opportunities. Using a natural resource management framework, Pretty & Ward (2001: 212) identified five elements of individual/group connectedness: connections between individuals within local groups (bonding); horizontal connections between groups (bridging); vertical connections between local groups and external agencies (structural holes); horizontal connections between external agencies that lead to integrated approaches for collaborative partnerships (weak ties); and strong connections between individuals within external agencies (bracing). Furthermore,

Pretty & Ward (2001: 212) question whether groups endowed with social capital are more likely to proceed to maturity and suggest that social capital may have an inhibiting effect ('a form of embeddedness that prevents change'). It would seem that the answer lies in Putnam, Granovetter and Burt's proposition that bridging social capital is necessary to connect groups to new ideas, increasing their resilience and capacity to adapt to change.

Coleman (1998: S104) observed that information gained through social relations was an important form of social capital even when social relations are maintained for other purposes. Thus, local business associations that have been formed to create social and economic linkages are valuable sources of information, which reinforces the social and intellectual capital within the group.

Norms and values

Groups require at least a basic set of values and norms to be functional. In social capital terms, the degree to which the group is bonded has implications for how it develops norms and how effectively it sanctions inappropriate attitudes or behaviour. Coleman (1998: S106-107) saw the need to contain or 'close' the social structure of the group to enable the development of effective norms and to provide a structure for sanctioning defectors. At face value this view differs from Granovetter's concept of 'strength of weak ties' and Burt's 'structural holes', but recognises that successful groups perpetually oscillate between inward and outward foci in response to internal and external stimuli.

Fukuyama (1995: 10), commenting on Coleman's position on human capital ('a distinct portion of human capital has to do with people's ability to associate with each other, that is critical not only to economic life but to virtually every other aspect of social existence'), reflected that the ability to associate is dependent on shared norms and values and the ability to 'subordinate individual interests' to the larger group. Nooteboom (2007: 30) observes that 'in the literature, trust is seen as both a type of behaviour (Deutsch, 1962) and an underlying disposition'(Bradach & Eccles, 1984; Sako, 1992; Das & Teng, 2001) that underpins the mechanisms of social norm formation. Svendsen & Svendsen (2004: 28) further speculated that social capital is built up in small groups where 'face-to-face interaction generates common social norms (or 'social glue') and creates predictable behavioural patterns' and that in small groups, the process of development of culture and behavioural rules is achieved through repetition, tradition and example – an informational contract reinforced through social ostracism. In perhaps an idealised view of the normative function of groups, Spence & Schmidpeter's work on *SMEs, Social Capital and the Common Good* (2003: 94) regarded 'the common good' as a well-developed social order that dominates individuals' lives, and which frames and constrains the development of business associations.

One wonders whether small business owners' emphasis on independence (Curran et al., 1993, citing Scase & Goffee, 1982; Curran, 1986; Bevan et al., 1989) also reflects a lack of trust, which in turn undermines the governance mechanism for relationships (Uzzi, 1998, in Tsai & Ghosal, 1998: 465) that is needed for development of social capital. Upadhyayula & Kumar (2004: 5) found that the

position of a business in a network influences its innovation. Its 'absorptive capacity' mediates the network relationship (2004: 10) and although social capital improves information exchange, absorptive capacity is a more important predictor of success. Absorptive capacity is generated through shared language (Weber & Camerer, 2003); norms and trust; and frequent close interactions (Tsai & Ghoshal, 1998), all of which build relational strength. In small business groups, benefit derives from both absorptive capacity as an internal attribute and Granovetter's (1973) weak ties that connect receptive groups to new ideas, which in tight inward looking groups would be resisted as risky or deviant.

Perhaps the answer lies with Wenger (1991, in Amin & Cohendet, 2004: 78) who suggested that social interaction (rather than trust, reciprocity, values or ethics) is the essential element of group engagement and community sense-making. Social connectivity is an important process in support of small business innovation, particularly as small business is structurally isolated in comparison with large organisations. Putnam (2000: 90) speculated that three quarters of all independent contractors have no regular work colleagues and Pyke & Sengenberger (1992 in Zeitlin, 1995: 110) observed that 'the central problem facing small firms is not that of being small but that of being lonely'. It may well be that many small businesses join their local business association simply to address this isolation, but the benefit they gain far exceeds sociability.

Proximity and groups

To what degree do groups need proximal physical space to behave as a community? Nonaka & Konno (2004: 94 in Amin & Cohendet, 2004) claim that virtual, cultural and ideational spaces count as spaces of relational knowledge and that each type of space is conducive for a particular phase in the cycle of tacit to explicit knowledge conversion (Nonaka & Konno, 2004: 96). Proximity aids and simplifies the process of community (Malmberg, 2003, in Amin & Cohendet, 2004: 96) in that the 'local circuit' generates greater likelihood of regular meetings and thus opportunity for development of relationships. Malmberg (2003: in Amin & Cohendet, 2004: 96) emphasises the importance of both structured and unstructured interactions – particularly interactions that are 'unplanned, but also relatively broad and diffuse and sometimes unwanted and often seemingly of little immediate use' – and highlights that virtual communities typically require targeting of members and more investment in time, money and energy to establish and maintain than do proximal communities. Storper (1997, in Amin & Cohendet, 2004: 90) also sees value in proximity, and observes that precincts that have 'strong untraded interdependencies between firms in a locally interlinked business system' provide socialisation and context for the development of local mores of business behaviour, through

> *everyday social talk about the dominant industry, the overlap between work cultures and domestic and public cultures, the rise of industry-specific organisations and associations, the inflection of values and programmes in local educational and training institutions, and media and other symbolic*

> *constructions of local society as trust-based, interactive, and cohesive* (Storper, 1997, in Amin & Thrift 2004: 90).

Hence Storper (1997) emphasises the role of the locality in mobilising tacit knowledge and social learning, through shared traditions, trust and social exchange, institutional convergence, social familiarity and a shared sense of place. 'Learning and innovation are cast as regional properties, with spatial proximity and local belonging read as the vital economic asset for learning based competitiveness' (Storper, 1997, in Amin & Cohendet, 2004: 90). Thus learning takes place in social interactions, formal business transactions, and in informal transactions not framed by 'local conventions of business behaviour, awareness and monitoring' (Amin & Cohendet, 2004: 91).

Prefacing the Chapter 3 discussion of tacit knowledge as 'spatially sticky', Nooteboom (2000a, in Amin & Cohendet, 2004: 123) suggests that the important elements of social capital are relational and cognitive proximity, 'what matters above all … are the cognitive efforts made by each community to contribute to the circulation of knowledge, particularly that type of knowledge embodied in the routines it practices' and Nooteboom (2000a, in Amin & Cohendet, 2004: 123) argues that electronic communication technologies are 'unlikely to undermine the value of proximity because the diffusion of codified knowledge enhances rather than devalues the significance of local tacit knowledge'.

Much of the social capital literature is based on research into cluster economies such as the craft districts in Italy and networked industries in Silicon Valley, however Castillo (1995: 72) cautions against the assumption that any form of

localised production behaves like an 'industrial district'. Castillo (1995) suggests that there is a clear distinction between industrial districts with close cooperative and competitive links, and districts that simply provide local supply systems for large firms. The local business associations investigated in this research do not to fall into either of these categories, rather, they are diverse small business linked more strongly by proximity than by the type of production or product – although there can be similarities in the sectors in which the businesses operate. Perhaps the South Australian experience is closer to that of the United Kingdom where there is an absence of dynamic industrial districts (Zeitlin, 1995: 98). Zeitlin (1995: 99) cautioned that 'stylised developmental trajectories' should not be regarded as a 'universal norm against which particular national experiences are judged'. The 'thick', 'closed' model of the industrial district that was the focus of Putnam's early work was based on a stylised account of the Italian experience that should now be expanded to encompass 'thin', 'open' models capable of accommodating a variety of social capital forms (Zeitlin, 1995: 100).

Knowledge as a glue to hold groups together

Effective functioning of learning communities requires more than just bringing together people with a common interest. Amin & Cohendet (2004: 12) observed that 'all communities share a common anthropology of socialisation, social interaction, interest alignment, and community maintenance, which acts as a vital medium for learning'. Knowledge is seen to be a core element of group cohesion, and learning is a natural progression from this knowledge. Within organisations, 'knowledge and knowing' were seen by Nahapiet & Goshal (2002, in Amin &

Cohendet, 2004: 71) as the relationship between intellectual capital (the reservoir of different types of knowledge) and social capital (the assets gained from social interaction). Thus, according to Amin & Cohendet (2004), establishing the ontology of individual and social knowledge, reinforcing Kilpatrick et al.'s (1999: 133) view that learning is more effective if it is 'lubricated by the oil of social capital'.

Knowledge can also be a causal principle of group formation, with knowledge-based groups described by Knorr Cetina (1981, in Amin & Cohendet, 2004: 75) as epistemic communities, formed to achieve a goal (typically production of specific knowledge) and whose structure is primarily determined by the need to achieve that goal. While epistemic groups are not uncommon, the production of knowledge tends not to be the core purpose of local business associations, where membership is premised on the willingness of individual members to share knowledge and the conversion of that knowledge into innovation is simply a beneficial by-product. Communities of practice are often cited as examples of knowledge production groups, primarily through engagement in practices to enhance individual competencies (Amin & Cohendet, 2004: 76, after Lave & Wenger, 1991). Some local business associations have similarities with the mutual learning features of communities of practice. However, in order to be a community of practice in the pure sense, the main purpose of the group is learning and the group structure is negotiated and renegotiated to focus on learning. It would be unusual for a local business association group to operate as a 'community of practice' without it being the overt purpose and practice of that group, but groups have an important role in non-core learning, where

'organisations created for one purpose may provide a source of valuable resources for other, different purposes' Nahapiet & Ghoshal (1998: 253, citing Nohria, 1992; Putnam, 1993, 1995). Local business associations, although acquiring some of the characteristics of knowledge-based groups, provide a more important role as the vector of learning (Amin & Cohendet, 2004: 76, after Lave & Wenger, 1991) and the establishment and reinforcement of a learning ethos.

Innovation

To what extent is innovation important in the development of social capital bonds between businesses? Is the measurement of social capital found in the outcomes (the benefits of the bonds) or in the intent (a belief in the intrinsic worth of social linkages, or perhaps the financial benefit of innovation)? Taking an economic viewpoint based on opportunity cost, Porter (1990) asserts that competition generates innovation and that closely competing business groups create an improved operating environment which supports their competitive capacity. Innovation is a key driver of knowledge within firms, and recognition of the importance of knowledge as a binding agent in inter-firm relationships may come as a result of the need to develop innovative capacity.

Amin & Cohendet (2004: 146) attribute the willingness of business communities to freely contribute knowledge in the emergent stages of innovation to an appreciation of the need for a common platform of knowledge upon which innovation can be built. The sharing of early-stage knowledge helps to reduce the risks inherent for early stage innovators, for whom returns are marginal (as

conceived by Rogers, 1962, in Granovetter, 1973: 1367). Complementing these perspectives is the suggestion by Cook & Brown (1999, in Amin & Cohendet, 2004: xiv) that the true spark of innovation lies in the 'generative dance between possessed and practiced knowledge'.

Knowledge architecture plays a central role in supporting innovation. In communities where knowledge-sharing is facilitated through information systems with open boundaries, outside knowledge is allowed into the group and helps community members to see new possibilities. Nooteboom (in Amin & Wilkinson, 1999: 122, after Brown & Duguid, 1998; Star & Griesemer, 1989) suggests that third party go-betweens 'help to sediment trust, resolve conflicts, reveal mutual advantage, and introduce novelty without destabilising established competences'. The business association coordinators in this research operate in this role, as typically they are not member businesses and therefore sit separate from potential trading relationships, which means they have no direct interest in the outcomes of the knowledge transaction. Similarly, Brown & Duguid (1998, in Amin & Cohendet, 2004: 124) reinforce the important role of 'translators' who 'work with overlapping communities in order to loosen strong internal ties that restrict exploration', and 'boundary objects' (e.g. contracts and plans) that serve to 'clarify the attitudes of other communities… [and] make a community's own presuppositions apparent to itself, encouraging reflection and second-loop learning'. Council economic development staff take this role and create opportunities for groups to connect with each other and with external experts and business leaders within a facilitated framework of reflection and learning.

Strategies that encourage group members to understand the value of knowledge are important, as are opportunities to generate novelty through both exploitation of new sources and exploration of new ideas. A 'rhythm of engagement' is needed to support the architecture of the learning community (Wenger et al., 2002, in Amin & Cohendet, 2004: 116), which in local business associations would be translated as the regular attention to learning and involvement of members in learning-based activities.

Behaviour setting and influence

The final perspective that will frame the research is voluntary behaviour change. This thesis has considered social capital and the influence of relationships on the attitudes of individuals, but does simply knowing translate into action? This section considers the literature relating to behaviour change, both from individual and group perspectives.

Behaviour change has been much studied in the marketing, health and environmental fields, with the most common model for assessing the effectiveness of behaviour change interventions being the Theory of Reasoned Action (Fishbein & Azjen, 1976) which posits that individual behaviours are based on reasoned decision-making resulting from intent, allowing individuals to fulfil their own normative intentions (Braun & McEachern, 2010: 5). Braun & McEachern (2010) suggest that the trigger for moving from a non-active to an active-change state of behaviour is generated through motivation for individual norm-seeking, with learning providing context, acceptance and group relevance. A reliance on reason

was questioned by Frensch et al. (2002: 361) who suggest that there is coexistence between the implicit learning system and the explicit reasoning system, and of these the implicit learning system can generate behavioural change before the individual is aware of the explicit reasoning behind that change.

Guthrie is credited with defining learning as the alteration in behaviour that results from experience (Dewey & Humber, 1996: 142). While this definition is possibly too narrow (after all it is possible to learn without changing behaviour), Starbuck's observation (1993, in Akbar, 2004: 2013), that information in the absence of know-how is insufficient to effect cognitive change, is critical to an understanding of voluntary behaviour change. The myriad of behaviour change programs based on provision of information that have little or no effect in changing community behaviour is evidence of the ineffectiveness of 'just knowing' as a trigger:

Environmental programs that rely on disseminating information about behaviours and how to perform them have been notoriously ineffective on average for promoting the desired behaviours (Ester & Winett, 1982; Geller, Winett & Everett, 1982; Hirst, Berry, & Soderstrom, 1982; National Research Council, 1984; Gardner & Stern, 2002, cited by Brewer & Stern, 1980: 74). Dewey & Humber's seminal work on learning (1966: 37) reminds us that any social behaviour always involves the question of motivation, and that:

> *In a learning episode there is logic in the relationship between the desire to attain a goal and the means selected to reach the goal … similarly, if one is not*

> *motivated to learn, he will not, voluntarily, involve himself in the episodic relationships that are required in learning* (1966: 167).

Motivation is influenced by bias, prejudice and belief. Attitudes and feelings can be latent or abstract, and positively or negatively value-laden. Prejudice (described by Dewey & Humber (1966: 168) as the 'I don't know and I don't want to know' condition) and bias (attitudes based on feelings rather than evidence) affect the way individuals view the world and their propensity to learn. Dewey & Humber (1966: 224) advise that 'attempted prediction of behaviour on the basis of attitudes alone is a precarious process, and often will prove to be in error, despite the stability of many of the person's attitudes'. Because of this, the role of local business associations in attitude development is explored within the broader context of group norms and sanctions.

Dewey & Humber (1996: 12) placed specific importance on the role of voluntary groups in personal motivation, as they respond to the individual's knowledge, beliefs, and feelings 'they come into being, persist, and disappear as functions of his foibles as well as his more rational thinking and acting'. The very nature of volunteer involvement means that the group must align with the values of the individual and provide benefit greater than the effort of participation. This poses a challenge for voluntary groups that are seeking to change member behaviour (particularly reluctant behaviour).

Morals, as described by Harris & Deane (2005: 193), 'embody the fundamental values of society and are transmitted across time, reflecting and reinforcing the dominant structures of society' and norms are rules or standards by which events

are judged and on that basis approved or disapproved (Rushton 1980: 57). Both are important to a study of environmental behaviour because they frame social attitudes toward environmentalism and establish acceptable socialising sanctions for non-compliance. However neither morals nor norms are typically overtly stated, but need to be learned through interaction and observation. Evidence of non-conscious influences on behaviour (Nolan et al., 2008: 915, citing Epley & Gilovich, 1999) include the use of subtle, imperceptible primes (e.g. hearing words or observing behaviour) that provide the unconscious influence of others' stated opinion (Sherif, 1937, in Nolan et al., 2008: 914). In the use of environmentalism as a topic of this research, caution was needed in the interpretation of findings as individuals may not recognise the external influences on their own behaviour ('introspective illusion') or fully understand the causation of their beliefs or actions:

> *Despite the fact that participants believed that the behaviour of their neighbours — the descriptive norm — had the least impact on their own energy conservation, results showed that the descriptive norm actually had the strongest effect on participants' energy conservation behaviours. That is, normative information spurred people to conserve more energy than any of the standard appeals that are often used to stimulate energy conservation, such as protecting the environment, being socially responsible, or even saving money. Descriptive norms had a powerful but underdetected effect on an important social behaviour: energy conservation.* (Nolan et al. 2008: 920-921)

Individual learning is influenced by belief, habits (automatic, non-deliberate behaviours that reveal themselves on impulse, in response to sudden demands, Dewey & Humber, 1966: 257), and attitudes (the subjective aspects of a subject-object relationship at the emotional level, Dewey & Humber, 1966: 223). Rational action on the other hand is based on the consideration of four primary elements: objectives, alternatives, consequences, and choice (Allison, 1971, cited by Mehan, 1984: 46). The capacity of individuals and groups to achieve fully rational action is limited by their ability to identify and assess alternatives among a large number of possibilities, to calculate probability, and to foresee and evaluate the consequences. Purely rational action is a goal rather than a common behaviour, although the actor as a 'scientific reasoner' appears in economics, sociology and developmental psychology (Mehan, 1984: 47). Evidence may also be ineffective in the face of tradition as Ison (2005) observed. Traditions embed useful practice within a culture and 'the risk for any culture is that a tradition can become a blind spot when it evolves into practice that lacks any avenue for critical reflection' (Ison, 2005: 26). The term 'cultural learning' (Ison, 2005: 170) has been used to describe the 'acquired customs or fashions of one's own times' and the current debate on climate change has the potential to raise the level of individual interest in environmental sustainability but at the risk of adoption of unfounded belief. Belief, habits and attitude are important considerations for research into environmental behaviour change because they help to explain the strongly-held biases and prejudices in the population that constrain the adoption of good practice.

So when does learning translate to action? Guthrie's Law of Learning (Akbar, 2004: 2011) states that a response is not a single act, rather it is a sequence of actions in which learning is associated with a combination of stimuli, thus a single exposure to stimuli (whether information, observation, or experience) is unlikely to result in learning that changes behaviour. Single and double loop learning, introduced earlier in this chapter, support multiple exposure to stimuli as they require a deeper understanding of the issue at hand, something not normally achieved in a single episode or exposure. Granovetter's (1973: 1374, citing Katz & Lazarsfeld, 1955 and Rogers, 1962) studies of diffusion and mass communication found that 'people rarely act on mass media information unless it is also transmitted through personal ties, otherwise one has no particular reason to think that an advertised product or an organisation should be taken seriously'. Argryis' work on double-loop learning (i.e. learning that tests the underlying assumptions of the problem at hand) indicates that behaviour change only occurs when there are no restrictions on the transformation of the 'theory in use' (Argyris, 1976, 1977, in Akbar, 2003: 2009).

In terms of environmental behaviour, Fielding et al. (2010: 3-4) found that households respond more positively to government policies that facilitated voluntary change (e.g. installing efficient appliances, labelling, government campaigns) than to pricing mechanisms (e.g. taxes, increased price of water, energy, waste collection) or regulation such as building codes (even when these implied additional cost), and there was support for laws that require products to be environmentally sustainable, despite recognition that this might increase costs.

How then is group influence identified? Barker (cited by Lave et al., 1984: 70) posits that

> *A segment of the environment is sufficiently coherent to be identified as a behaviour setting if little of the behaviour found in the setting extends into another setting, if there is sufficient sharing of personnel within that setting but limited sharing with related settings, if behaviours in the setting are closer to each other in time and space than to behaviours outside the setting, and if there is a greater sharing of objects and modes of behaviour in subparts of the setting than between this setting and related ones.*

Weak ties (Granovetter, 1973) and structural holes (Burt, 1992) are important concepts in the seeding and dissemination of knowledge from external agents to group members, with groups providing the translation of this knowledge through strategies that tap into individual self interest (Ostrom, 1990; Anderson & Jack, 2002). Having gained entry to the group, ideas are embedded through rules and social mores (Flora, 1998) thus creating the mechanism for behaviour change that can be sustained over time.

Social learning as a field of behaviour change addresses the sharing of experiences, ideas and environments and has been defined as 'the collective action and reflection that occurs among different individuals and groups as they work to improve the management of human and environmental interrelations' (Keen, Brown & Dyball, 2005: 7). The influence of environmental norms is illustrated by Hopper & Nielsen (1991: 215) who found that recycling (as a form of altruistic behaviour) is only adopted as a personal norm when community norms are

associated with a high awareness of social consequences. Hence social expectations and sanctions are strong influencers of individual behaviour, and in order to effect change the individual needs to learn about social expectations and about the activity that is the focus of the change. This observation underpins the findings of this research in that members need two factors to change behaviour: the knowledge of the change itself, and the understanding of the groups' position on the subject of the change.

The growing community interest in the environment, sparked by extreme weather, drought and increased media attention on 'global warming' has brought the environment as a topic of discussion and debate into social and business settings that previously would have regarded this topic as the remit of 'greenies'. Yet, behaviour change, whether in a small local association, or on a global stage, requires individuals to learn how to behave differently. Chapter 3 explores the role of tacit (or shared contextualised) learning as an efficient enabler of the acquisition of social and process knowledge.

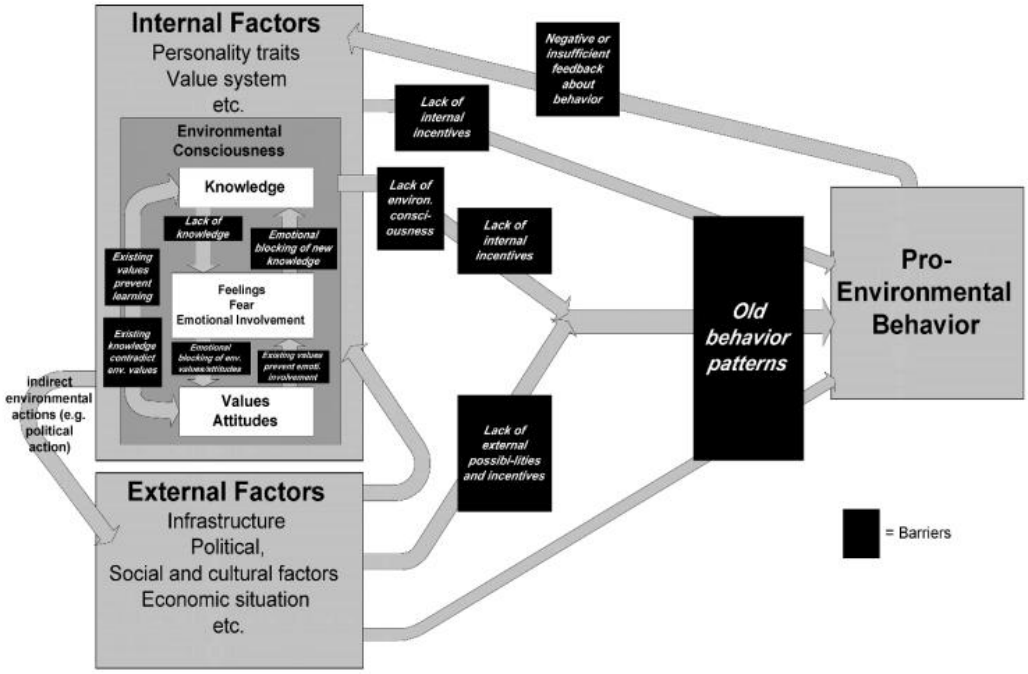
Environmental change

Environmentalism has been chosen as the topic for this research because it 'interferes with fundamental economic models of consumption and production, resulting in a net change in efficiency' (Brewer & Stern, 2005: 206) and is seen as counterproductive by many businesses. Environmentalism also poses the central problem of the 'tragedy of the commons' identified by Hardin in 1968, and developed further by Ostrom (1990, 2000). Ostrom recalled the work of Mancur

Olson (1965) who made a significant contribution to the 'voluntary behaviour' field when he challenged the conventional theory that individuals with common interest would voluntarily act to further those interests (Ostrom, 1990: 5) − as we have seen in the discussion of Reasoned Action Theory, rationality is not necessarily the dominant process in behaviour change.

Putnam (2000: 53) found that although 'environmental organisations have been among the growth stocks in the associational world over the last several decades' and study of the interaction between the natural environment and social organisation and behaviour dates at least from the early 1970s (Laclau & Mouffe, 1985), there have been few, if any, studies on the role of voluntary business groups in changing small business behaviour. Collective action is not the focus of this research. Small firms that are members of local business associations are not primarily seeking to effect environmental change, rather the research will identify whether individual businesses change their environmental practices as a result of the influence of groups that have been established for other (in this case economic development) purposes. The literature on individual behaviour change has relevance for small business, both because small firms are often single-person entities, and because what holds true for individuals working for themselves may also hold true for individuals within organisations. Kollmuss & Agyeman's (2002: 257) model of pro-environmental behaviour (*Figure 1)* illustrates the barriers and internal and external factors influencing pro-environmental behaviour and provides a helpful context for framing the research.

Figure 1: Kollmuss & Agyeman, pro-environmental behaviour



This model reinforces McKenzie-Mohr & Smith's (1999: 9) view that that behaviour is unlikely to change simply by enhancing knowledge or altering attitudes (citing Geller, 1981; Geller et al., 1983; Jordan et al., 1986; Midden et al., 1983). However, Nahapiet & Ghoshal (1998: 245; citing Fukuyama, 1995; Jacobs, 1965; and Putnam, 1993) found that social capital encourages cooperative behaviour, facilitating the development of new forms of association and innovation, addressing the barriers (in black in the model) of lack of external possibilities and incentives, lack of environmental consciousness, insufficient feedback about behaviour, and lack of knowledge.

Conclusion

This chapter has explored social capital and small business environmental behaviour from the central perspective of learning and social norms within voluntary groups, and from the broader perspective of proximity, cohesion and innovation and group influence. The important conclusion from the social capital literature review is that social capital provides the scaffolding for group cohesion, offering member benefits that can be 'traded' for the inconvenience of adopting group norms such as environmentalism. The literature establishes that behaviour change is dependent upon learning in response to multiple stimuli, and that environmentalism − because it challenges long-held corporate assumptions about externalising environmental costs − requires the development of triple-loop learning skills that are best achieved in social learning situations.

In anticipation of the field research with local business associations, the literature about volunteer groups was considered, noting the tension between the compliance with group values and the need for individuals to gain benefit to remain involved, but that individual perception of benefit can be undermined by efforts to change attitudes and behaviour. This thesis explores this paradox in detail, seeking to identify successful strategies to support behaviour change in volunteer groups.

Aspects of social capital such as proximity and group size were investigated in relation to management of members and goal achievement, suggesting that face-to-face contact expedites the establishment and maintenance of norms and helps to address conflicting attitudes and beliefs. Prefacing the review of the knowledge

literature, this chapter identified that relational and cognitive proximity confers locational advantage for learning-based competitiveness, and that the 20th century social capital focus on dense industrial districts is losing relevance in favour of thin, open models that can respond to rapidly changing global business environments. These looser affiliations place greater reliance on knowledge as the bonding agent. The local business associations that are the focus of this research reflect this more open structure, and although ostensibly formed for economic development purposes, their enabling mechanism is knowledge transfer.

Bridging social capital connects members to knowledge from outside the group. Granovetter's (1973) and Burt's (1992) perspectives on weak ties and structural holes as the mechanism for bridging social capital are important concepts for this research in respect of the local business association function of sourcing and mediating external environmental knowledge. The role of group evolution was considered, reflecting that early-stage development is primarily inward looking, but that mature groups are self determining and forward-looking and thus better placed to identify potential opportunities and threats and support their members to adapt to external influences.

Social capital therefore, can contribute more than shared benefit. It provides the mechanism for norms that support values such as learning and environmentalism, and the architecture to encourage the development of member knowledge. The next chapter looks more deeply into learning within social capital networks to support purposeful change in member behaviour.

CHAPTER 3: Knowledge Literature Review

Introduction

The central tenet of this thesis is that behaviour change is motivated by social relationships, and that the critical factor in generating behaviour change is the transfer of knowledge between members of the group. Previous chapters have provided context by introducing the problem of the size of the pollution load generated by small business, the need for the small business sector to change its environmental behaviour, but the low level of motivation of small business owners to adopt pro-environmental practices. Solutions to this situation have been suggested through examination of literature in regard to the role of social capital in providing the structure and agency for individual behaviour change.

Chapter Three refines the focus of the thesis to the transmission of knowledge, building on the sociality and enculturation (Dewey & Humber, 1966) theme to examine in detail the mechanics of how knowledge is generated within a tacit learning framework comprising three interdependent elements of knowledge transfer: the epistemology of shared knowledge; the ontology of knowledge and the mediating effect of social settings on the transfer of knowledge; and the relationship between knowledge, communities and social capital.

Theories about the constitution of knowledge underpin many disciplines, and permeate our conscious and subconscious thinking in day-to-day learning. Often regarded as the property of the education sector, knowledge theory is important in

fields as diverse as quantum mechanics and social psychology. Not unexpectedly, perspective on knowledge changes with the discipline. Traditional economics views knowledge as an input, a measurable commodity primarily held by the individual; the education field has a diversity of views about knowledge, typically treating it one element in an intricate web of learning mechanisms; sociologists give importance to social interactions in building (and to some extent storing) knowledge; environmental managers see knowledge as a basis for collective action; and for many organisational theorists, knowledge is a problem to be managed. With such a vast breadth of theory and research, this chapter provides an introduction to epistemology and then presents the literature relevant to individual cognition and action, and to social learning that facilitates and influences knowledge transfer.

Epistemology: the knowledge of knowledge

Epistemology is the theory of knowledge particularly relating to methods, validity, and scope, and the distinction between justified belief and opinion (Oxford Dictionary). Therefore, in any discussion of knowledge, clarification is needed for the commonly-used terms of knowledge, information and learning. Machlup (1980) provides a comprehensive treatise on knowledge, and used the following definitions, which will be followed in this thesis. To inform (as described by Machlup,1980: 56) is 'activity by which knowledge is conveyed'. 'Information' is the content of transmitted messages and hence is secondary (non-original) knowledge: 'all information, in the sense of the contents conveyed, is knowledge, although not all knowledge may properly be called information'

(Machlup, 1980: 58). The process of acquiring knowledge – for the purpose of this thesis — is 'learning'. A further distinction by Machlup (1980, in Amin & Cohendet, 2004: 19) poses that information is 'fragmented and transitory, whereas knowledge is structured, coherent, and of enduring significance' and that 'information is acquired by being gathered, whereas knowledge can be acquired by thinking and doing'.

Akbar (2003: 1999) combined Davis & Botkin's 1994 description of 'the conversion of unorganised sludge of data' into 'relevant and purposeful information' (Drucker, 1998; Jones, 1995) and described knowledge that builds on this basis of data and information as 'the subjective storage of aggregate information (Strydom, 1994) or expertise (Machlup, 1984)'. In the English language, the term 'knowledge' is more limited than in other languages (German for example) because there is no simple linguistic distinction between knowing how (descriptive knowledge), historical knowledge (events), theoretical knowledge (knowing why) and procedural knowledge (task process or heuristic/not heuristic) (Machlup, 1980: 32).

Machlup's (1980: 47) investigation into the concept of knowledge reveals thirteen elements present in the state or act of knowing: being acquainted, being familiar, being aware, remembering, recollecting, recognising, distinguishing, understanding, interpreting, being able to explain, being able to demonstrate, being able to talk about, and being able to perform. Bertrand Russell distinguished between 'social knowledge' and 'individual knowledge' (1943: 3) where social knowledge is the knowledge held by the community in its collective capacity (e.g.

the contents of encyclopaedia or academic publications), and individual knowledge is that which an individual knows through his own experience and which cannot be known by others without transfer from the individual.

Dewey's seminal work on thinking (1910: 84) provides some simplification of the issue of knowing and learning, in that he observes that 'all discovery, all apprehension involving thought of the new, goes from the known, the present, to the unknown and absent'. This thesis considers the path of small business owners from the known (current, typically poor environmental practices) to the unknown (how good environmental practices can be established within the business) and the influence of groups on this process. One of the important questions to be considered in relation to group influence on pro-environmental practices is the intentionality of the individual's search for knowledge, specifically whether business owners are seeking better practices, or whether there are other social influences that affect behaviour in a more involuntary way.

Machlup (1980: 181) describes three different knowledge-seeking states: intentional search for answers; absence of intentional search but presence of a special receptiveness to new knowledge; and reception of new knowledge by those who are neither perceptive, nor embark on an intentional search for knowledge, but who 'just stumble upon the hitherto undiscovered' (summarised as painstaking searchers, alert watchers, lucky finders). The intentionality of knowledge will be further explored in the fieldwork, investigating the degree to which business owners are seeking knowledge about changing their

environmental practices, the social influences on knowledge acquisition, the links between knowledge and action, and reinforcements needed to sustain action.

> *Our progress in genuine knowledge always consists in part in the discovery of something not understood in what had previously been taken for granted as plain, obvious, matter-of-course, and in part in the use of meanings that are directly grasped without question, as instruments for getting hold of obscure, doubtful, and perplexing meanings.* (Dewey, 1910: 120)

The acquisition of knowledge presupposes thought and, by default, consciousness. However Lakoff & Johnson (1999, in Amin & Cohendet 2004: 96) posit that up to 95 per cent of all thought is unconscious, a concept supported by Rushton: 'much decision making occurs rapidly and at a preconscious level [and that] often only the consequences or results of processed information enter the consciousness, not the processing itself' (1980: 8, citing Nisbett & Wilson, 1977). This is a reminder that actions and attitudes should not automatically be attributed to conscious thought, as illustrated by Rogoff & Lave (1984: 48):

> *People do not make decisions by maximising the positive consequences and minimising the negative consequences, because "determining all the potentially favourable and unfavourable aspects of all feasible courses of action would require the decision maker to process so much information that impossible demands would be placed on his resources and mental capacities"* (citing Watkins, 1970).

According to Dewey (1910: 1), 'everything that comes to mind, that 'goes through our heads' is a thought, to think of a thing is just to be conscious of it in any way whatsoever'. It is useful to consider the role of implicit learning, that which 'occurs regardless of the learners' intention to learn, and largely in the absence of explicit knowledge of what has just been acquired' (Jiminéz, 2002: 54, citing Reber, 1993). Jiminéz (2002: 62) contends that learning can occur in the absence of a conscious intention to learn, of conscious awareness of the fact that we are learning, and of conscious attribution of any noticed change to the effects of learning.

> *Implicit learning can be described as a by-product of processing that can be distinguished from explicit learning on two grounds: it is not caused by conscious intention to learn; and it does not initiate the adoption of an explicit search strategy over the course of learning.* (Jiminéz, 2002: 62)

Thinking combines conscious and unconscious functions, from 'mental trial-and-error processes involving combining and recombining abstractions' (Dewey & Humber, 1966: 56) to the situated learning philosophy of Rogoff (1984: 2) in which 'thinking is intricately interwoven with the context of the problem to be solved', where the context may comprise the physical and conceptual structure of the problem, the purpose of the activity, or the social milieu in which it is embedded. When people work together, a pattern of interaction develops between them, described by Maturana & Varela (1980, in Weirdsma, 2002: 232) as structural coupling, where participation requires actions within a framework of implicit and explicit rules (1980, in Weirdsma, 2002: 233), which creates

conditions for continuous collective learning where the rules must continually be met (Ibid.: 246). Thus the interplay of individual and group learning is reinforced.

The preceding discussion could imply that learning is fundamentally irrational and intuitive, but there is a large body of work on rational action that must be considered, particularly as we know that rationality does not necessarily lead to environmental behaviour change, as described by Irwin & Wynne (1996, in Whitmarsh et al., 2011: 59):

> *The so-called 'information deficit' model, which assumes that the public are 'empty vessels' waiting to be filled with information which will propel them into rational action, has implicitly underpinned much public policy but is widely criticised as inappropriate and ineffective.*

Rational action models explain human behaviour as the result of a choice among alternatives (Best & Kneip, 2011: 2; Allison, 1971; Fishbein & Azjen, 1976; Mehan, 1984). Proponents of rational action (originating in the Hobbsean concept of actors being utilitarian and value maximising (Schutz, 1943; Weber, 1947; Simon, 1949; Schelling, 1950; Garfinkel, 1967) assume that actors use conscious scientific reasoning to 'choose the best alternative, taking account of its consequences, probabilities, and utilities' (Mehan, 1984: 45), an unrealistic view considering the impossibility of knowing and remembering sufficient information to make fully rational decisions (Ibid.: 49). However, problem solving strategies that allow individuals to cope with information overload are an essential tool in today's information-rich environment, and support the conversion of information to knowledge.

Tversky (1972) and Quinn (1976) spoke about the complexity of the decision-making environment where the constituent factors are complex and open, and where alternatives have different criteria with incommensurate value (Mehan, 1984: 41). A key strategy in problem solving, particularly in complex situations, is generalisation, of 'searching for similarities between new problems and old ones, guided by previous experience with similar problems and by instruction in how to interpret and solve such problems' (Rogoff & Gardner, 1984: 96). Norman & Bobrow (1975, cited by Mehan, 1984: 63) identified four heuristics used to cope with information overload and the limitations of short-term memory: salience (used to select information); availability (to recall information), representativeness (to classify information), and anchoring (to retrieve initial judgments). Decision-making in complex situations is highly relevant to adoption of environmental practices, where there is typically no one proven method, and new issues and solutions are frequently introduced within a broader debate about global environmental issues such as access to clean water and climate change.

At the heart of any discussion about learning and behaviour change is the question of cognition, the mental process of acquiring knowledge, described by Dewey & Humber (1966: 161) as 'a tripartite process (sensation, perception, and conception) in constant and circular interplay', and how it underpins the learning process through testing and relating new to existing knowledge. At its most basic, learning requires the motivation of achieving solutions to perplexity. Dewey (1910: 2-3) observes that 'reflection involves not simply a sequence of ideas, but a consequence – a consecutive ordering in such a way that each determines the next as its proper outcome, while each in turn leans back on its predecessors'. In very

complex situations (such as human activity and climate change), the variables can be so great that individuals are unable to choose factors of relevance, and one should not assume that logical attainment in one direction will prevent extravagant conclusions in another, indeed conclusions 'may be generated by a modicum of fact merely because the suggestions are vivid and interesting or a large accumulation of data may fail to suggest a proper conclusion because existing customs are averse to entertaining it' (Dewey, 1910: 20). Nor is natural intelligence a barrier to the propagation of error, nor 'experience to the accumulation of fixed false beliefs, errors may support one another mutually and weave an ever larger and firmer fabric of misconception' (1910: 21).

Individual and social learning

Adding complexity to the social psychology of knowledge is the debate about whether the locus of cognition is determined by the individual or by social influences. Early theorists favoured cognitive and social development based on the individual. Weber (1864-1920) emphasised that interests are always subjectively perceived and that no objective interests exist beyond the individual actor (Smelser & Swedberg, 2005: 9). Piaget (1896-1980) advocated internal construction of knowledge using stages of cognitive development, with socialisation only present as an influence on the individual (Wertsch et al., 1984: 152). Vygotsky (1896-1934) recognised the tension between 'natural' (individual) development and 'socioculturally defined tools and patterns of activities' (Wertsch et al., 1984: 153), and Dewey & Humber (1966: 19) believed that knowledge can only be formed in some kind of relationship, whether it is with

other people, or with coded repositories of knowledge. The contemporary view echoes Vygotsky and recognises that there are both innate and social influences upon cognition.

The earlier discussion of learning in this chapter focused on learning as an activity undertaken by individuals. However, learning is not necessarily restricted to the individual, groups can also learn as illustrated by Guthrie's definition of learning (in Dewey & Humber, 1966: 142) as 'the alteration in behaviour that results from experience', which does not distinguish between learning by individuals or groups. Indeed, Wenger, whose work has influenced social learning theory, proposes that learning is a social phenomenon 'reflecting our own deeply social nature as human beings' (Wenger, 2000, 2001; cited by Keen & Mahanty, 2005: 107), and that relationships and social structures are the 'scaffolding on which learning occurs'. Bartlett (1958, cited by Scribner, 1984: 39) posited that interaction and socially provided tools and schemas for problem solving were the contextual framework for cognitive activity. Thus context, that essential component of tacit learning (see below), is introduced into the discussion. Nooteboom (in Amin & Cohendet, 2004: 64) describes the importance of context (or 'situatedness') to both knowledge and meaning. Amin & Cohendet (2004: *xiv*) take the definition of situatedness one step further, albeit within the context of their work on business communities by suggesting that knowledge is 'progressively built through the conscious and unconscious acts of social interaction' which generates group alignment and common practices.

Swieringa & Wierdsma (1992, in Wierdsma, 2004: 261) describe three levels of change resulting from co-creation, where those who initiate change form part of the change and learning process, and 'the process of change shifts from one of implementation to solutions devised by a few for the many, to the joint creation of new possibilities'. These levels are rules, insights and principles – each with corresponding learning processes that can be regarded as cognitive maps (of concepts and relationships) which people use in their actions (Wierdsma, 1992: 257). While this approach accords with this thesis, caution should be exercised in adopting an unqualified view that knowledge is only transferred in social situations. For example, Dewey & Humber (1966: 170) remind us that knowledge includes the 'acquired customs or fashions of one's own times' as well as 'individual departures from tradition because of unique learning experiences', and differentiate between these two types of learning as cultural learning and personal-social learning.

As can be surmised by the preceding discussion about cognition, development and learning, knowledge can be acquired through both conscious and unconscious means, through formal transfer (teaching) and informal transfer (such as watching, listening or experiencing). Knowledge can also be acquired through reading (interpretation of codified knowledge) and by reflecting on existing knowledge to develop new knowledge. Whether one favours individual development with sociocultural influences, or social development tempered by individual ability and experience, the key question is 'what is the process by which knowledge is developed and transferred?'.

Tacit and codified knowledge

One of the most important elements in understanding the process of knowledge transfer is the distinction between tacit and codified knowledge. Codified knowledge is that which can be formalised (usually, but not necessarily, written in language or symbols) and accessed whenever the learner knows where it is stored and has the codes to interpret it. The features of codified knowledge are that it includes hard, explicit data (Nonaka, 1991) and formal and structured knowledge (Kim, 1993); can be aggregated at a single location (Lam, 2000); or stored in an organisation's routines, procedures, practices, know-how and conduct (Leroy & Ramanantsoa, 1997 in Akbar, 2003: 2000). Codifying knowledge can reduce it to information, which can be more easily acquired and used.

A unique feature of knowledge is that once it is acquired by others, its value to the original owner decreases. In consequence, knowledge is protected (as intellectual property) and many organisations are reluctant to encourage the codification of core knowledge, which could then be more easily accessed by outsiders. Another perspective on codified knowledge has been provided by Cohen & Levinthal (1999, in Amin & Cohendet, 2004: 143) who used the term 'absorptive capacity' to illustrate that users must understand the code (that is, have the appropriate background knowledge) in order for explicit knowledge to be of use. The extension of this concept is that producers of innovative knowledge risk their concepts not being explored and adopted by others if the underpinning knowledge is not available.

On the other hand, tacit knowledge is 'stored' within the mind (both conscious and unconscious) and is therefore difficult or expensive to codify. Tacit knowledge is generally associated with skills and practical abilities and allows people to solve specific problems even when there is no explicit understanding of the reasons behind these problems, nor rational methods for their solution (Amin & Cohendet, 2004: 23). Tacit knowledge 'is difficult to translate beyond its generative context' (Ichigo, Krogh & Nonaka (1998), in Amin & Cohendet, 2004: 124) and therefore a direct connection between the 'knower' and the 'learner' is an implicit requirement in the transfer of tacit knowledge.

Tacit knowledge is recognised as playing an important role in technological innovation (Howells, 1996), thus contributing to firm competitiveness (Winter, 1987, in Akbar, 2003: 2000). The creation of new knowledge through 'dynamic interactions between explicit and tacit knowledge' (Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995, in Akbar, 2003: 2000) is known as the 'knowledge creation view', echoed by Amin & Cohendet (2004: 11) who wrote 'human knowledge is created and expanded through conversations between tacit and codified knowledge'. The interplay between tacit and codified knowledge to generate innovation appears logical, although there are deeper complexities. In his work on knowledge creation in the firm, Arrow (1962a, in Amin and Cohendet, 2004: 141) linked innovation to the production of new knowledge, while Machlup (1980: 158) made the distinction between the production of 'subjectively new knowledge' – learning existing knowledge for the first time – and 'socially new knowledge' – creating new knowledge that no-one else has known before. The important distinction for this research is the connection between knowledge and

action, indeed Akbar (2003: 2001) criticises the knowledge creation view because it is inadequately integrated with individual learning and ignores the relationship between knowledge and action, which is fundamental to voluntary behaviour change.

A deeper understanding of knowledge transfer and learning helps to frame this research into the effect of groups on learning and behaviour. Akbar (2003: 2004-2008) provides a two level perspective of knowledge: rudimentary (knowledge is situated, routinised, cursory and disjointed, operates at product and process dimensions and is often called know-what or know-how); and higher levels where information is given sense through thinking that combines subjective and objective, varying complexities, 'elastic understanding', reduced dependence on exogenous stimulus ('know why'). Importantly, because the activity and process of learning are continually reinforced, learning agility is achieved at higher knowledge levels and learning costs are reduced.

Akbar (2003: 2008) relates knowledge to power (after Kim & Mauborgne, 1997), acknowledging that if an individual's knowledge is at a lower level than that of new knowledge, their power base or livelihood is likely to be threatened. The individual must choose whether or not to learn, and the choice will depend on the benefit–cost relationship of learning new or simply preserving existing knowledge. This observation has direct application to small businesses making decisions about investment (of learning, effort and money) into new environmental practices. Consequently the research will test the effect of knowledge-sharing on Akbar's assertions that higher trajectories of knowledge are

endogenised, with the individual becoming a repository of new knowledge and achieving the status of an institution in their own right where advantages are created from sharing rather than withholding knowledge (Akbar, 2004: 2009) and that knowledge is increasingly characterised as a public good (Ibid.: 2014).

Acquiring tacit knowledge requires that learners 'not only acquire knowledge, but that they also gain good judgement and sharpened intuitions, become more self-reliant and able to work with each other' (Harris & Deane, 2005: 196). Harris & Deane (2005: 196) also remind us that the tacit knowledge competencies 'do not flourish under a one-way transmission regime, they are learned best through interaction in a context where people learn from each other … it is fundamentally a social process'. This concept is further developed by Vygotsky who suggests that:

> *Learning through interpersonal communications and interactions fits with the idea that each student has a zone of proximal development … [an] understanding that lies just beyond a person's current knowledge and ability, or that we cannot learn on our own at the moment but can learn with a little help from our friends* (Vygotsky, in Harris & Deane, 2005: 198).

The transfer of tacit knowledge is seen as a form of social learning because it is formed relationally, it is 'context-dependent, spatially sticky and according to Morgan (2001) socially accessible only through direct physical interaction' (Amin & Cohendet, 2004: 89), although this last point can be contested, as transfer of tacit knowledge between spatially-dispersed agents can take place wherever context and relationships can be sustained (for example in an on-line environment

that allows the sharing of images and real-time dialogue). The challenge in a global, knowledge-based economy is how to structure mechanisms that support interactions between 'bodies, minds, speech, technologies and objects' that do not rely on 'native practices or locally confined assets' (Amin & Cohendet, 2004: 102), particularly as knowledge is strongly embedded in agent experience, and groups provide the situated rationality that enables understanding and supports the procedural processes from which sense and collective beliefs are structured (Marmuse, 1999, in Amin & Cohendet, 2004: 126), hence sense is connected to action and not fixed in time.

Learning to learn

Thinking and learning operate at many levels. At its most basic, learning about pro-environmental action can simply address cost-cutting opportunities such as reduction of waste, but the type of learning needed to question business fundamentals and develop new ways of thinking about environmentalism is deeper and more complex because it requires quite different appreciation of the earth in its role as unlimited resource and sink. In this section the concepts of single, double and triple loop learning will be used to illustrate how learning about new environmental practices must address the knowns, the unknowns and the unknown unknowns (attrib. Donald Rumsfeld, 2002).

The concept of single, double and triple loop learning introduced in Chapter 1 originates with pioneering differentiation between single-loop learning, defined as the changes in subjective theories or mental models within an existing paradigm,

and double-loop learning, defined as reflection upon what has been learnt and deliberate questioning of core assumptions, leading to exploration beyond the paradigm (Amin & Cohendet, 2004: 72). Single loop learning is that which occurs within set frameworks or rules, or addresses specific problems, and double loop learning is that which examines underlying assumptions. Swieringa & Wierdsma (1992) extend this model one step further with the concept of triple loop learning that questions the values and norms which are the foundations for assumptions and actions. Triple loop learning has relevance for pro-environmental behaviour as it challenges the underpinning values and norms upon which business practice has traditionally been based, according to Wierdsma (2004: 252):

> *The essence of triple-loop learning processes is that stakeholders experience that a change in the organisation requires a change in their own thinking and actions. Recognition and acknowledgement of their own contribution to the interaction processes offer an opportunity to reflect on their own way of acting. Because of the mutual interdependence, a change in their own thinking and action invites a response from others.*

Single loop learning has close similarities with Mode 1 learning (empirical, scientific, hierarchical rule-based, after Gibbons et al. (1994)) in that they are both path dependent, problem focused and structured within strict frameworks. Both single-loop and Mode 1 learning can be complex, although the complexity is determined by the structure of the question, rather than flexibility in exploring the answer, and neither test the underlying cognitive and social norms. Single-loop learning results in an incremental change, whereas double-loop learning results in

a transformative change in 'theory in use' (Argyris, 1977; Argyris & Schön, 1978). Gibbons et al.'s Mode 2 learning (transdisciplinary or collaborative research that addresses multiple variables and meanings and complex contexts) correlates with double loop learning in that both challenge the existing paradigm. However neither Mode 2 nor double loop learning implicitly question the underpinning societal or group values and norms. The creation of new behaviours to support environmental sustainability needs therefore to focus on double and triple loop learning to 'generate novelty of a path-breaking nature' (Amin & Cohendet, 2004: 72).

Recent contributions to learning theory reflect on the need for disruption to generate an environment in which innovative thinking can take place. Amin & Cohendet's (2004: 117) emphasis on sociality, rather than trust, as the key asset of communities, acknowledges the role of dissonance and friction in facilitating learning:

> *Creative communities are those that are able to confront and channel difference and disagreement. Learning within them is clearly partly a matter of exploiting existing competencies, but it is also both about retaining variety so that new opportunities are not lost and renegotiating the creative play of dissonance, ambiguity, struggling with otherness, and rivalries. The key management challenge, thus, is to strike a delicate balance between existing routines and the exploration of novelty.*

This section has introduced knowledge and learning and has flagged the importance of social settings in the acquisition and transfer of knowledge. The

next section considers the ontology of knowledge, how it affects and is affected by social relationships. In the final section of the chapter, the link between social relationships, knowledge and social capital will be addressed.

The ontology of knowledge

Ontology is a useful perspective from which to understand the sociology of knowledge. The term is generally interpreted as a study of categories of being, attempting to determine the fundamental entities that make up the world. Recently (particularly in information technologies and knowledge management), ontology has taken on a more specific meaning, describing the concepts and relationships that can exist for an agent or a community of agents. Thus ontology provides a framework for exploration of the interface between knowledge, individuals and communities (or 'intentional actor networks', Amin & Cohendet, 2004: 67).

What do we mean when we speak of social groups? Are they formal, incorporated associations? Or does a bunch of mates at the pub constitute a social group? Dewey & Humber (1996: 107) define a social group as 'two or more persons sharing the same status or position in a social system' and that a group 'exists because its members are similarly related to objects in the environment'. Polanyi (1944: 47) suggests that groups are dualities, linked in mutual obligations.

Groups communicate, which results in contagion of ideas (Dewey, 1910: 224), and have norms which reflect the consensus about desired behaviour in a social system and drive cognitive processing of some kinds of information (Channouf et al. (1999) in Upadhyayula & Kumar, 2004: 11). Norms of cooperation, like

openness and loyalty, lead to greater inter-firm interaction (Starbuck, 1992). The attainment of the status of 'member' requires new entrants to meet group requirements (in a local business association, this would typically include the location of the business in the specified geographic area, that the owner or other key decision-maker attends group meetings and activities, and of course that the membership fees are paid). However the conversion of an 'attender' into a member requires transfer of tacit knowledge about the behaviours, relationships, processes, and expectations of membership.

The process of socialisation or 'normative integration' (Nohria & Ghoshal, in Amin & Cohendet, 2004: 124) establishes the unstated mores of communication and knowledge transfer between individuals in the group. Despite the theoretical possibility of individuals creating new knowledge without input from others, Hayek (1899-1992, in Amin & Cohendet, 2004: 15) reinforces the need for social underpinnings of knowledge, either through the development of knowledge within a community, or by accessing and building on knowledge that was produced by others. Tacit knowledge is typically transferred in social settings and learning is a collective activity which forms part of the background and experience of each organisation (Amin & Wilkinson, 1999: 121).

Although references to 'learning organisations' have been prevalent in the business literature since the 1990s, knowledge primarily exists within individuals: 'knowledge is socially constructed individually within each human head' (Brown & Pitcher, 2005: 126). Shared knowledge is an important element of communities, as observed by Amin & Cohendet (2004: 12) 'all communities share a common

anthropology of socialisation, social interaction, interest alignment, and community maintenance, which acts as a vital medium for learning'. The mediation of group interaction on an idea will result in that idea being quite differently interpreted from group to group (Brown & Pitcher, 2005: 126). Upadhyayula & Kumar (2004: 3) cite three factors that influence knowledge transfer between groups: the characteristics of the knowledge (after Szulanski, 1996; Zander & Kogut, 1995), the motivation of the source and recipient group (Szulanski, 1996), and the absorptive capacity (after Cohen & Levinthal, 1990). While this theis contests the view that there is a 'group mind' that holds the knowledge of the social group, knowledge that is shared by the group underpins our social and economic framework. Hayek reflects that the knowledge of a given group or society is held in fragments in individual minds and that in order for the society or group to be functional, there is a need to mobilise these forms of dispersed knowledge, a process that is achieved through sociability (in Amin & Cohendet, 2004: 26).

The degree of social influence on an individual will depend on the strength of the relationship between the individual and the group. Dewey & Humber (1966: 117) proposed three types of groups: primary, secondary and tertiary. Cooley (1864-1929) was the first to describe primary groups as those with intimate face-to-face association and cooperation, and for most people the family is their primary group as it has a fundamental influence on the individual, and changes little over time (compared to other group types). Secondary groups are defined by position and status, and according to Dewey & Humber (1966: 117) it is the position, rather than the person that is important, as membership is qualified by performance and

individuals with the same skills and qualifications can be substituted without alteration of the relationship. In larger communities it is possible to live without primary groups, but (unless one lives outside of mainstream society – as might homeless people) everyone engages in secondary group relationships. The third set of relationships is the tertiary group, made up of people who are not known personally to the individual, but who influence them in some way, the shareholders of a supermarket, the staff who work in it, and the suppliers who provide goods, are all part of an individual's tertiary group – people who have little or no direct contact with the individual, but who can significantly affect the experience of the individual through (for example) the quality of service, availability of needed goods, or opening hours. For the small businesses who participated in this research, their primary groups were their families (many of whom were involved in the business), their staff (who had been with them for many years and were treated like family), and their immediate group of friends within the precinct. Their secondary groups were customers, supplier contacts, the business association coordinator, business advisers and council economic development and environmental staff. Tertiary contacts would be the unknown individuals connected through council, supplier, customer and social networks. Each of these groups exert some influence on the businesses.

The role of social influence on belief has been interpreted through the Theory of Planned Behaviour (after Ajzen, 1985) which purports that intentions toward a particular behaviour are influenced by attitude, subjective norms (acts condoned by significant individuals), and by individuals' own conceptualisation of themselves as knowledgeable, disciplined and skilled. Thus we see knowledge as

a process and practice, within a social framework, rather than a 'possession' (Amin & Cohendet, 2004: 3) and socialisation as the stimulus and carrier of cognitive activity (Ibid.: 67).

Whether the mechanism is trust, sociability or proximity, it seems clear that engagement creates a framework for learning, which, according to Amin & Cohendet (2004: 116), requires regular contact to produce an 'architecture for interaction' involving shared expertise, talk, sociability, argument and disagreement . Groups develop a unique culture (both explicit and implicit). Weick (1995, in Amin & Cohendet, 2004: 125) described organisational culture as the simultaneous functioning of the two main mechanisms of sense construction and collective beliefs (the repetition of interactions and the nature of communication) embodied in a 'common grammar, allowing agents to give sense in the world, to code history and past experiences, and to develop actions'. This occurs despite the often diverse beliefs and experience of members which can, through intergroup links, become negotiators of change, connecting communities that are 'islands of interacting knowledges, with new knowledge relationships waiting to cross the beaches that surround each island, hoping to negotiate change' (Brown & Pitcher, 2005: 126).

Groups that acknowledge a knowledge sharing or generating role are, according to Bandura (in Compeau & Higgins,1995: 195) able to generate greater levels of new knowledge particularly where there is 'congruence in individual member expectations of knowledge-production outcomes', a view reinforced by Amin & Cohendet (2004: 66), who observe that the capacity of a community to achieve its

(often unstated) knowledge-production goals is influenced by 'conventions of meaning and communication and the cultures of action and interpretation that are the product of social organisation and interaction' and that act as learning environments in their own right. A community's capacity to identify, absorb and transform the knowledge it gains from its own, or other communities is dependent upon the way knowledge is managed within that community, strengthened through non-deliberate learning ('rooted in doing', Amin & Cohendet, 2004: 78) and repetition of actions between agents within the community (Ibid.: 123). Knowledge transformation mechanisms can exert a stronger influence than the values or ethics of a group. Hence groups that are conscious of their role in converting external information into internal knowledge reinforce their relational assets (Storper, 1997, in Amin & Wilkinson, 1999: 125) and generate benefit for their members through the creation of environments that support transfer of tacit knowledge, and model knowledge transfer processes. The nature of relationship is thought to be an important factor in the level of influence that the group has on the individual, which will be tested in the field research in terms of environmental attitudes and behaviours.

Economic influence on social behaviour

Given that this research is considering the behaviour of individuals in a business context, it is useful to also reflect on the relationship between economic and social behaviour. Small business is notoriously concerned with immediate return on investment (of time, money and skills) at the expense of investment in development of the business that would lead to greater returns in the long term.

Polanyi (1886-1964) cautioned that ‘economic actions become destructive when they are disembedded, that is, not governed by social authorities’ (Smelser & Swedberg, 2005: 13). The current world view that allows economic goals to dominate social goals (where society is managed largely as an input to the economy) echoes the ‘nose down, tail up’ ethos of small business operators for whom the strongest social influence is often work-related secondary groups, rather than primary groups, hence receiving reinforcement of economic achievement over social or community good.

While local business associations might facilitate the transfer of knowledge between members, for change to occur there needs to be a further process of knowledge transfer within the member’s business and in this way knowledge creation in large organisations shares similarities with knowledge creation and transfer within small business and within the membership of local business associations. Individual members (like individual employees) bring their own framework of understanding based on their beliefs, experience and alliances. Associations have similar features to workplaces in that association members form cliques that, among other things, share and build knowledge. These cliques can be based on informal motivations such as friendships or other bases such as complementary products or services, or training and professional development interests. Knowledge creation within business communities requires the diffusion of ideas, a ‘process of progressive contagion’ where each clique strives to ‘command the attention’ of other cliques to interest them in the knowledge it holds (Amin & Cohendet, 2004: 149). In this research, the contagious idea is environmentalism, which is held by the business association leaders. The

aspiration of members to achieve the business success of the leaders includes adoption of leadership practices such as environmentalism.

Chamley (1999, in Cartwright, 2009: 409) considers influence from the perspective of rational and adaptive personalities, comparing the approach taken by rational agents who infer the likely actions of others (i.e. are 'pro-active' in trying to infer likely changes in the actions of others) and by adaptive agents who deal with uncertainty about the actions of others by simply assuming that other people will continue to do today what they were doing yesterday. Hence adaptive individuals who observe changes in others' behaviour will make a corresponding change in their behaviour, whereas rational individuals are likely to make changes that are sudden and less controllable. One could speculate that the highly individualistic nature of small business owners would tend to indicate rational (rather than adaptive) behaviour, reinforcing Chamley's view that 'odd one out' behaviour results in lowered levels of conformity within the group, further disrupting adaptive individuals. Small business owners therefore present a research challenge, particularly when investigating group influence as they exhibit a dichotomous relationship with peers and local leaders, enjoying the social connection but rejecting any attempt to be told what to do. This research will investigate whether the beliefs and actions of others in relation to environmental practices do influence the behaviour of small business owners, and by extension whether intentionally acting to modify the behaviour of the group generates behaviour change in its members.

Conclusion

The review of the knowledge and learning literature suggests that these fields provide a sound basis for development of behaviour change strategies that can be applied within a social capital framework. The central role of sociality in our lives, and in the lives of small business owners who are the focus of this study, means that processes that are based on sociality are predisposed to succeed and when combined with the powerful influence of social norms, outcomes are more certain.

The critical question therefore, is 'how can knowledge be used to effect change?', particularly in relation to environmentalism, which is the subject of rapid change and contested standpoints, as illustrated by Gupta et al. (2010: p5):

> *Organisational change research suggests that the unpredictability and continuous character of environmental change call on institutions to deal with uncertainty, volatility and surprise through continuously changing and innovative behaviour (Lengnick-Hall & Beck, 2005; Weick, 1988; Wildawsky, 1988; Weick & Sutcliffe, 2001).*

The answer appears to lie in the use of social influence to mediate the process of moving from known to unknown, where groups support (through social capital) the development and reinforcement of expectations about norms of behaviour which address attitudinal barriers, and create simple structures that encourage sharing of tacit knowledge to build a durable scaffolding of learning. This approach reduces the risk of individuals within the group succumbing to trial-and-

error methods associated with unquestioning adoption of answers (single loop learning), and supports a better understanding of the role of double and triple loop learning in adoption of new practices.

Tacit learning, because it is rooted in sociality, creates an interplay between external influence and internal motivation through implicit and explicit learning. This can result in unconscious shifts in attitude (the sociality factor) as well as acquisition of new knowledge and skills (the overt learning factor), made sustainable by repeated exposure and reflection on practice.

The field research will test whether groups that value learning do indeed exhibit stronger social capital, and whether the repetition of both overt and non-deliberate learning opportunities contributes to the development of a learning culture that overcomes small business isolation and supports member innovation, including innovation relating to the adoption of pro-environmental behaviours.

CHAPTER 4: Methodology

Introduction

The thesis thus far has presented an introduction to the problem to be solved − that of engaging an isolated sector (small business owners) in behaviour change practices − through using social capital and learning as vectors for change. Chapter 2 provided a review of the social capital literature, and posed that the dual influences of socialisation and enculturation require further exploration in the field research. Chapter 3 explored processes of knowledge transfer within groups, again to be tested in the field research, particularly looking at the role of tacit knowledge in behaviour change.

This chapter provides an explanation of the method used in the field research, describing the approach, the justification for the realist paradigm and the specific methodology used for the research. The rationale for using a qualitative approach is discussed, looking at how the paradigm and methodology support the research questions. The chapter also addresses the mechanics of the research including ethics, participant selection, design of the research instruments and procedures and timeframes. The approach to and process of analysis is described, including an overview of the data collected, how data were interpreted and whether the results met the aims of the research. Finally the chapter confirms that the methods satisfied the research goals and are a reliable basis for interpretation of the data in Chapters 5 and 6.

In order to test the hypothesis that socio-professional learning between peers is a catalyst for behaviour change, qualitative social research methods were used in three waves to conduct 36 interviews. Participants included Coordinators of Local Business Associations (place-based voluntary affiliations), business owners who were members of these associations, and owners of similar businesses who were not members of locality-based business associations. The research was conducted during 2009 and 2010 and the findings from each wave of interviews informed subsequent waves.

Rationale for the critical realist paradigm

This research is based within a critical realist philosophy: that what we see, feel and do are evidence of the (often) unobservable structures, entities and mechanisms that make up the social world (after Bhaksar 1978, 1989), or in Maritain's terms, critical realism holds that 'what the mind knows is identical with what exists' (Stanford Encyclopaedia of Philosophy, 2007, 2008).

In choosing critical realism, consideration was made of two affiliated philosophies: realism and social constructivism. In general terms, realism holds that reality exists independently of our knowledge of it, thus disassociating the objects in question from our assumptions about them (Sayer, 2000: 2). The implications of a realist approach are that there can be no 'laws' that describe social systems as there are in natural systems, but that regularities exposed by research should identify causality that creates a framework for interpretation of findings. While there are elements of realism in the way the knowledge in this research is constructed, the underpinning theories of social capital and learning

have been widely researched and there is sufficient acceptance of core principles in both disciplines to enable the author to build upon those principles.

Social constructivism supports the critical interpretation by individuals of the meaning of repeated actions (Calhoun et al., 2007). It challenges the view that conventional knowledge is based upon objective, unbiased observation (Burr, 1995), where nothing is taken for granted and meaning can change over time so that the social world will always be in a process of construction (Calhoun, 2007: 45). The design and interpretation of this research reflects some aspects of social constructivism, particularly in the use of respondent's categorisation of learning and practices, but the setting of the research within structures that have universal acceptance (local business associations) precluded a pure constructivist approach.

Critical realism has resonance for this research in that it stratifies reality into structures and processes (Archer 1998) reflecting the dual agency and interdependencies of local business groups and member interaction, where the function of agents to reproduce, transform and be formed cannot be separated and for the purpose of this research, is reflected in the cycle of learning between associations and their members. The aim of realist research is to obtain reliable knowledge in a reflexive open system (Downward et al, 2006: 490) to determine the events that influence 'transfactual causal structures' in different settings (House, 1991: 8). Drawing from this philosophy, the aim of this research is to discover the key influences on behaviour change by examining the three domains of critical realism (real, actual, and empirical). The empirical domain is the observable experiences, in this case knowledge acquisition and behaviour change as reported by research participants; the actual domain consists of the events

which have been generated by mechanisms, i.e. the formal meetings and informal gatherings of business owners; and the real domain comprises the mechanisms that have generated the actual events and are represented by causal relationships between agents, in this case knowledge and power (after Bhaskar, 1978). Of specific relevance to this research is that the actors' view of causation identifies their reality, a necessary factor in open social systems where many mechanisms and interactions are in play although it should not be forgotten that individuals bring their own constructions of reality based on their perspectives, values and existing knowledge, and that the influence of these beliefs needs to acknowledge possible causation from external sources. Hence the application of critical realism should consider how knowledge is acquired, reflecting the single, double and triple loop learning and the Mode 1 (hierarchical) and Mode 2 (collaborative and complex) learning models discussed in Chapter 3.

In business and management studies Syed et al. (2010: 72) argue that critical realism, with its focus on context, meaning and interpretation is more important than a one-dimensional study of a single phenomenon and that scholars need to situate their research within the realist context of time, space and culture: 'the real world is actually a world that is idiosyncratic, egocentric and unique to each person' (Weick 2001: S71). Bhaskar (1978: 13) made an important contribution to the literature with his observation that real structures exist independently of, and are often out of phase with, the actual pattern of events. Bhaskar's observation provides a useful lens on this research which investigates the connection between knowledge and behaviour change, when the two may be quite temporarily disconnected – behaviour change may not immediately follow understanding and

immediate (post knowledge) testing of behaviour may not yield results because events are independent of experiences (Bhaskar, 1978: 32). Notwithstanding the potential disconnect between structures and events, individual reflection on the causation of behaviour change, even when the change was unconscious, will provide insight into the factors that led to both understanding and new behaviours. Based on this principle, interviews with research participants was chosen as the method for this research to allow participants to conceptualise their own experience of the changes from past to present modes of behaviour and belief (Choi, 1999 in Downward et al., 2006: 487).

The research design

The research tests the hypothesis that facilitated interaction with trusted others generates learning that is a catalyst for behaviour change. The sub-sections of this hypothesis relate to interaction, learning, and behaviour change. In designing research that tested these subsections, consideration was made of the implications of using a realist approach, which had benefits in that participants were not asked to subject their experience to artificial categories, but this approach risked the research not coming to a useful conclusion as small businesses are not typically asked to reflect on their motivation, learning styles and the underlying norms that support behaviour.

The design of the instruments (refer Appendix) did have constructivist elements in that participants were asked to describe learning and behaviour in their own words, reflecting their own framework of experience. A totally constructivist

design would have provided interesting results, but would have lacked the rigour that was the goal of this research. The application of critical realism, using the reported experience of individuals, supplemented by stratification using quantitative and qualitative questions, and triangulation by obtaining three different viewpoints (business association coordinators, business association members, and small businesses that are not affiliated with voluntary organisations) provided multiple and independent measures. The conclusions reached through these methods were sufficiently complementary to reinforce the appropriateness of the approach and the strength of the findings.

Qualitative methods

Salomon (1991: 15, citing Geertz, 1979) describes four mutually interdependent considerations in deciding the appropriate methodology to be used in a particular piece of research: the paradigmatic assumptions one adopts, the perceived nature of the phenomenon to be studied, the questions to be asked about it, and the methodology to be used. For this research a qualitative approach is used because it is holistic, looks at relationships, and uses models to understand the social setting. According to Denzin & Lincoln (1994: 2), qualitative research is 'multimethod in focus, involving an interpretive, naturalistic approach to its subject matter' where the qualitative researcher derives categories from the data through constant comparative analysis over the entire period of the study with the aim of reducing data into a manageable model that gradually evolves to explain the behaviour under study, to identify relationships that 'connect portions of the description with the explanations offered in the working models', and finally to determine the

significance of various elements of the working models that can be verified from the interview records (Janesick, 1994: 214). Qualitative methods are favoured in this research over quantitative because the hypothesis was too generic (i.e. possible triggers for behaviour change) to support a specific quantitative assessment, although quantitative methods would be applicable in further research to test the outcomes of this study with larger samples of small business owners.

Qualitative research allows for the examination of events and actions as 'clouds of correlated events' (Scarr, 1985 in Salomon, 1991: 13), and Scarr reminds us that no event operates alone, nor is there a linear pattern of cause and effect, and that team work, intellectual excitement, self-guided inquiry, teaching and learning are inseparable. However, the use of qualitative techniques does not necessarily mean that the research being conducted is qualitative, rather that its focus and intent is qualitative (after Erickson, 1986, in Janesick, 1994: 213) so this research uses quantitative questions (e.g. scaled questions, referencing Morse (1994: 225), that qualitative research may incorporate quantitative methods, although small sample sizes may preclude random selection and sequential triangulation methods are recommended) to obtain readily comparable responses as well as open questions to allow explanation and capture 'thick' description that allows narrative interpretation (Denzin 1989). Importantly, qualitative methods enable the capture of values, the socially constructed nature of reality (Denzin & Lincoln, 1994: 5) that are influential in the public debate about climate change, as well as situational constraints such as cost, space and time barriers to adoption of better practice:

> *What is accepted as a view of 'truth' by society or groups within society is not so much about its level of correctness but more as to its function as to how*

> *particular communities of people construct and reconstruct forms of knowledge.*
>
> (Burnett, 2007: 10).

In determining the optimum research method, a range of approaches were examined and subsequently discarded, including participant observation as too reliant on one person's view (Punch 1994: 84), too time consuming for the available researcher time, and difficult to pinpoint the exact moment of learning; case studies because they were too specific and have limited reliability in representing the findings of one case for more general application (Stake, 1994: 245); ethnography because it explores the nature of social phenomenon rather than testing hypotheses about them (Atkinson & Hammersley, 1994: 248); and grounded theory is insufficiently structured as a stand-alone method to capture the complexity of insight from five separate cohorts. The value of qualitative research is that it is characterised by the simultaneous collection and analysis of data which mutually shape each other (Sandelowski, 2000: 338), and therefore the findings from the first wave of interviews with local business associations shaped the second wave with the coordinators of the associations involved in the detailed study, which in turn shaped the content of the interviews with business owners.

Interview methods

Face-to-face interviews were used, acknowledging the deficits of this method in that 'the spoken word has always a residue of ambiguity, no matter how carefully we word the questions and report or code the answers' (Fontana & Frey, 1994: 361). Fontana & Frey (referencing Benney & Hughes, 1956) support the interview

technique as a sociological tool because ‘interviewing is interaction and sociology is the study of interaction’. In deciding the type of interview (e.g. telephone, face-to-face, group) the most important factors were the likelihood of participation (small business owners are reluctant to leave their premises to participate in non-business activities, so group interviews would not be as successful); the ability to speak frankly (also potentially restricted in a group environment); the ability to use business activity to illustrate and provide context, which is especially important in observing whether the claimed environmental practices were in place and therefore indicated interviews at the business premises; and the ability to quickly establish rapport which is possible in all three methods, but best achieved at the business. Based on these three factors, face-to-face interviews were preferred over group and telephone methods.

The interview instrument (Appendix) provides a mix of structured interview questions in which the researcher asked each respondent a set of pre-established questions with a limited set of response categories, thus reducing variation and error (Fontana & Frey, 1994: 363) and unstructured questions aimed at eliciting explanation, values and assumptions. The structured questions were standardised across the three cohorts to provide easily comparable responses. When asking structured questions, the researcher ‘followed the script’ which established a ‘balanced rapport’ that did not evaluate the responses (Fontana & Frey, 1994: 363). However, even very strict, structured interviews must allow for respondent differences, and interviews that only use structured methods can overlook or inadequately address the emotional dimension (Ibid.: 363). Because this research was investigating how learning and social interaction influence behaviour, it was

unlikely that structured interviews would delve deeply enough into the triggers for learning and behaviour change, so open questions were included to allow the researcher to probe for clarification, assumptions and values. This is supported by Rapley (2004: 15) who noted the importance of in-depth questions or thick descriptions 'where interviewees are specifically encouraged, by questions and other verbal and non-verbal methods, to produce elaborated and detailed answers'.

The author undertook the majority of interviews, with a small number of interviews conducted by an experienced assistant researcher. Both researchers have many years experience in qualitative interviewing techniques (many with small business owners) and were small business operators in their own right and therefore understood the small business environment. This experience supports Adler's (1985, in Fontana & Frey, 1994: 371) directive that the researcher 'must adapt to the world of the individuals studied and try to share their concerns and outlook'. The ability to appreciate the competing demands of the business (particularly when discussing 'non core' activities such as learning), to use language associated with SMEs, and to keep the interview focused to minimise wasted time were all essential to the process of establishing rapport. Both researchers were female, and there was a mix of male and female business and association participants, but because of the business experience and credibility of the researchers, there were no perceivable gender issues or bias. For reasons of participant ease, and because many of the workshops in which the interviews were conducted were noisy, it was decided not to audio-tape the interviews. The researchers wrote down responses verbatim (using pre-agreed 'shorthand' to speed up this process) and the pause between receiving the answer and completing

the written record contributed very positively to participants thinking more deeply about their response, and providing supplementary insights that would not have been possible in a more free-flowing 'conversation'. In order that nuance was not lost, interviews were entered onto the computer on the day that they were completed, and both researchers reviewed the findings and were able to return to the participant to ask for clarification if the response was unclear or incomplete (this happened relatively infrequently).

The research was introduced to participating businesses as 'information about how business managers and owners go about learning and adopting new practices', see example of confirmation e-mail:

> *Hi XXX*
>
> *Just to confirm our conversation today – Kristine Peters will come along for a chat with you on Friday 6th November, around midday. This is to gather some information for her PhD thesis about how business managers and owners go about learning and adopting new practices, and should take about half an hour or so. I believe XXX of the XXX Business Association mentioned this to you.*
>
> *If there are any problems with that date and time please give me a call, but in the meantime have a great weekend and thanks in advance for your help.*
>
> *Best regards*
>
> *XXX*

It was decided not to present the research as environmental, partly because environmental change was being explored as an example of behaviour change, but mainly because the sequence of questions in the interview addressed learning and behaviour change first (unclouded by the environmental 'debate'), and then tested the 'pure' learning and behaviour change responses against the practical example of environmental change. If the research had been presented as environmental research, it would have changed the respondents' attitudes to the learning and behaviour questions. When the researchers came to the section of the interview relating to environmental behaviour, they explained that environmental change was being used to illustrate the findings about how they learn, rather than being an investigation of the participating business' environmental practices (which may have caused concern for some businesses). Because of the limited use of Environmental Management Systems in SMEs (Gunningham & Sinclair, 2002; Geno, 1999), structured and standardised evidence of good environmental practices was not a reliable measure of environmental activity, and this research therefore relied on self-reported environmental practices, expecting to hear reference to concepts like zero waste, eco-efficiency, or cradle-to-grave but applying no limitations as to what might constitute good environmental behaviour, particularly as the increasing community and media attention on the environment referenced a range of concepts for 'good environmental practices' and the use of specific definitions or examples risked excluding some practices. The results showed that the approached used in the research was valid, but that the businesses in the study had a relatively narrow view of environmentalism, largely based on waste management.

Rigour

The major methods of ensuring rigour in qualitative research are reliability and validity checks, within which the key considerations are adequacy and appropriateness. Adequacy refers to the amount of data collected (not the number of subjects) and is achieved when sufficient data has been collected for saturation to occur (i.e. when variation is both accounted for and understood), in practice this requires the researcher to continue to obtain interviews until repetition from multiple sources is obtained, providing concurring and confirming data. Appropriateness refers to selection of the right information for the study and relates to both the research questions (which may evolve as the findings are analysed) and the sample (the participants). In qualitative research, sampling 'occurs purposefully, rather than by some form of random selection from a purposefully chosen population as in quantitative research' (Morse, 1994: 230).

An important factor in ensuring rigour in qualitative research is the use of theoretical saturation (Strauss & Corbin, 1998), which is reached when no new properties or relationships emerge from additional interviews. The process for identifying theoretical saturation was planned prior to the commencement of interviews and involved conducting the same initial number of interviews with each group of association members and reviewing the findings to establish whether theoretical saturation had been reached. Two reviews were conducted at five interviews (per group) and seven interviews (per group), identifying that theoretical saturation was almost in place at seven. A further three interviews per group were conducted to provide an equal number of interviews for each

association group (10), a total of 20 association member interviews. As explained in more detail below, the findings from the association member interviews informed the content of the non-member interviews, and theoretical saturation was approached in the same way for the non-member interviews, thus achieving theoretical saturation for sub-groups (10 interviews each) as well as the small business cohort (30 interviews in total) as a whole.

Rigour was further achieved in reflection of Halpern (1983, in Lincoln & Guba, 1985: 319-320) who describes an audit trail with six types of documentation, which were adopted in this research. The first audit item was the use of a coding system for the raw data with a unique number for each interview, maintained throughout the research process – and allowing de-identification (for anonymity) and quick reference to the field notes to provide context when required. Data reduction and analysis were auditable by referencing individual interview codes with each separate analysis query, making it easy to check the original field notes and saving each separate query with its source metadata thus allowing the data reconstruction process to be easily checked. Data reconstruction and analysis used source notes attached to each set of analyses (documented within the text) only removed for the final version when the content was complete and the focus was on editing. Process notes, a database of contacts, interviews, permission records and communications were maintained to ensure efficient and professional communications and record-keeping.

In terms of the content of the research, rigour was achieved by applying triangulation, defined by Glaser (1978) as slices of data from different sources, reflected primarily in the three waves of interviews and in the structure of the

interview instrument which approached similar questions from different perspectives. Denzin (1978 in Janesick, 1994: 214-215) identifies four types of triangulation: the use of a variety of data sources (data triangulation – achieved through three different interview groups); the use of several different researchers or evaluators (investigator triangulation – achieved through using two researchers and comparing the findings to ensure consistency of methods and outcome); the use of multiple perspectives (theory triangulation – achieved through the perspectives of social capital, learning and behaviour change and a range of interview questions that addressed the same issue); and the use of multiple methods (methodological triangulation – the use of a closed set of analytic categories (Atkinson & Hammersley, 1994: 248) and open questions that provide phrases and statements that addressed the issues in question and allowed complex interpretation).

Finally, this study adopted Huberman & Miles' (1994: 438) verification directives that require researchers to check for 'the most insidious biases that can steal into the process of drawing conclusions', acknowledging that the most frequent shortcomings (Huberman & Miles, 1994, citing Douglas, 1976; Krathwohl, 1993; Miles & Huberman, 1984; and Nisbett & Ross, 1980) are:

- Data overload in the field: addressed by carefully structuring interviews to capture a manageable volume of information using a mix of closed and open questions;
- Salience of first impressions: addressed by including questions that addressed key issues from a number of perspectives, by conducting an

adequate number of interviews, and by undertaking interviews with three different cohorts;

- Selectivity or overconfidence in some data: addressed by careful development of the instrument, allowing time for reflection and adaptation before implementing in the field, and undertaking analysis of the findings of the pilot to check for potential bias;
- Co-occurrences taken as correlations or causal relationships: addressed by conducting interviews from different populations;
- False base-rate proportions, or extrapolation of the number of total instances from those observed: this research does not purport to explain knowledge transfer and behaviour change outside the experience of the field research;
- Unreliability of information from some sources: addressed by conducting sufficient interviews to identify variance where unreliable information is provided; and
- Overaccommodation of information that questions a tentative hypothesis: addressed by using a range of questions to examine the hypotheses.

Scope and limitations

The limitations of this research study were primarily those imposed by the available time of the author and a limited budget for employing additional researchers. Within these limitations, the research was designed with sufficient depth to address the requirements of rigour and validity identified above, and the

author believes that the resulting scope has not had a detrimental effect on the research quality.

The research process

The field research was an iterative process involving four successive waves of interviews, reflecting a typical qualitative 'life cycle' that spread collection and analysis throughout the study and used different modes of enquiry at different moments (after Huberman & Miles, 1994: 431). The first wave aimed to select two local business associations to study in depth, and involved the identification of and interviews with precinct-based local business associations with light manufacturing members across the Adelaide metropolitan area. The findings from these interviews were analysed to select the best locations for in-depth study of local business associations and their members. Wave two involved interviews with the coordinators of the two associations selected in the first wave (Hackham and Lonsdale), during which permissions and processes for further research with members were agreed, and the findings from these interviews were used to informed the fine-tuning of the interviews with members which constituted the third wave of interviews. Finally, the findings from the member interviews were analysed, and the interview instrument adapted to investigate key variables with a comparable group of non-member businesses from a different geographical location (wave four). Each wave was subjected to its own analysis and the findings from all four waves were examined as a whole. This process aimed to reflect Huberman & Miles' (1994: 431) observation that changes in interview

schedules in a field study usually reflect a better understanding of the setting, thereby heightening the internal validity of the study.

Participant selection

According to Rubin & Rubin (1995, in Rapley, 2004: 17) there are four ideal processes of qualitative recruitment: finding knowledgeable informants, getting a range of views, testing emerging themes with new interviews, and choosing interviewees to extend results. Based on this approach, the selection of sites for the research was done in three stages. First, a scan of all local business associations in Metropolitan Adelaide was conducted, identifying four business precincts primarily involved in fabrication and repairs (light industry), located in Edwardstown, Glynde, Hackham and Lonsdale. The light industry sector was chosen because businesses in that sector are typically owner/operator (i.e. are not a branch of a larger business, nor franchises or chains), and light industry tends to be 'dirtier' environmentally than retail or services. Secondly, scoping interviews were conducted with the four business association coordinators and two precincts were chosen based on the criteria of number of member businesses (at least 60), the requirement that a majority of businesses were involved in light industry, and level of local business association activity (associations that were not actively involved with their membership were not included). The scoping interview also gained permission for follow-up contact if that precinct were selected for further study. These interviews resulted in only two associations (Hackham and Lonsdale) meeting all criteria. Once selected, a number of contacts were made with the two Business Association Coordinators to build a relationship so that

they were comfortable in providing access to their members (noting information privacy principles based on the Australian Government Privacy Act 1999). In both cases, the Coordinators took the request to their Boards, and in both cases permission was granted.

Because of privacy considerations, a listing of members was not made available to the researcher, so the two Coordinators identified members within the metal fabrication/coating, electrical, construction, waste management and automotive repairs sectors and sought permission to pass contact details to the researcher. Members thus identified were contacted to gain agreement to participate in the research, most agreed and interviews were scheduled, forming the first round of interviews to inform the first assessment of theoretical saturation. Where members were not in agreement, the Coordinator was asked to provide supplementary contact details, and this resulted in a second round of interviews that completed the theoretical saturation process. All interviews were done at the participants' business premises, reflecting Denzin & Lincoln's view (1994: 2) that 'qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them'. In practical terms, this approach also encouraged business owners to agree to take part in interviews, as they found it easier to take 45 minutes out of their busy day at their own site, rather than travel elsewhere. *Table 1* lists the participating businesses and *Table 2* the industry sectors covered.

Table 1: Businesses interviewed

Adelaide Timber & Building Supplies
AdSteel
Advanced Recycling Technologies
AllBIZ Supplies
Australasian Security
Barry Perkins Motor Repairs
BC Stainless Fabrication
Bob Enwright Electrical
Compuvest
Cottage Lane Automotive Specialists
Duct Hardware
Energy Busters
Grating Industries
Hackham Recyclers
Hackham Sports and Social Club
Harvey Norman Commercial
Hepurn Shopfitters
Metalcorp
Noarlunga Glass/Aquariums Direct
Noarlunga Packaging
PG Automotive
Prime Autocare
Printskill
Quality Crash Repairs
R & M Transit
SA Cooperage
SMP General Builders
Southern Lace
Southside Tyre Power
Steve's Body Shop

Table 2: Industry sectors represented

Sector	**N°**
Agricultural supplies	2
Automotive supplies/repairs	7
Builders	2
Building supplies	6
Catering	1
Packaging	1
Printing and stationery	2
Security	1
Commercial fit-outs	2
Steel supplies and fabrication	3
Transport and logistics	1
Waste and recycling	2

On completion of the interviews with association members, the interview findings were analysed and the instrument adjusted to allow comparisons with non-affiliated businesses in different regions of Adelaide with the purpose (after Morse, 1994: 230) of 'using theoretical sampling to look for negative cases that enrich the emergent model and explain all variations and diverse patterns'. It was

not possible to use non-members of the Hackham or Lonsdale Business Associations, as these businesses were thought to have gained value from the work of the Associations as all businesses in the precinct – members or not – received notices about Association activities, and invitations to Association training, networking and events, and therefore it could be reasonably assumed that there was some influence on these non-member businesses. A review of the findings of the initial business association interviews found that there was no other 'non member' site in Southern Adelaide (Edwardstown/Melrose Park was ideally located as a comparator, but had a newly-formed association), and therefore northern Adelaide was selected because it has similar small businesses to those in the study, but no active local business associations. Businesses in other regions were identified by driving around the light industry precinct and noting comparable businesses, then locating their phone numbers (phone book/White Pages Online) and calling them to ask if they would participate in an interview. Interview times were made with those who agreed. These methods echoed the advice of Morse (1994: 222) that sites must provide access to suitable participants (including consideration of whether the researcher would be welcome); that negotiations for entry to sites could be achieved in a timely manner; and that two settings (i.e. members of associations and non-member businesses) could be selected 'for the distinct purpose of comparing and contrasting the populations' and to simplify the process of data analysis 'by making significant factors more readily apparent'.

Research ethics

The Research Ethics process followed that required by Flinders University and reflected Punch's intent (1994: 89) that ethics concerns revolves around issues of harm, consent, deception, privacy, and confidentiality of data. These have been addressed in the research design through detailed planning and careful consideration of the effect of the research on participants. This section describes how this was managed.

The potential for harm to participants was relatively low, but harm could be possible through careless question design and application if participants were to perceive that their abilities, learning styles, business processes or environmental practices were in question. This was addressed through careful development of the interview instruments (which were vetted and approved by University ethics), which included discussing the content with the local business association coordinators to ensure no offence could be taken. None of the participants enlisted for the study were members of any sensitive cultural or religious groups and all participants were adults.

The author and a research assistant conducted the interviews. In order to maintain confidence in the consistency and interpretation of data, thorough briefings and de-briefings were conducted – as recommended by Morse (1994: 226) 'information must be verified and cross-checked constantly, on an ongoing basis, and researchers must be constantly reviewing notes and other data collected'. Prior to the field work, the research assistant participated in two days of training on the content of Chapters 1 and 2 so that the theoretical underpinnings were

thoroughly understood (thus ensuring that probing questions were on-topic and sufficiently rigorous). The author conducted all of the business association interviews and the first ten member interviews. The research assistant was then fully briefed on the process and nuance of administering the remaining interviews, and these were scheduled with interviews in the morning, and data entry and reflection on findings in the afternoon. In this way the author maintained close contact with the results, and participants could be re-contacted for clarification or further information if needed. The author and research assistant both spent considerable time preparing for the interviews, including role playing the interview a number of times to ensure that the questions were asked as intended and that probing to gain more information from open questions was done without prejudice. Flinders University Ethics approved the use of an assistant researcher.

Specifically in relation to environmental practices (where incorrect practice could constitute a regulatory offence), the interview design was careful to ask for *reported* practice, rather than direct investigation that could cause concern to participants, and no judgement was made on the level of compliance reported by participants.

The process of consent has been described above and observed the Privacy Act 1999. The contact details for the initial round of local business association interviews are on the public record. Once contact had been established, participants were asked as part of the interview for their permission to continue with the research in the next round of interviews should they be selected and all agreed. Those who were not selected were notified by telephone. During the interview with the selected business association coordinators, considerable

attention was paid to the best process for identifying and providing member details. Both association coordinators agreed (on the condition that the process was endorsed by their respective boards) that they would notify all members of the study and ask those who were willing to participate to opt in. Approximately 12 nominations were received from each association, although some of these were not available or declined to participate when contacted to arrange a time for the interview. At the interview, but prior to the commencement of questions, the interviewer advised the participant that their participation was voluntary and that they could withdraw at any time, and consent was obtained in writing and kept on file.

Intentional deception is not ethical and did not form any part of this research. Researchers were not required to participate in any unethical or illegal activities in order to gain the trust of participants. Involuntary deception is possible where the researcher may not be aware of information that is important to the participant and may be omitted, but this situation was avoided through discussion about methods and interview content with the business association coordinators who were sufficiently comfortable with the researcher relationship to ask detailed and penetrating questions about the process, content and use of material.

Privacy and confidentiality of data was managed through the use of identification codes on interview records that were attached to the electronic copy of the data (Excel spreadsheet) and then removed to de-identify the responses for all analytical processes. Where respondents had provided a particularly pertinent quote that the researcher thought might be used verbatim in the research paper, the participant was asked whether it was possible to use that quote, and the quote was

read back to them to confirm that the wording was correct. The names of participating businesses are provided and quotations attributed in this thesis, but they will be replaced by pseudonyms in any published works. Research data is held securely under the author's private electronic and paper filing systems, with daily off-site backup to ensure data integrity.

The survey instruments

The key theoretical constructs that the interview instruments measured are that social capital networks influence behaviour and that learning and behaviour change are more effective in tacit learning situations. The Research Questions identified in Chapter 1 (RQ1 that learning from trusted others influences attitudes and behaviour, and influence extends to environmental practices; RQ2 that social connectivity is a critical element in creating an environment conducive to behaviour change, structured around the themes of group norms, learning and environmental practices; RQ3 that social capital and learning affect environmental practices) provided the basis for separate survey instruments for each wave of the research. The instrument for the first wave (initial scoping of potential business associations) was quite brief and primarily investigated the membership of the group, the intent of the group in influencing the attitudes and behaviour of its members, and the group attitude to environmental practices. The instrument for the second wave (interviews with selected business association coordinators) was designed as a guided interview to elicit discussion and very few scaled questions were included. The third wave of interviews comprised the bulk of the study and the instrument was quite long, using both open and scaled questions. This

instrument was structured in two parts: general social capital and learning, then social capital and learning specific to environmental behaviour. The third wave instrument included a number of questions specifically relevant to members of local business associations, which were omitted in the instrument for the fourth wave, which was otherwise almost identical to the third wave instrument.

The interview instruments were initially developed in Excel, thus allowing successive versions to be saved in one workbook (using separate worksheets with dated tabs), using a hyperlinked Table of Contents for each file that referenced evolutions in the instrument content; this method is used by the Australian Bureau of Statistics for managing large data sets. The interview questions (refer Appendix) were structured in a defined sequence designed to 'break the ice' with general questions, then explore learning and behaviour change in principle, then test how learning and behaviour change actually occurred in the case of environmental practice. The instrument included questions that checked the veracity of statements made by the participant (Fontana & Frey, 1994: 371). Scaled questions were followed by an open question to ensure the basis for the response was understood and, because the sample was small, to provide explanatory data that could be used to describe and interpret the findings.

Researchers were encouraged to engage in conversation in relation to unstructured questions, but to 'stick to the script' with structured questions – although, as a result of the pilot (see below) a set of clarifying examples were developed for the more esoteric structured questions to ensure participants fully understood what was being asked. Questions included a mix of 'loose' inductive, and 'tight' deductive design (Huberman & Miles, 1994: 431), typically structured as a

quantitative lead-in (using Lickert scales) and a follow up 'tell me about' explanation, after Kaplan (1964, in Huberman & Miles, 1994: 432) in that 'explanation – whether cast in purposive or straightforwardly historical terms – is in effect a 'concatenated description' that puts one fact or law in relation to others, making the description intelligible'. Thus the scaled questions could be cross-referenced quite accurately, with additional contextual explanations for the resulting relationships.

The establishment of causal relationships, particularly how a temporal series of activities led to specific outcomes and disproved other potential hypotheses, was essential to the generation of conclusions from this research. However, self-reporting of the acquisition of knowledge (because of the dilemma that it is difficult to remember the 'before known' state) does not follow simple temporal cause and effect as observed by Huberman & Miles (1994), Faulconer & Williams (1985) and Abbott (1992). Instead, the research investigated causal multiplexity, 'where causes are multiple and conjunctural, combining and affecting each other as well as the supposed effects' (Ragin, 1987 in Huberman & Miles, 1994: 435) using a traditional framework of followability (Abbott, 1992; Polkinghorne, 1998 – both in Huberman & Miles, 1994: 435).

Pilots are generally considered to be pre-interviews with selected key participants to allow the researcher to focus on particular areas that may have been unclear or test certain questions, plan the effective use of time, and provide the context for interpretation of the beliefs and behaviours of participants (Janesick, 1994: 213). Pilot interviews were conducted for wave three with two businesses (the small number of participants in the preceding waves made piloting impractical) with the

participant's permission to follow up these interviews with queries should changes to the instrument alter the content or intent of specific questions. The result of the pilots showed that only minor changes were required that did not affect the outcomes of the pilot interviews and no re-interviewing was necessary.

Data management

Data management is a complete system of data collection, storage and retrieval (after Huberman & Miles, 1994: 27) that aims to ensure high quality, accessible data, document how the analysis had been carried out, and provide for secure and accessible retention of the data and associated analyses. For this research, that system involved design of data management and analysis prior to commencement of collection to ensure data integrity at all stages; designing the 'database' at the same time as the interview instrument, and testing the fit between the two in the pilot stage; keying in the interview record on the same day as the interview (to capture the detail and nuance before it was forgotten); de-identifying data as soon as it was converted to electronic format; maintaining safe (and well organised) storage of hard copy interview findings; limiting access (to researchers during the research phase, and then to the author during the analysis stage) to the hard drive where the main data file was stored; and secure off-site backup of the electronic file.

Assumptions

All research studies make assumptions. This research was underpinned by a number of assumptions, not the least of which was that the sample represents the target population, however this assumption is qualified in that the author does not claim that the study results would apply to all small businesses. Because of the business association coordinator input into sample selection (where coordinators aimed to provide a cross section of members) it would be assumed that the findings are reasonably reliable in relation to the two associations studied. Regarding the non-member businesses, the reliability of the sample is much lower because of the size of the small business sector and the variability of individual business owner ability, attitude and connectivity.

Researchers should be aware of making the assumption that all respondents interpret the questions in the same way (inferring that different responses reflect different experiences and attitudes of participants), instead of considering the possibility that each respondent has interpreted the question differently. Similarly the interpretation of a question may lead respondents to the same answer, which appears to indicate agreement but may be a flaw in question design. The nature of the research topic (behaviour, attitude, learning, practice) with very few absolutes (i.e. responses that could be verified) could lead itself into the trap of false interpretation described above, but this problem was anticipated, and the instrument was designed with a number of different and somewhat oblique references to the same concepts to test and verify response consistency.

The research assumes that the instruments have validity and are measuring the desired constructs. There is greater confidence in this assumption because of the process of development that included consideration of the literature, a scoping wave and a discussion wave of interviews with informed business association leaders prior to the final development of the wave three and four instruments. The use of a pilot for wave three also added to the confidence in this assumption.

The methodology also assumes that respondents have the ability, understanding and willingness to participate (Bateson, 1984, in deMarrais & Lapan, 2004: 288). Ability and understanding are perhaps the easier traits to assess, however researchers should be cautious about the behaviours relating to 'compliant unwillingness', where respondents participate but do so unwillingly which may be manifested in behaviours such as lying, providing socially desirable responses, or refusing to answer some or all of the questions (after Millham & Jacobson, 1978 in Paulhus, 1985: 598). These factors were addressed through the construction of each successive wave based on the knowledge of the target audience gained in the previous wave. Hence the first (scoping) wave sought simple responses from coordinators and the interview was kept short to ensure their willingness to participate. The selected coordinators for the in-depth study (Wave 2) had already been engaged and had made a commitment to continue with the research. The member businesses (Wave 3) were selected by their coordinators on the basis of their ability, understanding and willingness (acknowledging that this introduced sample bias as those who were less able or willing were excluded). The non-member businesses (Wave 4) are perhaps the least reliable in terms of meeting the criteria of ability and understanding (all were willing because any who were not

had self selected to not be involved), however in the most part their responses show a good comprehension of the task, evidenced by the content of their responses to open questions.

Still another assumption is that respondents will answer truthfully. This is perhaps the most vexed of the research assumptions as knowledge in itself is fallible and changeable (Reichardt & Rallis, 1994, in deMarrais & Lapan, 2004: 272) and 'truth in some absolute form is probably an illusion' (deMarrais & Lapan, 2004: 272). This issue was addressed in two ways. First the instrument avoided threatening or sensitive questions (Alreck & Settle, 1995) by talking about belief and experience rather than standards. Secondly every effort was made to establish a good rapport between the researcher and the respondent. This was achieved in a number of ways: by being introduced to the respondent (in Waves 2 and 3); by conducting face-to-face interviews that allowed the researcher to probe for more information and to observe the body language of the respondent; and by focusing on questions that were of interest to the respondent (their business, their own learning, their connections to others). There was some early concern that the length of the Wave 3 and 4 interviews would cause respondents to lose interest, thus increasing the potential for untruthful (or flippant) responses, however the pilot showed no indication of this nor did the quality of response reduce in later questions in the interview – in fact, most participants were keen to keep talking once the interview was over and many offered to give the researchers a tour of their businesses.

Analysis

A planned approach to data analysis commenced well before the interviews were conducted, reflecting Kvale's (1988: 90, in Huberman & Miles, 1994: 429) edict to never conduct interview research in such a way that researchers arrive at a situation where they have to ask the question 'How shall I analyse these interview transcripts?'. The first step in the analysis process was to reduce the breadth of the research to a conceptual framework (described in Chapters 2 and 3), structure questions that specifically addressed that framework, and identify the appropriate methods for collecting responses to those questions (semi-formal interviews as described separately in this chapter).

Once individual interviews were completed, the data were entered into the database (an Excel spreadsheet). Microsoft Excel was chosen over dedicated database or qualitative analysis applications because there are no limitations to the size of the entry in each cell (hence full quotations could be captured verbatim and stored in their entirety); quantitative data could be analysed and modelled; it is simple to add coding as a new column and still retain visual reference to the original text (in adjoining columns); the *Find All* function provides a contextualised keyword search; large quantities of data can be stored on very small files, enabling quick operations; and importantly, the software is readily available and does not require on-going subscriptions that expose researchers to the risk of losing access to data if licenses are not renewed. Excel's multi-tab function enabled the storage of successive versions of the processed data in the same file – providing a quick reference to the raw data when required. Thus the data were easily accessible, easily summarised, and could generate patterns and

themes that allowed for the 'multiple, iterative set of (analysis) tactics that is qualitative analysis' (Chesler, 1987; Fischer & Wertz, 1975; and Schillemans et al., n.d. in Huberman & Miles: 429).

As explained earlier, a mix of quantitative and qualitative data were obtained, and in the analysis process, Bryman (2001) and Morgan's (1998, both in Brannen, 2008: 314) thoughts regarding the importance given to each of the qualitative and quantitative elements were taken into account, where each data set was 'interpreted in relation to both the conceptualisation of the research question and the method by which it was generated, and their role and status in the research process' (Ibid.). The process of analyses of waves three and four was done in stages. Initially, each question was analysed in isolation, then broken down into the component cohorts (Hackham, Lonsdale, non-members), then cross-referenced to other identifier variables such as firm size, industry category and length of membership. Qualitative responses were linked to individual question responses and to respondents' quotes throughout the process, and keyword searches then used to provide additional meaning. These findings were documented in tables and graphs with explanation, with percentages used in some situations to provide an easily-understood comparison, but acknowledging that the use of percentages to extrapolate findings to a broader sample would be unreliable.

With the basic analysis done, patterns were sought in the findings (bracketing) after Janesick (1994: 216) which allowed the researcher to treat the data in all of its forms equally, enabling the clustering, categorising or grouping of data by constant comparative analysis to look for statements, indices of behaviour and

exploration of content relationships. Both across-case and within-case analysis (i.e. comparisons with other respondents, and examination of the responses of each individual respondent) was conducted, seeking indicators of verification and contradiction. It was at this stage of the analysis that the value of the instrument design, with multiple questions about the same topic, was realised as it allowed derivation of fine-grained meaning. The result of the pattern exploration process provided deeper explanations that were used to provide context and insights in the description of findings in Chapters 5 and 6.

Conclusion

The analysis undertaken for this thesis proved the research method and instruments to be appropriate. The critical realist approach was successful in gaining comparable information about the subjective topics of learning and environmentalism without threatening the self esteem of respondents.

The use face-to-face interviews with both scaled and open questions within a multimethod qualitative framework allowed comparisons across the three business cohorts as well as an understanding of the meaning behind these findings. The triangulation of qualitative and quantitative questions increased the reliability of the findings.

A purposeful approach to sampling delivered useful data and theoretical saturation was achieved within the ten interviews for each of the three small business cohorts. The interview instruments were structured appropriately to allow the researchers to create a free-flowing conversation that established rapport with the respondents, and to avoid question-order bias. Respondents provided thorough

and insightful responses to all four research waves and the interviews met the criteria of adequacy and appropriateness. The use of two researchers who constantly cross-checked the findings added to the reliability of the research.

Using Excel for data management proved to be an effective method that supported analysis, anonymity and reliability checks, and met each of Halpern's six criteria for rigour. A thorough and planned approach to data collection and interpretation provided excellent results and ensured that the field research was congruent with the literature research and addressed the research questions established in Chapter 1. The findings from the field research are discussed in the following two chapters.

CHAPTER 5: Social Capital Findings and Discussion

Introduction

The research questions centre on social capital − the influence of groups on individual behaviour and on learning − how individuals make the transition from knowing to action. Previous chapters have provided the grounding for the field research through the literature on social capital, looking at networks, norms in voluntary groups, proximity, innovation, behaviour, and knowledge as a contributor to social capital. The literature on knowledge transfer and behaviour change addressed the epistemology and ontology of knowledge, as well as examining the connection between individual and social learning, tacit knowledge, and how double and triple loop learning are essential to changing the dominant paradigm. Chapter 4 provided a description of, and justification for, the methodology, which included a comparison of two local business associations, and then comparison of the findings with small businesses that were not aligned spatially or in formalised voluntary groups with their peers.

This chapter describes the field research findings from the social capital perspective, and in doing so mainly addresses Research Question 2: the role of social capital in creating and enforcing norms of behaviour. Because there is overlap between learning and social structures, this chapter also addresses social capital elements of Research Question 1: how learning from trusted others influences attitudes and behaviour; and Research Question 3: how learning and social capital have influenced the adoption of pro-environmental behaviour.

Chapter 5: Social Capital Findings and Discussion

The field research produced a considerable quantity of data on the key topics of social capital and knowledge transfer. To expedite the presentation of findings, the two topics have been presented in separate chapters: Social Capital Findings and Discussion (Chapter 5) and Knowledge Transfer Findings and Discussion (Chapter 6), both of which include analysis and discussion of the findings. This chapter presents the social capital results based on in-depth interviews with two local business association Coordinators (Hackham and Lonsdale) and 30 small businesses (ten each from Hackham and Lonsdale Local Business Associations and ten from non-aligned businesses in other areas of Adelaide ('non-members').

Context

The Hackham and Lonsdale commercial precincts are located in the southern region of the Adelaide metropolitan area in the City of Onkaparinga. Both precincts are confined by land-use zoning, with the Hackham precinct being the smaller of the two covering an area of approximately two square kilometres, whereas Lonsdale is a much larger area of approximately 20 square kilometres. Both Hackham and Lonsdale have local business associations with membership principally derived from within the precinct. Ten businesses from each precinct were interviewed, and the findings from these 20 interviews were compared with the findings from interviews from ten non-affiliated businesses located in north and west Adelaide in the suburbs of Elizabeth, Golden Grove, Grange, Marleston, Mile End, Salisbury and Welland.

Southern Adelaide is restricted in its potential for business growth by two key factors: shortage of industrial land, which limits the opportunity for businesses

within the region to expand; and lack of good transport networks (there is no freight railway and no expressway to connect to ports, airports, or the arc of industry in northern Adelaide). While this situation affects both Lonsdale and Hackham, Hackham businesses tend to service local customers, and therefore location is more important than growth. On the other hand, Lonsdale has a higher proportion, and larger number of businesses that supply markets outside the local area and the growth of these businesses typically requires greater space and better freight services than are available in southern Adelaide. As a result, a greater proportion of Lonsdale businesses relocate, some to larger premises within the precinct, but many to northern Adelaide where industrial land and access to freight provide commercial advantages.

The Hackham Business Association has approximately 50 members, mainly from the manufacturing, fabrication and service industries. The Lonsdale Business Association has approximately 130 members in the manufacturing, fabrication and retail sectors. The average length of membership reported by Hackham members was 9.36 years and by Lonsdale members, 6.87 years.

All but two of the research respondents were business owners (the others were General Manager and Operations Manager) and participating businesses ranged in size from one employee (the owner) to 50 employees. The average size of Hackham businesses was 10.0 employees, of Lonsdale 11.1 and of non-member businesses 5.4 employees. The majority of participants (21 businesses) had less than ten employees although five had between 9 and 20, and four had 20 or more

employees. *Table 3* shows business size (based on number of employees) by sector.

Table 3: Number of employees by sector

Sector	N^{o} emp
Agricultural supplies	6
Automotive supplies/repairs	52
Builders	4
Building supplies	14
Catering	12
Commercial fitouts	33
Packaging	5
Printing and stationery	21
Security	3
Steel supplies and fabrication	57
Transport and logistics	15
Waste and recycling	43

Source: Peters 2009/10 fieldwork

Social capital at Hackham and Lonsdale

The social capital element of the research was structured in three ways: general indicators of social capital, examination of the links and bonds between businesses, and examination of the role of social capital in behaviour change, particularly in the case of environmental behaviour.

Membership of voluntary groups has been widely used as an indicator of social capital (Putnam, 1995; Ladd, 1996; Wuthnow, 1997), and based on this, interviews included questions about the reasons for joining local business associations, refer *Table 4* which shows responses coded by keyword.

Table 4: Reasons for joining local business association

(n=number of responses)

Reason	Hackham	Lonsdale	Total Mentions
Power/representation to Govt	11	5	16
Connections/networks	7	2	9
Right thing to do/local support	3	6	9
Information/gain other perspectives	1	4	5
Encouraged by other members	2	2	4
Address issues	2	1	3
Improve the area	3		3
Low cost	2	1	3
Meetings at the right time	1		1

Source: Peters 2009/10 fieldwork

As can be seen, the most frequently-reported reason for joining was to gain strength in representing local needs to government, with this reason more dominant in Hackham than Lonsdale. Some background information regarding the initial drivers for establishing the associations is useful in understanding this finding. Hackham grew out of local concern about the look of the area (a perceived lack of Council investment in signage, footpath and roads, and lack of police action on graffiti and vandalism), whereas Lonsdale's founding members had some interest in pressuring Council, but were not driven by activism. Their key driver was general business connectivity, indicating a weaker causal trigger than was the case in Hackham.

A greater proportion of Hackham members reported that they joined their association to access connections and networks, which shows a direct interest in the social capital opportunities provided by the association. On the other hand, Lonsdale members mainly joined because it seemed to be 'the right thing to support local businesses', a quite different imperative than seen at Hackham, and

one which does not imply social capital motives such as active membership or social connection. Lonsdale members were also motivated to join in order to obtain access to information; again a 'hands off' motivation that reflected the primary activity of the association at that time and one that may indicate an already low level of connection with others who hold useful information. This may explain why only one Hackham member mentioned information as a driver for membership, as information sharing is implicit in the communications embedded in Hackham's already strong social networks, illustrated by a comment by a Hackham member:

> *There were benefits, I could see what other businesses are doing, it gave a sense of solidarity, we could find out about other little businesses in the area so we could refer people. At that time there had been a high turnover of businesses in our area and it was getting hard to keep track of who was there, so the association gave us connections. (Hackham member)*

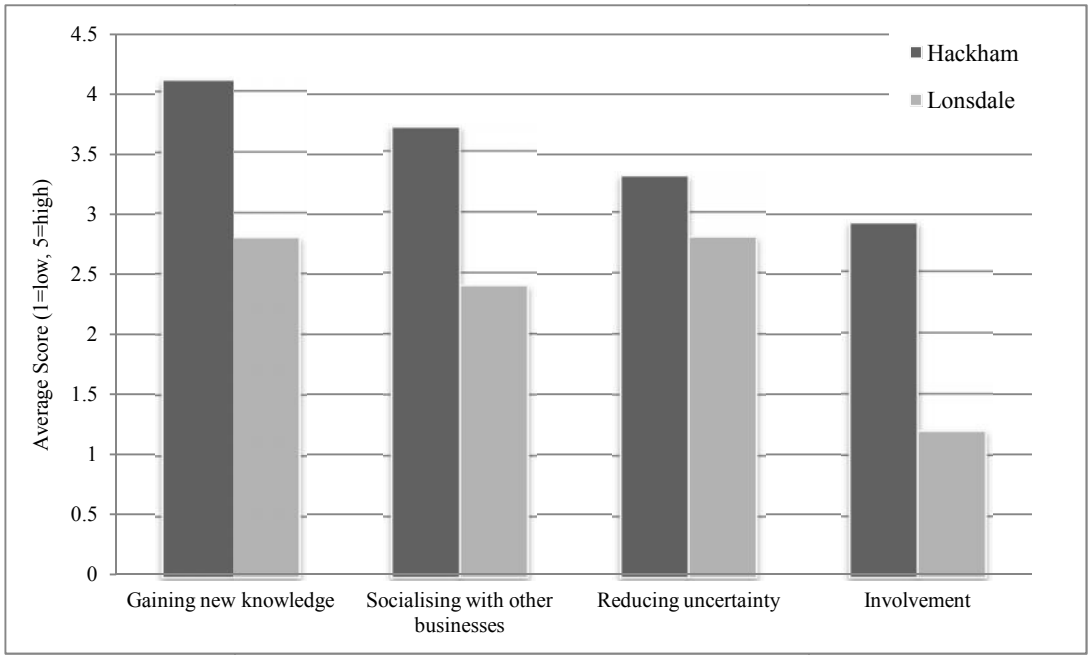
Membership

None of the businesses (in any of the three respondent groups) were members of environmental associations or organisations, even though this criterion had not been part of the participant selection process. This probably reflects a generally low level of membership of environmental groups across the SME sector. Nearly all (nine of the ten) Lonsdale respondents were members of Trade or Industry associations, compared to five Hackham businesses and four non-member businesses; again, this may be an indicator of lower local connectivity at Lonsdale, although for some sectors (e.g. motor vehicle repairs), almost all

operators within the sector are members of industry bodies such as the Motor Trades Association because of licensing obligations or insurance and training benefits.

Motivation for membership was tested in a series of scaled questions that explored the value to members of key aspects of membership (importance of knowledge, socialising, keeping abreast of change and involvement), referencing Nooteboom (2000, in Amin & Cohendet, 2004: 123) who suggests that the important elements of social capital are relational and cognitive proximity, the cognitive efforts that contribute to the circulation of knowledge. Each association's responses are shown in *Figure 2.*

Figure 2: Factors associated with membership



Source: Peters 2009/10 fieldwork

For all factors, Hackham members rated their responses higher than Lonsdale, with the highest Lonsdale results being for ‘gaining new knowledge’ and ‘reducing uncertainty’ (both scored an average of 2.8 out of 5) and the lowest for their level of involvement (1.2). On the other hand, Hackham members placed much higher value (4.1) on ‘gaining new knowledge’, and much lower value on ‘involvement’ (2.9). Respondents were not specifically asked for comments about this question, however the researchers recorded any that were offered: Hackham members provided comment about ‘socialising with other businesses’, with one mentioning the difficulty of making time to socialise when work was so busy, which may provide insights as to why socialising rated lower than learning – business owners will make time to learn because it can have direct benefits to the business, but socialising is often seen as unrelated to business development, despite the use of socialising to develop marketing relationships. Perhaps the unexpected low values placed by Hackham members on socialising reflects that social activities are so embedded within the group culture, that they have established the essential element of group engagement and community sense-making (Wenger, 1991).

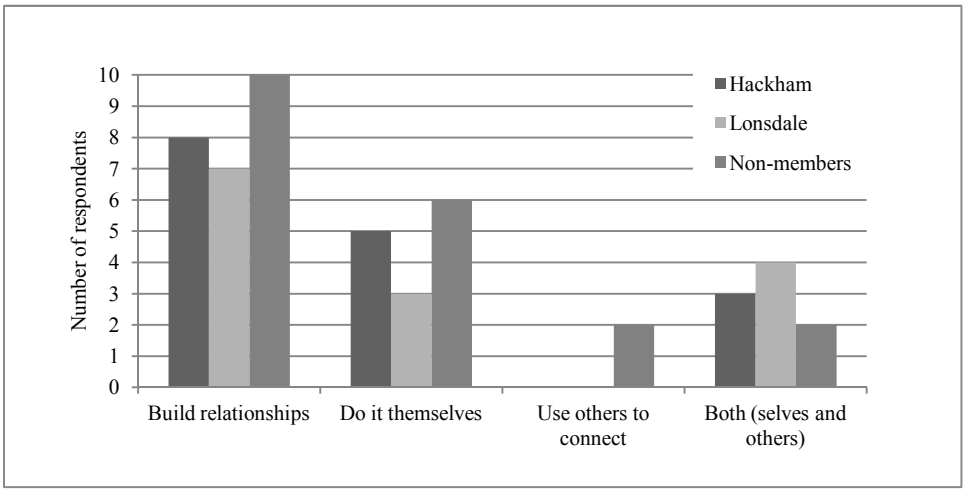
Members of both associations made comment about ‘reducing uncertainty’; Hackham’s comments related to the benefit of gaining information that was not industry-specific, whereas a Lonsdale member said ‘it’s nice to know what’s going on or I don’t feel in control’. Comments from both associations about the level of involvement reflected the participants’ personal experience of changing levels of participation: ‘it varies from time to time and we use it as we need to’ (Lonsdale) and ‘initially I was very involved, but it has now dwindled because of

our involvement with football training' (Hackham). These last comments are insightful, as the involvement of small business owners in non-business activities must also take into account their own family priorities which change over time. The findings of this set of questions are that, overall, Hackham members valued their local business association membership much more than Lonsdale members, and that Hackham businesses value knowledge acquisition over socialising. Thus Hackham members' interest and motivation appear to have a much stronger social capital driver than Lonsdale, a theme which is evident throughout the findings of this research, and is reflected in the knowledge acquisition strategies of both groups.

Associations and connectivity

The social capital literature establishes the importance of interpersonal connections to create and maintain social capital linkages. The research sought to discover whether members of associations used different relationship-building strategies (to non members) when seeking learning opportunities. Respondents were asked 'if you need to find out something new, do you consciously build relationships with other people who have this information?', *Figure 3* shows the total number who 'build relationships' and then a break-down of whether they undertake relationship-building themselves, use others for introductions, or use both of these methods.

Figure 3: Use of connections to gain knowledge



Source: Peters 2009/10 fieldwork

Eight of the ten Hackham businesses, seven Lonsdale and all non-members purposely built relationships to gain new knowledge (bridging) – with the higher incidence of relationship-building by non-members supporting the hypothesis that this cohort have no ready access to a pool of knowledgeable people. Eight Hackham and non-members built relationships themselves, compared to seven Lonsdale members. Comments provided by Lonsdale members indicated a more individualistic approach to getting information: 'I search the web, it's quicker but not necessarily the best way' and 'I try it myself and if it doesn't work I get someone else who may have better contacts'. However there was evidence of Lonsdale's purposeful use of linkages − 'if I'm chasing something in particular and don't know anyone in the field I will ask someone I know to put me in touch' − and non-members' comments revealed looser networks − 'I gather the information myself'; 'it usually goes that way, where someone will introduce you to someone else'; 'sometimes I find that information down the pub, informally there's an underlying network'; 'there is always someone that you know that will introduce you'; and 'we tend to make the connection ourselves, we might know a little bit

about them and then go and see them and introduce ourselves'. Malmberg (2003: in Amin & Cohendet, 2004: 96) emphasises the importance of both structured and unstructured interactions, especially those that are 'unplanned, but also relatively broad and diffuse and sometimes unwanted and often seemingly of little immediate use'.

The personal relationship-building by Hackham appears counterintuitive to the formation of social capital, as it would seem more logical that groups with high social capital would rely on connections within the group (supporting the concept of bonding social capital, Putnam, 2000). However, viewed from another perspective this finding indicates a foundation skill set that enabled Hackham to develop a strong social capital culture, their willingness to seek out information from others created the 'oil' that lubricated social capital formation. The following quote epitomises the multiple-linkage approach mentioned by a number of Hackham members and relates to the structure/agency debate in the social capital literature:

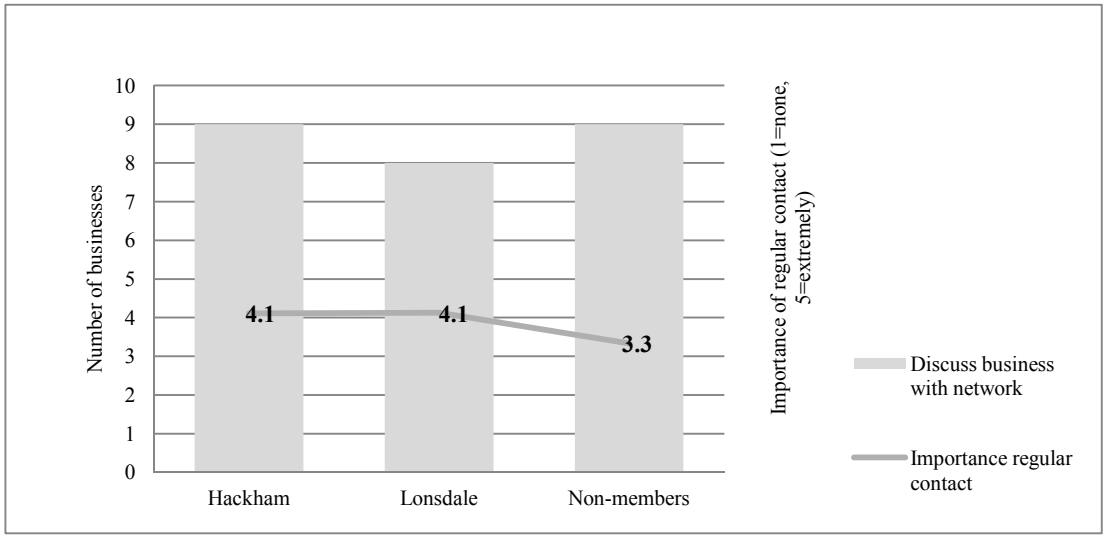
> *The association breeds familiarity and it goes back to us previously being isolated and the association now being there for you. The other members will wave to you, it is a good thing. If I have a specific need I could ask the Coordinator and he would ask around and get an answer for me. I can turn to the well established businesses to get an answer to questions that I may have. (Hackham member)*

Another comment by a Hackham member who said that they did not build relationships is also insightful in social capital terms: 'I don't build relationships

consciously, it comes up serendipitously. If I have a person to ask and then a rapport may build.' The availability of people who are prepared to provide answers without the investment in prior relationship-building is symptomatic of a socially-connected milieu. Another Hackham member commented 'I find that there is a spin off from people that help me in various fields to others that they know', showing that members recognise and value the extended network connections available through this group, reinforcing the value of weak ties through trusted associates.

The interviews delved into whether business groups or networks were used as a basis for discussing problems or challenges (i.e. acquiring new knowledge). Respondents were asked about their groups and networks ('even informal ones like catching up with other business owners at the pub') and whether they discussed business issues with these groups. The columns in *Figure 4* show the number who discuss business with networks (nine Hackham and non-members and eight Lonsdale) and the line on the chart shows the importance of regular contact as rated by respondents.

Figure 4: Use of network to discuss business challenges



Source: Peters 2009/10 fieldwork

A greater percentage of Hackham and non-members discussed businesses with their networks than Lonsdale members, but Hackham and Lonsdale members attributed slightly more value to regular contact than non-members, which aligns with the previous finding that non-members are more likely to use loose networks when they need information. The stronger social capital in the business associations is reflected in the frequency of contact (Tsai & Ghoshal, 1998). Their comments in relation to this question correlate with the previous findings regarding the use of networks, with Hackham members' comments reflecting different aspects of the socio-commercial relationship:

> *If you mix with business owners on a social level it is a good thing. It is pretty important if you feel as if you are friends with them and it is easier to have those associations. You can experience stress from a lot of different angles being a business owner on your own. There is also a subtle difference in asking questions*

in the business association arena rather than knocking on a business' door and fearing that you may disturb them. (Hackham member)

They're mates and you can ring a mate that you have a good solid friendship with. For example, our computer tech guy has an eccentric sense of humour and we get on. (Hackham member)

If you don't have regular contact and you approach people for information, you feel like you're using them, and I hate using people. It's very important that you have regular contact, but then most of my friends are in business. (Hackham member)

Lonsdale members' comments showed more caution in the type of person with whom they would interact: 'a lot depends on your history with the person' and 'being around people socially helps to work out which person is approachable, but I'd only do it in a professional environment only, not in a pub', although there was one comment that showed that some Lonsdale members feel that frequency in discussing business issues is important.

I find that people are reinforcing to each other the problems of the area and business locally. But then people talk to each other they say "Hi, how's business", and they feel safe talking with other local people because information from the papers is not relevant, grass roots is where you find out what's going on. (Lonsdale member)

The comments by Lonsdale members indicated a lower level of trust than at Hackham, symptomatic of the looser social capital structures in that precinct.

As might be expected, non-members' use of networks was less bounded by place: 'I have a vast network of family and friends that I can talk to for gaining knowledge and workshop experience', but still recognised the (sometimes reluctant) necessity 'I find talking shop out of hours a bit boring but it is unavoidable' of connectivity 'regular contact is very important and the pub is always a good place', so non-members sought out business networks when needed, but lacked a structure of regular contact to assist them to get information. In summary, the findings support the social capital literature through the recurrent theme of connectedness and trust between association members, and the strongest bonds were reported by the members of the Hackham Business Association with its more durable spatial and historical bonds.

Learning through social capital connections

Shared activities are a feature of the process of social capital formation (Nahapiet, 1988), but they are also important in the transfer of knowledge, particularly tacit knowledge (Cummings & Teng, 2003). The research sought to identify whether local business associations created opportunities for shared activities to support learning and strengthen social capital ties and whether the learning experience was any different for non-members who lacked this social infrastructure. The interview instrument used examples such as site visits, practical workshops and joint projects to illustrate the concept of shared learning. Both coordinators said that they used shared activities to created learning opportunities. The Lonsdale Business Association Coordinator gave examples such as first aid, site visits to

training providers and recycling depots. The Hackham Coordinator also mentioned these examples, and in addition described how the association organised activities for the explicit purpose of creating shared learning:

> *We've set up practical workshops on computer training and dinner functions with specialised content like the Police talking about the interface between family and business, they make it relevant to the business owners as family members by talking about computer abuse of kids and online safety and things like gambling in the workplace, it gave people a chance to discuss it at the function, and we made sure that the program allowed time for this. (Hackham Coordinator)*

The business perspective was gained through a question about the value of 'doing things with others to help them to understand and implement new ideas'. Hackham members had the highest average score of 4.6 (1 = not useful at all and 5 = very useful) for the usefulness of learning with others, non-members averaged a score of 3.8, and Lonsdale members scored lowest with 3.0. Because of the different focus of the two associations the difference in the Hackham/Lonsdale score is not unexpected, but the relatively high average score of the non-members is noteworthy, with explanatory comments providing some insight about the value of shared experience ('because I am illiterate (joke), no really, practice is always best') and the difficulty of arranging learning experiences that go beyond simple information transfer ('As I am on my own here at the moment I just do what I do, I should implement more new ideas. If I need information I ring up other people in the industry for information or I use the internet.'). These comments illustrate the qualitative difference of connectivity and learning between associates

(informal group) and association (formal group), a pattern that is repeated throughout the findings.

Hackham businesses provided comments that indicate that practical learning is accepted as a normal part of work: ‘I am of an age group where I learn practical skills by repetition, I am a hands on learner and I have to do it myself to learn something’ and ‘we work that way all the time, we don’t have templates, what we need we have to make’. These comments illustrate that for small business, learning is focused on the specific demands of the job, rather than looking deeper at underlying methods or more widely about the implications of the business activity in the wider world.

One Hackham member spoke of the role of the Hackham Business Association in creating opportunities that develop an appreciation of the benefits of shared learning: ‘we went to a lecture organised by the association about how to do things, learning it together helped our approach to the business.’ It is not clear whether the Hackham Business Association overtly raises member awareness of their personal learning styles, but it is evident that a culture of learning has been developed at Hackham, demonstrated by member interest in learning, and a willingness to learn and to discuss their learning experiences. Hackham's leadership skills should be acknowledged for the establishment of the learning culture, reflecting Akbar’s (2004) view that higher trajectories of knowledge are endogenised, and individuals (in this case the Hackham leaders) are repositories of new knowledge and achieve the status of institutions in their own right, which in turn realises advantages from sharing rather than withholding knowledge.

By comparison, only one Lonsdale member spoke about hands-on learning, but lamented that this is not always available: ‘In practice, we would like to be very hands-on. But we mostly learn in 'sit and listen' environments, I hate it, I'd prefer hands on practice, it’s more important than theory.’ These comments illustrate the difference in approach between the two local business associations, with Hackham focusing on involvement and Lonsdale on passive receipt of information. Lonsdale’s low score for ‘doing things with others to learn’ may relate to poor member experiences of ‘sit and listen’ learning, while the higher value placed by non-members on practical learning may be a result of the effort required to seek out learning opportunities themselves. One would expect that the cost/benefit for non-members would result in their targeting of learning experiences that delivered the best results. More detail on tacit learning is provided in the next section, which looks at the role of social capital-based tacit learning in influencing attitude and behaviour change.

Tacit learning and social capital

What then did the research reveal about social capital structures and tacit learning? From the coordinators’ perspective, only the Hackham Business Association said that they actively encouraged members to teach each other about better business practices; their approach was to create opportunities to ‘talk to each other and ask how to do things’. The researcher asked whether the associations specifically encouraged members to teach each other about environmental management. The Hackham Coordinator said that in coordinator-to-business interactions, Hackham actively encourages pro-environmental

practices: ‘yes, I’ve talked to people about waste management, it’s something that they can see the dollars making a difference’, the same applies to business-to-business interactions ‘I suggested they talk to each other to find out about different approaches’. Both are examples of tacit learning, but the encouragement of business-to-business learning reinforces the norm of learning from others that became very evident in the analysis of Hackham findings. In comparison, the Lonsdale Coordinator felt that the association implicitly valued environmentalism and that this message was communicated through information sessions about better environmental practices, but there was no attempt to create a culture that supported discussion outside these sessions or to contribute to shared learning about the environment.

The business interviews addressed shared learning through a set of questions related to usefulness of learning from other businesses, using scaled answers (1=not useful to 5=extremely useful) which were then compared for the three groups. The results show that there was very little difference between non-members (3.7) and Hackham members (3.6), but that Lonsdale members placed a lower average value on learning from other businesses (3.1), with one comment (‘I do OK on my own’) reflecting the independence that was becoming a trend in the findings from Lonsdale members. Comments from Hackham and non-members reflected their understanding of the underlying value in use of tacit methods for transfer of knowledge: ‘it’s about how their processes work, not what they do – but how they go about it’ (Hackham member) and ‘if someone else has experienced it that is the best way to learn, no business course will teach this’ (non-member).

The usefulness of specific learning affiliations was also explored and is summarised in *Table 5* with the number of unprompted responses shown against business size, with only the methods that gained a score of more than two shown.

Table 5: Usefulness of learning from specific businesses by business size

	<10	10-19	>19	Total
Type of business to learn from				
Same industry	10	2	1	13
Competitors	1		1	2
Different industries		1	1	2
Any	1			1
Any with similar experiences re issues	1			1
Same industry but longer in business	1			1
Similar businesses in the area	1			1
Similar size	1			1
Smaller businesses	1			1
Successful businesses		1		1
Usefulness rated at <2				6
TOTALS	**17**	**4**	**3**	**30**

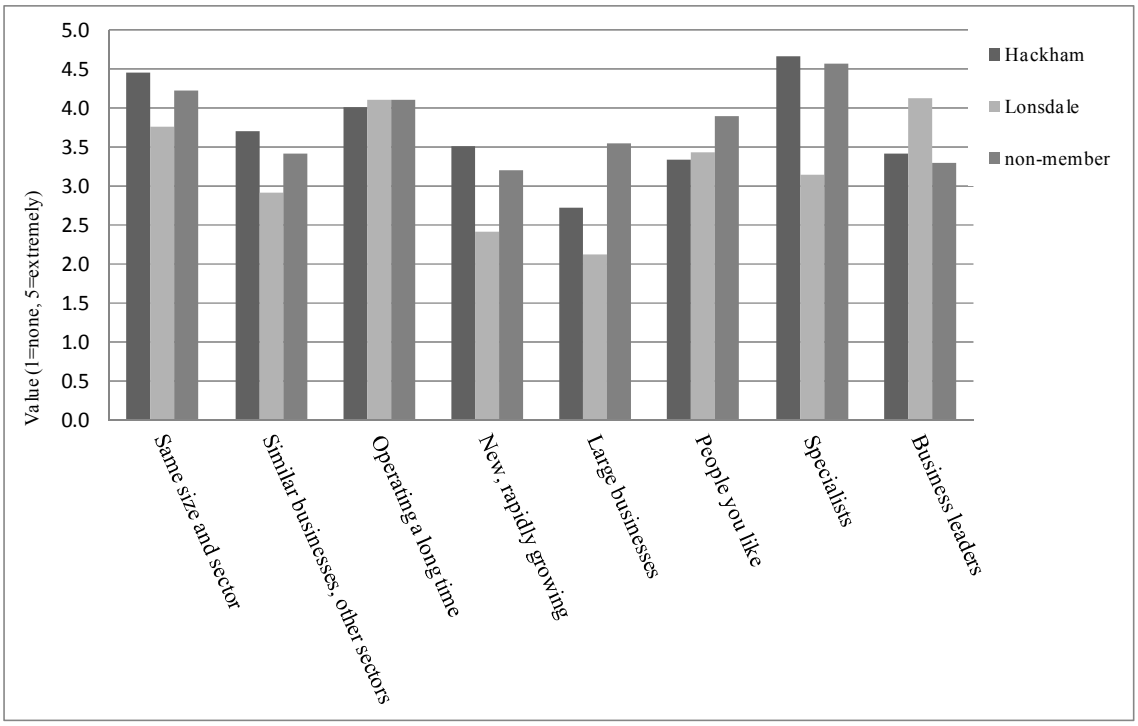
Source: Peters 2009/10 fieldwork

Twenty four of the 30 businesses rated 'learning from others' at greater than two (from a scale range of 1-5), and these respondents (who had reported at least moderate value in tacit learning) were asked to describe the type of business that provided the greatest usefulness of learning. By far the largest benefit (by 17 of the 24 businesses that answered this question) was gained when learning from businesses in the same industry (13 mentioned 'same industry' directly, but an additional four described businesses that would fit into the 'same industry' category, e.g. 'competitors', 'same industry but longer in business', 'similar businesses in the area'). This supports earlier findings that, where possible,

business owners seek information that is one step removed from their current level of understanding (Dewey, 1910: 84).

The topic of learning from other businesses was then asked another way, providing examples of specific sources of knowledge, *Figure 5* shows the combined findings of all respondents who had scored >2 to the earlier question about the value of learning from other businesses. The most popular sources of learning (averaging 4.2) were 'businesses that were similar size and sector' (where limited stretch was required to build on existing knowledge), 'businesses that had been operating for many years' (trustworthy, Tsai & Ghoshal, 1998) and 'specialists in the specific field of investigation' (stretch and trustworthiness). The lowest scores were for 'large businesses' (2.8) where the stretch from small business experience was too great; and 'new rapidly-growing businesses' (3.1) (not having the history of success that supports trustworthiness). From the responses illustrated in Figure 5 and Table 5, it appears that small business places the most value on relevance and experience.

Figure 5: Value of learning from specific business types

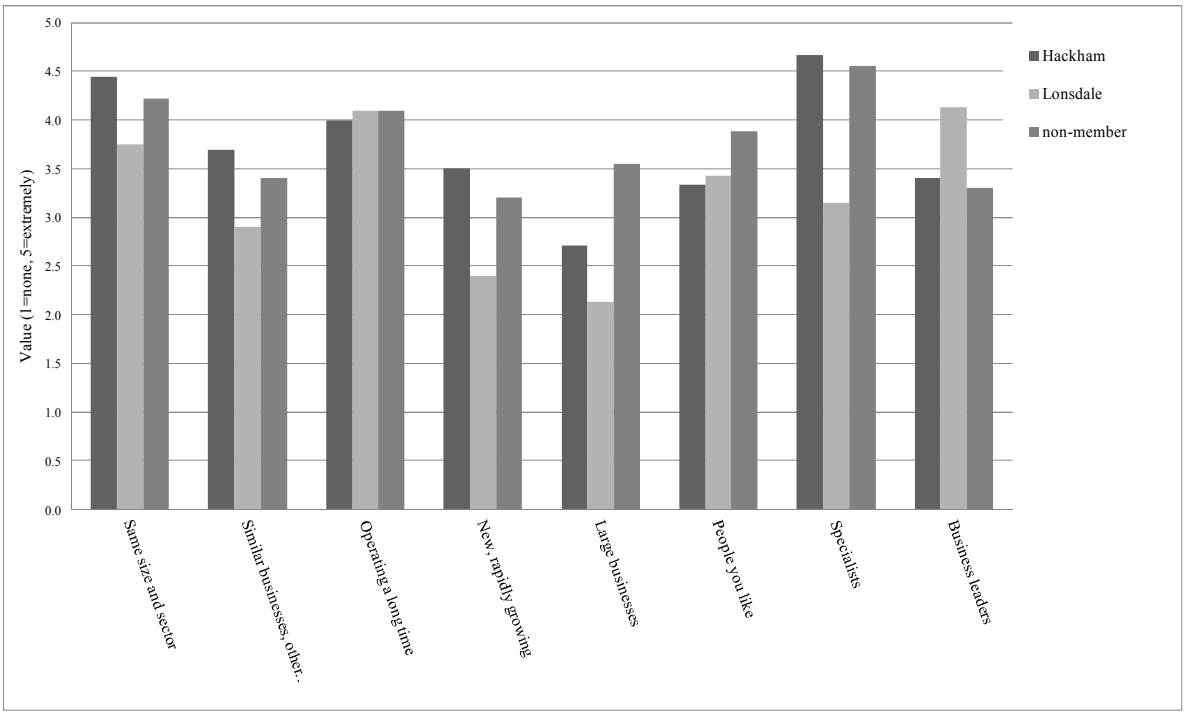


Source: Peters 2009/10 fieldwork

Figure 6 provides a comparison of the value of learning types by cohort. When considered against membership, these data show greater similarities between Hackham and non-members than between the two associations. A generally higher value was placed on all sources by non-members (average score for all types of learning was 3.8) and Hackham (3.7) and compared to Lonsdale (3.2). For both Hackham and non-members, the highest value was placed on learning from specialists (4.7 and 4.6 respectively), while Lonsdale gave a low score to specialists. It could be hypothesised that Hackham and non-members are receiving value from weak ties (to specialists), and Hackham is gaining further benefit from group interpretation of this knowledge; while non-members are simply needing to access the best information available in the shortest time. Lonsdale's poor response to this source is echoed elsewhere in the findings and

shows that the lack of group mediation of good information renders it of lower value.

Figure 6: Comparison value of learning from business types



Source: Peters 2009/10 fieldwork

The highest Lonsdale values were placed on long-standing businesses and business leaders (both 4.1), again indicating that the lack of group interpretation of received knowledge made source trustworthiness more important. For business leaders and businesses that had been operating a long time, their greater ability to interpret the information in a way that made it relevant to their audience would also account for the high score by Lonsdale who lacked a trusted network to help mediate this information. These findings reinforce that all three groups in the study sought information external to their group, illustrating the practical application of Granovetter's (1973) weak ties and Burt's (1992) structural holes.

The lowest value overall was placed on learning from large businesses (Hackham 2.7 and Lonsdale 2.1) and from new, rapidly growing businesses (non-members, 3.2) both situations where there was limited relevance to the small business experience. These data support Dewey's (1910) hypothesis that learning is a process of moving from the known to unknown in small increments with specialists and business leaders more likely to be able to tailor learning to their audience, but large and fast-growth businesses operating at too great a stretch from small business to be relevant.

From a social capital perspective, it was interesting that 'learning from people you like' scored approximately midway in value, which reinforces earlier findings that connectivity is not necessarily based on likeability, but on trust and usefulness and reflects Putnam's (2000: 411) observation that to build bridging social capital, individuals need to transcend their social and political and professional identities to connect with people unlike themselves.

Hackham comments indicate that the tight, stable nature of businesses in the precinct (there is limited space for expansion and the majority of the businesses have been there for many years), and the dominance of some sectors (automotive and fabrication) required businesses to look outside of their precinct to tap into new knowledge (Granovetter, 1973; Burt 1992). One Hackham business operating in a very small niche who scored 'new, rapidly growing businesses' at 5 explained 'New and rapidly growing businesses are usually more up to speed in technology, they have the potential to teach us and we would be mad not to listen and take note. Our industry is in the dark ages'. Hackham businesses recognised the value

of tapping into linkages between businesses, with one member reporting that 'I draw on specialists, one is due any minute, he goes to other businesses in the Southern area and I benefit from what he learns around the area'. Other comments by Hackham businesses indicate that members have a conscious approach to learning from others (Machlup's (1980: 181) painstaking searchers and alert watchers): 'sometimes they have funny ideas, the way that they do business is different – not bad just different' and 'I listen to everybody and then analyse it and put my spin on it'.

Lonsdale comments reflected their previously-observed caution about learning from businesses in the same size and sector 'if you learn from direct competitors, unless they are doing better than you then you may learn the wrong things' and 'I talk to customers who work in other sectors, and get information about how their businesses are going', indicating that they have not had the repeated experience of negotiating learning situation with others in their own sector. A similar situation was reflected in comments by Lonsdale members in relation to learning from rapidly growing businesses ('they are dangerous, they have great ideas, but do they have the checks and balances that make them a safe business, only one in five new businesses make it so they need to be treated with caution'), and about learning from large businesses ('they're not in the same world as us'), again showing that Lonsdale members have limited opportunity to use trusted others to interpret the information they are receiving. It is interesting that Lonsdale members gave low value to 'similar businesses in other sectors', 'new business' and 'large business' because their precinct is more diverse than Hackham and their neighbours are likely to be businesses in these categories. These findings

indicate that the two research questions about social capital and learning have recognised the problems facing Lonsdale, suggesting that stronger social capital structures are needed to create connection to learning resources.

Non-members reported gaining knowledge through their customers ('I do talk about these issues through customers who work in big business'), and valued learning from 'people you like' more than members of the two associations: ('normally I only speak with people who have been friends for many years' and 'I listen to what everyone says and try to pick the bullshit from the truth'). These reasons are similar to those provided by Lonsdale members: lack of experience in negotiating tacit learning from peers, and poor connectivity to other businesses. The isolation of non-member businesses and the narrow pool of expertise provided by friends and specialists (who focus on their own area of speciality) may trigger greater effort to seek out learning from larger businesses.

The questions specifically relating to tacit learning showed quite different attitudes from the three groups, and contributed to the growing body of research evidence about social capital influences on learning. The Hackham Business Association purposely and overtly encourages learning from other businesses.

> *The Committee have all been in business a long time, they look at what each other are doing, and go out of the area and find out other ways of doing it. We seed topics with the members, otherwise they wouldn't even think about it, and if there's a leader who can say 'you should be doing it this way', then we support that idea. For example, XXX's business is very successful, and he spends a lot of time going round to the newer businesses and talking about the way other*

> *businesses do things. People might not listen at first, but they respect him, and we all talk about how good it is and eventually they get the message. (Hackham Coordinator)*

This quotation shows that Hackham leaders understand and model the value of tacit learning, and that there is a clear expectation that group norms for business practices are actively implemented and clearly articulated. As a result, Hackham members accept learning from other precinct businesses as a normal and natural way of doing business and their comments reveal that they consciously reflect on the ways in which they learn. In a number of factors (usefulness of learning from other businesses, learning from businesses of the same size and sector, learning from similar businesses in other sectors, learning from new rapidly-growing businesses, learning from large businesses, and learning from specialists) Hackham and non-member businesses provided similar (and higher) ratings than Lonsdale, whose coordinator reported a focus on information dissemination rather than facilitating learning, and whose members' comments suggested negative learning experiences despite a larger and more diverse pool of businesses from which to learn. By only providing information, the Lonsdale Business Association had decoupled its members from tacit learning, illustrated by their high score for 'learning from business leaders', and reflecting the 'sit and listen' methods supported by their association where business leaders are regularly engaged as speakers.

This set of questions showed the non-members in an interesting light, particularly in their high value of tacit learning despite the lack of connecting agency to drive

and support this. Their very high rating of 'learning from specialists' suggests a lack of peer input, and their proportionally high rating of 'learning from big business' reveals a different set of connections and the need for different methods of learning than businesses which receive this information through the agency of a local business association.

Influence and behaviour change

Within the broader social capital context, this research aimed to identify the role of group influence on behaviour change, specifically looking at environmental practices in small business. The research sought to establish whether local business associations that had a stated intention to change the behaviour of their members realised this intention and the mechanisms that were successful in creating behaviour change. In this way, the research was exploring both stated and hidden aspects of the organisational culture by the local business associations. The early screening interviews identified different approaches by the Lonsdale and Hackham Business Associations and it was expected that these differences would also generate different outcomes for their members. Where possible the findings from the two associations were compared with the experience and reported environmental standards of non-member businesses.

The interviews with the coordinators revealed their personal beliefs about the main influences on member behaviour, with Lonsdale suggesting that cost was the main influence, and Hackham suggesting visits to other businesses as the strongest influence:

> *Seeing other practices that aren't right, and saying to themselves 'we don't do it that way' or seeing something you do but in a different light and saying 'that's not right'. What really works well are visits to other businesses in the same sector and looking at how they do things, they pick up a lot of additional knowledge, sometimes unconsciously. (Hackham Coordinator)*

The difference in attitudes of the two Coordinators reinforces the individual/group dichotomy that was already becoming evident. The question of cost and benefit was reframed in the context of environmental practices ('Do you think that members feel that environmental management is a cost or a benefit to their business?') and both coordinators thought their members would consider it a cost, with Lonsdale explaining that the environment is largely a 'bottom line' decision, but the Hackham Coordinator displaying double loop conceptualisation of the issue of environmental cost to business:

> *It's because they have to budget for it. They see the benefit to the environment, but they wouldn't see it as a benefit to their business. As a benefit to their business, they only think 'Oh, we got rid of it' but <u>where</u> they got rid of it is how it's good or bad for the environment. (Hackham Coordinator)*

Members were asked whether their association valued good environmental practices by its members. Nine (of the ten) Hackham businesses and seven Lonsdale businesses answered in the affirmative. Comments by members (*Table 6*) indicate that Hackham takes an active role in advocating for the environment (setting expectations, advocacy, setting up recycling facility, and actively seeding environmental topics at meetings), whereas Lonsdale's approach appears to be

more passive (wanting to make a difference).

Table 6: Comments regarding the value placed by the association on the environment

(n=number of mentions)

	Hackham	Lonsdale	Total
I'd expect them to!	2		2
Not all members understand the need	1		1
Pushing the environment gives them standing in the community		1	1
The association is an advocate for the environment	3	1	4
The association passes on information		1	1
The association set up a 'reusables' centre	2		2
The association wants to make a difference		2	2
The association ensures the neighbourhood is well looked after	2		2
We talk about the environment at association meetings	2	1	3

Source: Peters 2009/10 fieldwork

The interviews investigated the locus of member attitudes toward environmentalism, so businesses were asked 'Is it up to the individual business, or is there a general view within the association about what makes good environmental behaviour?'. Both coordinators felt that their association valued good environmental practices amongst members, but neither association thought they promoted a cohesive view about what constitutes good environmental management, in both cases this was left up to individual businesses. However, both associations reported a good level of member interest in the environment. The Lonsdale Coordinator reported that whenever the association 'has had

anything to do with the environment, we get quite a bit of interest from members, more than for general topics'. Hackham's Coordinator commented:

> *It is top of mind with the Committee because they are long term business people. They've been in business a while and have chemicals and wastes that need specific treatment. The leadership comes from people who are environmentally aware, and who implement environmental programs. (Hackham Coordinator)*

From the member perspective, two Lonsdale members felt it was up to the association to establish a view as to what constitutes good environmental management (group norms) and two felt it was up to the individual (individual values), but the main finding was that six could not answer this question. On the other hand, the Hackham responses were insightful, two members said the association set the culture 'everyone upholds the view about the environment', five said individuals set their own standards, two felt it was up to both the individual and the association 'but the presence of the business association in the background influences you' and only one could not answer this question. The comparatively large proportion of Hackham members who felt that they set their own environmental standards is particularly interesting, as it suggests that association attitudes have been internalised to such a degree that the accepted pro-environmental culture is owned and unquestioned by members.

The research considered the influence of membership on environmental attitudes from a different perspective, asking the two member groups whether they felt that businesses that are not members of a local business association view environmentalism any differently. Neither coordinator thought that non-member

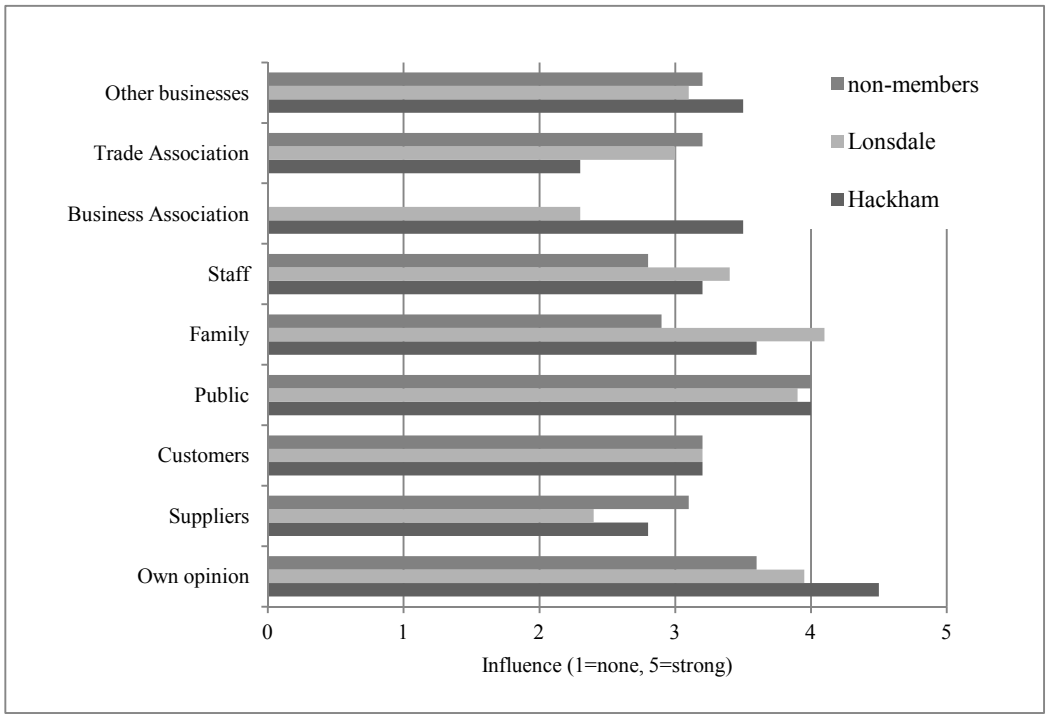
businesses would have a markedly different view of the environment, but this came from different perspectives, with the Hackham Coordinator commenting that proximity to member businesses would influence non-member behaviour 'because in this area, non-members are adjacent to members and they learn from them' (proximal influence) and the Lonsdale Coordinator commenting that non-members also received invitations and could attend association information sessions. However, when this question was posed to members of the two associations, four Hackham and three Lonsdale businesses felt that non-members would view environmentalism differently because they were not subject to peer pressure and shared values – Hackham businesses commented on poor standards in non-member businesses: 'other businesses who are not members don't keep their premises very tidy, they are disgusting and a health hazard'; 'You see things that go on in non-member businesses, they just don't care, Hackham members are more cautious regarding the environment. We don't want polluters in the area, and we work together to help stop things that shouldn't happen.'; 'there is more pressure on us to be more environmentally aware than those businesses that are not members' and 'being part of an association makes you go down the right path, there is peer pressure.' Clearly the interventions of Hackham leaders, their overt promotion of environmentalism and active sanctions for non-compliance have had a noticeable effect on the attitudes and practice of Hackham businesses. A further comment by the Hackham Coordinator provides insight into why businesses in the Hackham precinct that are not members of the association might have better-than-average environmental practices:

> *There is less respect for businesses with poor environmental practices. There was a guy at the end of the street who had an untidy block and others commented and said 'something should be done about it'. One of our committee members went round and saw him and they cleaned it up. (Hackham Coordinator)*

The level of interest and reported adoption of environmentalism by Lonsdale members was significantly lower, and few provided comment to this question, although the issue of member ethics was noted by one respondent 'there's a few that wouldn't give a toss, but if you're a member of an association you have ethics, and try to do the right thing'.

Group influence was tested with all business respondents through a separate set of questions that asked businesses to rate (on a scale of 1=none to 5=strong) the influence of a range of agents. The findings are summarised in *Figure 7*, which shows environmental influences on business by cohort (noting that non-members were not asked about membership of a business association).

Figure 7: Influence on environmental practices in respondent businesses



Source: Peters 2009/10 fieldwork

Overall, the strongest influences were 'my own opinion about the environment' and 'public opinion about my business' (both averaged 4.0 out of 5); and the weakest influences were 'suppliers' expectations about environmental practices' and 'other industry or trade associations' (both 2.8), quite a different result than that obtained by Roy & Thérin (2007: 256), whose research with Canadian SMEs found that environmental knowledge is more likely to be gained from trade associations, suppliers and public agencies than from normal sources of business information.

When analysed by group, the greatest single influence was Hackham members' own opinion (4.5):

> *For example, we bought a machine to extract and recycle the gas in fridge bodies. It pumps it out so that it isn't released into the environment. We weren't required to do this (there's nothing in the law that makes us do it), but we feel it's 'doing our share', it was a cost to us, but it's the right thing to do. (Hackham member)*

As might be expected from the previous analysis, the influence of business associations was rated quite low (average 2.9 for both Lonsdale and Hackham), which is thought to reflect the internalisation of belief by Hackham and the lack of overt attention to environmentalism by Lonsdale. Lonsdale's highest influence was 'family' (4.1) 'the grandkids do a bit of nagging'; and the highest value for non-members was 'public' (4.0) 'This is very important, I like public opinion!'. The lowest influences were reported as 'other trade/industry associations' (Hackham, 2.3) 'the Business Enterprise Centre just have guest speakers that aren't very relevant (e.g. politicians), it's wishy-washy'; for Lonsdale the lowest influence was 'Local Business Association' (2.3) 'they keep me up to date, and it has some effect'; and for non-members it was 'staff' (2.8).

Half of the Hackham members said that their attitude to environmentalism had changed as a result of their membership of the Hackham Business Association (for example 'we've learned more, met more people in the area, local is important'), but only two of the ten Lonsdale respondents said that the Lonsdale Business Association had influenced their environmental attitude, with one commenting:

> *It has had a greater influence over other things like general media awareness of environmentalism. We buy old stock for people who are re-doing old houses and source that sort of stuff for people, we are an exception in the building industry. (Lonsdale member)*

Still in relation to influences (and referencing the list provided in the preceding question), respondents were asked which influence was strongest. The findings in *Table 7* show that 'my own opinion' was by far the strongest single environmental influence (mentioned by ten respondents), with customers, family and public opinion rating second-strongest (by five respondents each), reflecting Lozano's (2006: 227) finding that founding director values are the strongest influence on SME environmental action (also Quinn, 1997; Spence & Rutherfoord, 2003; Spence et al., 2003; and Trevino, 1986).

Table 7: Greatest influence on environmental practice

(n=number of mentions)

	Hackham	Lonsdale	non-member	Total
Customers	1	1	3	5
Family	2	3		5
Industry/Trade Assoc			1	1
Own opinion	4	4	2	10
Other businesses	1	1		2
Public	1	1	3	5
Staff	1			1
EPA*		1		1
TOTAL	10	10	10	30

* (Environmental Protection Agency) suggested by respondent

Source: Peters 2009/10 fieldwork

All businesses were asked whether they thought their attitude toward environmentalism had changed with the increasing attention to climate change and the recent severe drought. Seven Hackham and non-member businesses and eight Lonsdale businesses said that this was the case (suggesting that community attitudes were more influential than the Lonsdale Business Association), with Lonsdale members commenting: 'our attention to the environment has always been good but it got stronger with media attention to issues, we're even more aware'; 'it's hard to avoid it, it's everywhere'; and 'Public knowledge, the press makes you more aware – it's effective. It hasn't changed anything we do, but it keeps reminding us.' This final comment reinforces Eagly & Kulesa (1997: 144) observation that 'one of the paradoxes of the psychology of environmentalism is

that citizens generally hold pro-preservation attitudes but routinely engage in environmentally unfriendly actions'. However the Lonsdale Coordinator noted:

> *We have seen the difference in attendance as public and media attention grew, seminar nights have had quite a good attendance, which shows there's interest in the topic. Our association isn't social, and it's a struggle to get members along to events, so their attendance shows that it's an area of interest. Having good numbers turn up to an environmental presentation is a good sign that they're interested in this topic. (Lonsdale Coordinator)*

Hackham members' comments incorporated issues of knowledge, ('as issues come into the public arena, knowledge is more available'), attitude ('I have always been the same, we should look after our resources and not waste them'), regulation ('water use is now different, we had to apply for a licence to wash cars') and general awareness ('it's now a general news item, so you hear about it more often'). Interestingly, the Hackham Coordinator felt that the changed public attention had little effect on business practice:

> *No, I don't think it would be in their mind, drought has nothing to do with their businesses, or that anything they do has anything to do with climate change. For them, the environment is protecting what's there, rather than being relevant to anything they do. (Hackham Coordinator)*

but this comment also presupposes an underlying environmentalism in the precinct.

Non-members were influenced by public and customer attitudes, but their comments revealed a number of different responses, ranging from increased awareness ('I have become more aware' and 'it has helped to improve our work ethics') to customer demand ('ten years ago the environment was never even thought of, now people are asking where it comes from, is it grown from a sustainable source. In the last two years these type of queries have increased by 80 per cent') and avoidance ('my impact is minimal, I don't make products that pollute').

Businesses that were members of other associations were asked whether these organisations influenced their environmental behaviour. Of the other memberships[3], only the Motor Trades Association (six businesses were members) had any influence (stated by two):

> *They [Motor Trades Association] give lots of information about our legal obligations, there are regular meetings, and we can use case studies from other businesses so we don't make the same mistakes. We get introductions to people in the same industry and we can learn from them. When someone tells you that they've done something (e.g. electrical testing and tagging), you think "oh shit", then we send people to training to learn more about it. (Lonsdale member)*

[3] ClubsSA, RAA, SGIC Approved, Capricorn Approved, Recyclers Association of SA, Australian Hardware Industry Association, Australian Industry Group, Business SA, Australian Steel Association, SA Chamber of Mines and Energy, Locksmiths Association, National Institute of Accountants, Repco Authorised Service, Institute of Automotive and Mechanical Engineers, Print Industry Association, Southern Success Business Enterprise Centre, Australian Mechanical Contract Association, Motor Industry Association, Master Builders Association and Housing Industry Association of SA

This comment shows that for some Lonsdale members, non-proximal associations (communities of interest) provide better social capital resources than their local business association.

Conclusion

In conclusion, the findings relating to the influence of associations on member environmental behaviour indicate that media attention and public opinion alone do not necessary trigger behaviour change, but when a raised level of awareness is combined with normative pressures and active intervention, associations provide a catalyst for action. While this influence can be overt (such as the example of the Committee member visiting a recalcitrant business' premises), the findings show that it is the more subtle process of shared attitudes and experience that helps to form individual opinions, reinforcing the value of purposely creating regular socio-learning situations (of developing relational strength that provides a solid grounding for both social and learning situations, after Upadhyayula & Kumar, 2004), of being clear in the norms and values of the organisation, of sanctioning unacceptable behaviour, and developing trust between members. This research has reinforced Svendsen & Svendsen's (2004: 28) view that social capital is built up in small groups where 'face-to-face interaction generates common social norms and creates predictable behavioural patterns' and that in small groups, the process of development of culture and behavioural rules is achieved through repetition, tradition and example (Wenger et al.'s 'rhythm of engagement'; 2002, in Amin & Cohendet, 2004: 116).

Interestingly, the values of each local business association were known by potential members before joining (Lonsdale valued information, and Hackham valued connectivity and learning) which contributed to the continuation of those values as membership changed over time, reinforcing Nooteboom's (2007: 32) definition of social capital as ‘contributing to goal achievement of actors on the basis of relationships’. Small businesses, who are largely driven by the interests of their owners, need to see immediate relevance from their involvement, and groups need to be constantly reappraising their offering to ensure they are providing value to members.

The longevity of active membership in the Hackham Business Association suggests that the process of individual development pursued by the organisation's leadership accurately supports the iterative process of driving toward stated organisation goals at the same time as listening for and adjusting activities to suit the specific needs of the current cohort of members. Thus Hackham provided an exemplar for Grix's (2004: 48-49) ‘structure and agency problem’, where the social context guides, determines, constrains or facilitates individual actions; and individuals in turn form and shape the social context and institutions around them, and reinforced Bourdieu's (1986: 249) belief that a network of connections is not constituted in one action, rather it is the product of an endless effort at institution.

The findings described in this chapter have demonstrated that social capital does have an important role in creating and reinforcing norms of behaviour (Research Question 2), evidenced by the strong connection between the level of social capital in Hackham and the correspondingly strong alignment of individual and

group values. The physical size of the two associations correlate with the expected levels of social capital, with the larger precinct (Lonsdale) having weak social capital in comparison with the smaller Hackham precinct where members have frequent informal contact in the course of their daily activities.

Both local business associations provided sufficient evidence of the investment of member time to refute Semlinger's (1995: 23-24) assertion that business networks are not necessarily suited to small firms because small firms are less well organised in developing voluntary associations, and lack the time and resources to spare personnel to work on committees. The findings also answered Pretty & Ward's (2001: 212) question about whether social capital-rich groups are less likely to proceed to maturity due to the inhibiting effect of social capital, in that even though Hackham had very close ties and mainly looked inward, the leadership was focused on higher level aims (Ward's third stage of group formation, 2001: 218) and there was no evidence that social capital had an inhibiting effect.

Chapter 6 will investigate the mechanism of learning through shared experience in more detail, in particular how learning that is embedded within social capital structures contributes to the acquisition of new knowledge and to the process of attitude and behaviour change.

CHAPTER 6: Knowledge Findings and Discussion

Introduction

Previous chapters have established the role of social capital in setting group norms and providing access to knowledge. This chapter considers how knowledge creates the trigger to move from environmental inaction to action through exploration of the field research findings into knowledge transfer processes within the three research groups (Hackham Business Association, Lonsdale Business Association and the non-member businesses), answering Research Question 1 (how learning from trusted others influences attitudes and behaviour) and Research Question 3 (how learning and social capital have influenced the adoption of pro-environmental behaviour).

Chapter 5 explored the social capital field research findings based on the premise that connectivity and norms help to form belief, and shared experience contributes to a process of gaining practical knowledge. This chapter describes and discusses the findings of the field research from a knowledge transfer perspective using a number of perspectives (valuing learning, tacit learning, knowledge and environmental behaviour) to examine the attitude to and experience of learning, as well as the process of conversion of knowledge to action.

Valuing learning

To provide context for examination of direct influences on learning, the research sought to discover whether a culture of learning influenced an expectation of learning and individual learning experiences, focusing largely on the attitudes and activities of the two local business associations. From the coordinators' perspective, both Hackham and Lonsdale Coordinators felt that their associations valued learning amongst their members, and that both associations provide knowledge sharing sessions for members. The nature of the knowledge sharing was different for each association; Lonsdale provided specific courses and sessions, such as occupational safety and welfare, first aid, mental health in the workplace, global warming, blood awareness, and fork lift training. The Hackham Business Association also organised and participated in these types of training activities (some training was organised jointly between the two associations), however their Coordinator's description of the association's approach to learning was quite different:

> *We try to provide a conduit to other services, for example the Business Enterprise Centre and the Health Village. It's more important that businesses can find out how to get information themselves, rather than us spoon feeding them. (Hackham Coordinator)*

Thus Hackham demonstrated a desire to assist businesses to source their own knowledge (an enabling approach), rather than simply coordinating access to training, which was the primary approach taken by Lonsdale.

At its most extreme Hackham's approach could have the effect of creating dependence on the association so that members were less able to source learning experiences of their own volition, but this was not the case, as both coordinator and members commented on Hackham's role in connecting businesses to each other to access knowledge.

On the other hand, Lonsdale's focus on information provision stopped short of providing connectivity, illustrated by on member: ‘Lonsdale sent us a strategic plan to fill out but I needed help getting that done from a consultant, so I had to employ them myself to get it done’. This experience suggests a difference in the way the two groups guide businesses to access new knowledge. In this situation it is likely that the Hackham Business Association would have provided both the plan and a link to a person to help develop it, whereas the Lonsdale Association has simply sent the plan and left the business to work their way through the details.

The ‘service’ provided by Lonsdale was likely to be the attribute that was valued by members, while the Hackham approach probably led to some businesses resenting the lack of support provided by the association in that answers were not always provided, rather businesses were encouraged to seek out others who held that knowledge. However this approach had the generally beneficial outcome of forcing all businesses to learn how to access information. In this way, Hackham consciously promoted two types of learning (seeking knowledge and acquiring knowledge) and this approach would be expected to create a better awareness and

learning ability among its members. This premise was then tested with member businesses.

All of the Hackham members interviewed for the research felt that the Hackham Business Association valued learning amongst its members, compared to only eight of the ten Lonsdale members (the other two from Lonsdale did not know whether learning was valued by their association). *Table 8* shows a summary of comments made by members of each of the associations, which reinforces that Lonsdale focused primarily on information ('run training courses' and 'provide information to members').

Table 8: Members' perception of how local business associations value learning

Comment	Hackham	Lonsdale
Run training courses	2	2
Provide info to members	2	5
Help each other learn	2	
Drive for learning	3	
Relevant guest speakers	1	
Diverse industries and experience	1	
Regional economic sustainability		1
TOTAL (n^o topics not restricted)	11	8

Source: Peters 2009/10 fieldwork

Hackham did provide information, but it placed an additional (or perhaps deeper) value on learning, represented by responses such as 'help each other learn' and 'drive for learning'. The latter response received the highest number of mentions overall, with neither of these comments being mentioned by Lonsdale members.

Hackham's response supports Dewey's (1910) assertion that discovery of the new goes from the known to the unknown, and demonstrates that Hackham leaders have made this process understood and valued by the members.

The transcript of comments relating to this question is insightful, with Hackham members speaking about the need to actively create value out of learning 'we've all learned through trial and error and share this knowledge by networking, we've learned a lot over the years' and 'you do bounce things off the members'. Respondents also noted how the association embedded learning in social activity:

> *They always have guest speakers and at least one is relevant to running your business and if you think the speakers are going to be relevant they always turn out to be. There has been only one dinner where I have been disappointed. It was only the presenter, not the content that was disappointing. (Hackham Member)*

Responses by Lonsdale members emphasised the role of the association in disseminating information and arranging training courses. However the ethos of shared learning mentioned by Hackham members was missing: 'they contact us if there's anything happening, and we get phone calls and information about seminars etc.' and 'they are always sending out emails on different projects and courses, keeps you up to date on government incentives and how to attain them, it's very informative'. Only one Lonsdale member felt that the association valued learning: 'Do members value learning? Some very much, but the ones that need it are the ones that are ignorant of the fact that they need it'. This comment indicates that the Lonsdale Association does not intervene with businesses that need knowledge but do not make an effort to gain it as does Hackham. A previous

comment, described in the *Social Capital Findings and Discussion* chapter (when a committee member visited a business that had an untidy yard) illustrates the difference in the way that the two associations act in the face of recalcitrance, supporting Hopper & Nielsen (1991: 215) that recycling is only adopted as a personal norm when community norms are associated with a high awareness of social consequences.

These findings reinforce earlier results from this research that while both associations value learning, Hackham has grounded their expectations in shared values and group norms that are embedded in their social capital structures and reinforced through practical, shared learning experiences. Of particular interest is the way that Hackham has created learning experiences within a social framework, through the use of network dinners where speakers present information and members are encouraged to discuss what they have learned with others at their table. This method addresses small business isolation, recognises that small business owners are often unsophisticated and cautious about revealing their lack of knowledge, and guides peer-to-peer learning without creating unnecessary structures that could slow or impede the learning process. In this way, Hackham supports its members to engage in deep learning, paying attention to underlying meaning (Warburton, 2003: 45), rather than simply receiving information. Deep learning is internally motivated and is associated with an intention to understand (Marton & Saljo, 1997), is essential to multi-disciplinary issues such as environmentalism, and is dependent on the learner's level of engagement with the topic (Ramsden, 1997, in Warburton, 2003: 45).

Importantly, Hackham has recognised that learning does not occur simply by instructing members to learn (after Marton & Saljo, 1997), but that learning must be interest-led, with varying content and delivery styles. Time needs to be allowed to explore complexity and to critically examine underlying assumptions (double loop learning). The process used by Hackham is grounded in tacit learning principles, allowing the transfer of knowledge that is stored in the mind rather than codified, requiring a direct connection between the knower and learner.

Tacit learning

One of the core hypotheses of this thesis (grounded in social capital and tacit learning theory) is that learning with others will produce enhanced learning in comparison to learning on one's own. Maturana & Varela (1980, in Weirdsma, 2002: 232) describe a pattern of interaction (structural coupling) that develops when people work together, requiring actions within a framework of implicit and explicit rules which in turn creates conditions for continuous collective learning. The field research in relation to tacit learning was mainly undertaken with members of the two associations to explore the way groups influence member behaviour. This hypothesis was explored in a series of questions about the business owner's individual learning style and its relation to the learning focus of the associations.

The initial interviews with coordinators asked whether their associations provided information or knowledge-sharing sessions to help members learn better business practices. Both coordinators said that their associations provided these opportunities and both offered examples of training courses. In the member

interviews, a question was included about the nature of information or knowledge-sharing sessions provided by the associations. *Table 9* provides a summary of members' categorisations of knowledge sharing sessions organised by their local business association.

Table 9: Members' categorisation of knowledge sharing sessions

Comment	Hackham	Lonsdale
Different industries attend meetings	1	
Guest speakers	4	
Training	2	6
Disseminate information		2
Purpose of meetings to share info	5	
Can ring for information	1	
TOTAL (n° topics not restricted)	13	8

Source: Peters 2009/10 fieldwork

Lonsdale responses only reflected training and dissemination of information:

> *Every association has its own flavour. Lonsdale supplies the relative information for its members and what information we need at the time. The push at the moment is infrastructure information for Southern Adelaide. (Lonsdale member)*

This comment illustrates the South Australian Government's use of voluntary groups in the dissemination of information, as the topic mentioned here relates to the State Government goal of local suppliers for large infrastructure projects. In reality, the government action on this goal is only information provision, and small businesses are disadvantaged by the conditions of tendering. In this case,

government agencies have 'ticked the box' on their obligations without any real expectation of changed practice.

Hackham members commented on training and information dissemination, but half of the Hackham respondents also commented on the information sharing *values* of the association, specifically stating that the purpose of meetings is to share information: ‘dinner meetings are where we share information, all meetings are open, we have speakers and share information, it’s part of our normal meeting process’.

The associations’ support of tacit learning was explored through a specific question about practical experience, which is a simple way of illustrating tacit learning process (‘Does your association help to create practical experiences for members, for example site visits, practical workshops, joint projects?’). Six Hackham members and eight Lonsdale members said that their associations created practical experiences. There was a qualitative difference in the nature of 'practical experience' provided by the two associations. Hackham members spoke about their association’s responsiveness to requests for specific learning: ‘because we are a small company we can’t have outside agencies teach our workers so we can suggest via the business association what we would like to have, for example the finance course that they had was very simple, for beginners – it’s just what we needed’ and an ethos of shared activities, such as: ‘we're all good neighbours, we help out and get involved, others back you up and help, and work as a group, there's real merit in joint activities’. On the other hand, Lonsdale members mainly spoke about on-site (or locally held) first aid and forklift training courses,

although one person mentioned a trip to a car manufacturing plant that had been organised by a member. However there was no commentary by Lonsdale members on the shared element of the question, which reflects the difference between parallel (Lonsdale) and shared (Hackham) activity.

In order to tease out a range of influences, tacit learning was approached from different perspectives, with all respondents (not just those from the associations) asked whether they had worked with other businesses on joint projects, activities and tenders. Neither association implemented an active strategy of encouraging members to take part in joint ventures, although both coordinators spoke of organising joint visits to a local recycling centre and the Hackham Coordinator spoke of wanting to do more than this, but found it difficult to get people motivated:

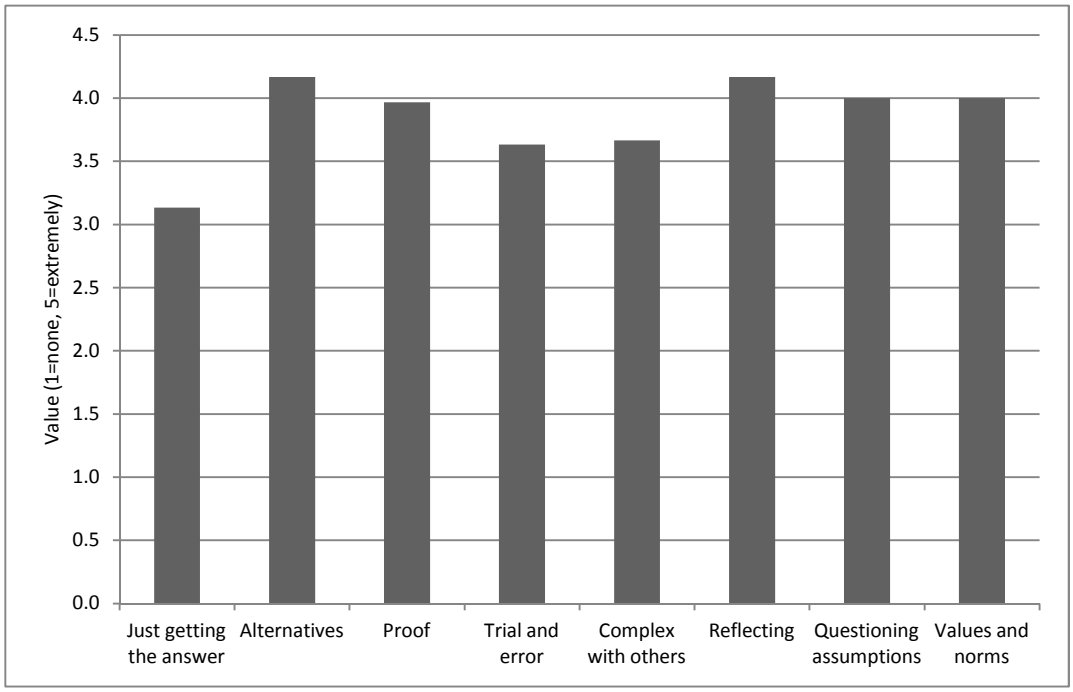
> *It would be very beneficial if you could convince them to do it, but if they see it as organised, they don't think it's as effective. If you try and organise anything too structured, say you tell them 'I'm going to ask you to go over to X's shed and see what he does', they'd just say 'I don't give a shit what he does, and I don't have the time' and you can't rely on having a trusted person there to get it happening, so casual visits work better. (Hackham Coordinator)*

From the business perspective, the findings revealed an inverse relationship to social capital, with only two Hackham businesses having worked on joint projects whereas six Lonsdale businesses had worked on joint projects, (mainly joint tendering, although there was one example of two businesses sharing an apprentice); and the highest level of joint projects being reported was by seven

non-members (mainly in the construction industry where a range of skills are provided by different businesses, but also helping out other businesses in the automotive sector). Respondents who had been involved in joint ventures were asked whether this was a good way of gaining new ideas – but only one business had used the joint venture in this way, the others (almost all relating to the construction industry) said that this was simply how they did business. It could be hypothesised that the social and learning opportunities afforded by joint projects overcomes some of the isolation of small businesses that operate within weak social capital networks, thus reducing the need to seek out other businesses for tacit learning activity. However, the reason for the relatively low level of interest in working in partnership with other businesses could also result from the lack of direct connection between the 'knower' and the 'learner' to facilitate the transfer of tacit knowledge (Ichigo, Krogh & Nonaka, 1998).

The value of shared experience to assist learning was further tested in a question to all respondents (including non-members) that presented options and asked respondents to provide a scaled response to the question 'How important are the following for you in learning new concepts?'. *Figure 8* summarises the findings, showing that the highest value was placed on the double loop concepts of 'clearly understood alternatives and consequences' and 'reflecting on what has been learned' (both averaged 4.2) and the lowest value was placed on the single loop approach of 'just getting the answer' (3.1).

Figure 8: Value of learning types

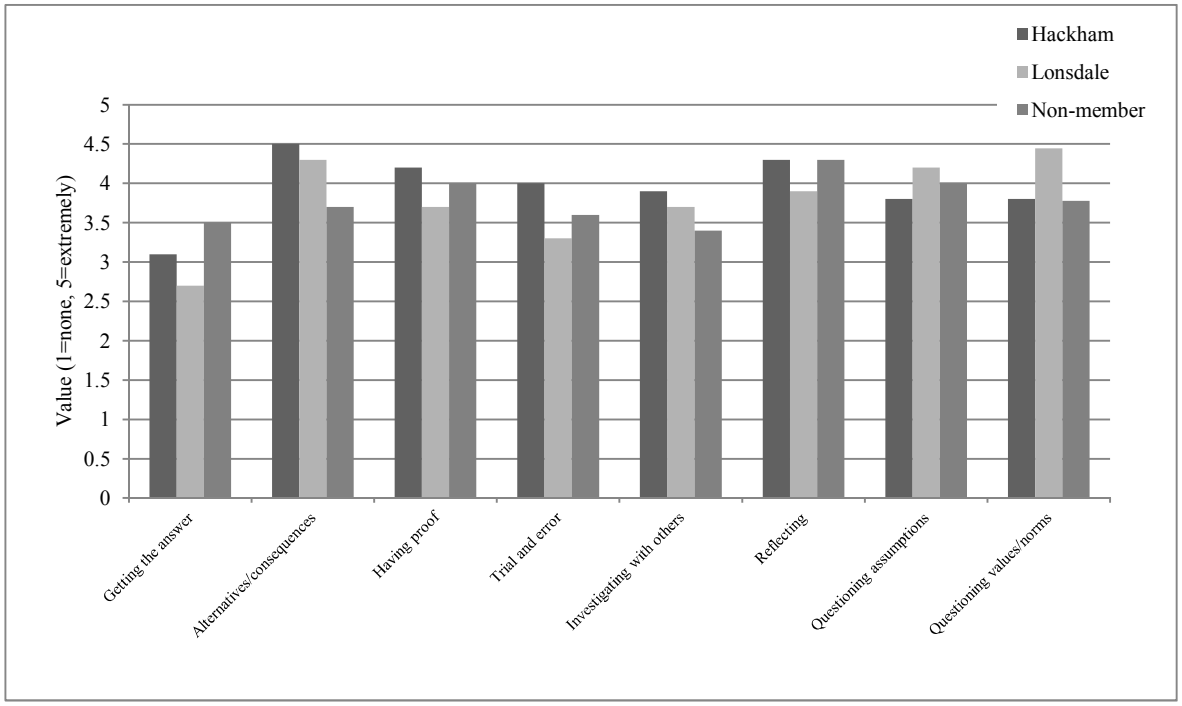


Source: Peters 2009/10 fieldwork

Perhaps the most interesting feature of *Figure 8* is that there is relatively little variation between preferences for different learning experiences apart from the markedly lower score for 'just getting the answer', and that respondents placed a high value on questioning assumptions and the triple loop approach of questioning values and norms.

Figure 9 shows the same data analysed against cohort, revealing no great difference between the three groups and a very similar pattern of responses (Hackham and non-members scoring approximately equally but higher than Lonsdale) for 'just getting the answer', 'having proof', 'trial and error', and 'reflecting on what has been learned'.

Figure 9: Learning new concepts



Source: Peters 2009/10 fieldwork

The three learning styles that provided greatest variation between cohorts were 'just getting the answer' which was less valued by the two associations (and received the lowest overall score by Lonsdale members); 'understanding alternatives and consequences' (the highest overall score by Hackham, and a comparatively low score by non-members); and 'questioning values and norms' which produced a high score by Lonsdale.

Respondent comments provide further insight into the rationale for their scores, with businesses from all three cohorts giving similar comments ('you need to know how you got there') to account for their low scores for 'just getting the answer'. Higher scores were given for 'clearly understood consequences and alternatives' with respondents reinforcing the importance of knowing

consequences. The comments that supported 'needing proof' related to avoidance of time wasting and needing confidence in the answer (‘if there were no proof, I wouldn’t accept the answer’).

The largest number of comments were provided for ‘trial and error’, with Hackham respondents most prolific in their comments: ‘we use this in-house to test our own ideas and processes’; ‘that’s ALL it is, trial and error’; ‘it’s good to a certain point, but you have to do your homework and research before you decide whether you're going to take the risk’; and ‘it’s OK to learn from others’ trial and error, but not to do it yourself!’. Similar comments were provided by Lonsdale and non-members, with non-members emphasising the cost disadvantages of trial and error: ‘we do do that, it’s a good way but it can be costly’.

Non-members provided the bulk of comment on the option ‘investigating complex questions with others’, revealing very different perspectives on this approach (‘I try to avoid doing this, it is less important to me’ and ‘it is important, like talking shit at the pub, to listen to what people have to say’) which may account for the comparatively low score (recognising also the very small sample size and the difference one answer can make), although one comment showed that the respondent was a resource in their own right: ‘people ask me questions, if don’t know the answer I will get back to them with the right answer’.

The high score for ‘reflecting on what has been learned’ was reinforced by the comments, such as: ‘you can see something that you think is right but looking at it you realise it isn’t, so you adjust it to suit, work on an old concept to form a new idea’. Similarly, most comments in response to the ‘questioning the assumptions

about why something works' option related to wanting to know reasons, for example 'you shouldn't accept that it just worked, need to work out why the hell it worked out so good', although one person (who also gave this option a high score) said that questioning assumptions was only possible when they had the time to do it.

The final variable covered in this phase of data collection was the investigation of triple loop learning as 'questioning the values and norms that influence the issue at hand'. Lonsdale members gave this option a much higher score than did Hackham and non-members. Their comments reveal a desire to do 'the right thing', for example 'particularly in our industry, when we have to let someone into a house, it doesn't mean that they own it' and 'we review and evaluate quality control and constantly question what you have done i.e. is it just compounding something wrong or is it right'. Non-members and Hackham businesses scored equally on this measure, with non-members commenting on ethics and integrity ('this is really important, once I questioned a beam that was in a classroom with an engineer and he came and measured it and found that I was right, it was too short and that could have had disastrous consequences'), but Hackham members simply commented 'I do this all the time'.

What contribution did these questions make to a better understanding the learning patterns of the three groups? Allowing for the small sample size, the overall impression is that small business owners use a range of learning styles to gather knowledge as it is needed and to a depth appropriate for the situation, illustrated by the higher value given to 'just getting the answer' and lower value to

'understanding alternatives and consequences' and 'investigating complex questions with others' by non-member businesses who lack the social capital networks to allow them to easily access complex interpersonal learning methods. Lonsdale's high scores for 'understanding alternatives and consequences', 'questioning assumptions' and 'questioning values and norms' indicate a willingness for double and triple loop learning but their lower scores than Hackham for 'investigating complex questions with others' suggests that the Lonsdale Business Association may not be the optimal structure for delivering this method. Perhaps the most interesting finding is the high value placed by Lonsdale on 'questioning values and norms'. This may relate to the slightly larger business size of Lonsdale respondents which allowed owners to be released from the work of the business to think about broader issues. In turn this ability to question values and norms may have been a factor in supporting the growth of these Lonsdale businesses.

Dissonance and friction

The literature (Amin &Cohendet, 2004: 117) identifies a role for dissonance and friction in the facilitation of learning. The interview instrument included the question 'Think about situations when you've learned something really new from others, did you learn better when you trusted them, or when there was some friction?' All but one respondent stated that trust aided learning better than friction (one Hackham business said both were needed).

Respondent comments are summarised in *Table 10* and show that the most common comment related to friction as a positive force for change (n=7),

Table 10: Comments regarding trust and friction in learning

(n=number of mentions)

	Hackham	Lonsdale	non-members	Total mentions
Business association culture of learning	1			1
Easier to learn if there's trust	2	1	1	4
External influences like government/economy		1		1
Friction is good	1	2	4	7
Friction reduces incentive to learn	2			2
Learn more from people you like	1	1	1	3
Personal drive to learn	1		1	2
TOTAL (n° topics not restricted)	8	5	7	20

Source: Peters 2009/10 fieldwork

identifying the role of friction in challenging problems; creating action as a result of competitor advancements; learning from making one's own mistakes; and just getting information when there was no-one available to help – as illustrated by comments from a Lonsdale and a non-member business:

> *I get more information if I trust people, but a little bit of friction leads to more competition which helps you work out other options. It depends on which edge is appropriate at the time. If someone else, a competitor, is achieving something we aren't, we need to know why. (Lonsdale member)*

> *It's both really, it's a double edged sword, it's possible to learn when you are friends but there is no better way than when something goes wrong and the friction and upset that happens makes you not want to experience that again.(non-member)*

More non-members (4) mentioned the need for friction than Hackham (1) and Lonsdale (2) businesses, possibly reflecting the challenges that triggered action. These findings resonate with Granovetter's (1973) argument for the strength of weak ties, where dissonance can be an effective trigger to make connections across groups. This situation is more likely to occur in non-affiliated businesses who do not have easy access to a trusted group. In reflection of this position, the research also investigated triggers for learning ('What sort of thing makes you learn something new, for example causes you to move from doing nothing about a problem, to doing something?'). The findings are shown in *Table 11* which reveals that the most commonly-mentioned trigger was business improvement (by six respondents, with more non-members mentioning this). Factors that could relate to friction (competitor advancement, problems, push from others) also totalled six mentions.

The next most frequently-mentioned trigger related to personal desire to learn (associated with 'my own passion to learn') by three people. Non-members provided a greater number and range of comments about triggers for learning (9) than Hackham members (7), and Lonsdale members showed significantly lower awareness of learning triggers (3 comments), for example:

> *Pressure, there are all types of pressure that will trigger me, financial and mental, people more so, for example my landlord at the moment, contractors, suppliers, customers they all push you to act. (non-member)*

Table 11: Comments regarding triggers of learning

(n=number of mentions)

	Hackham	Lonsdale	non-members	Total Mentions
Business improvement/growth	2	1	3	6
Competitor advancements			1	1
Having the right personality to learn from	1			1
Hearing about new ideas	1		1	2
My own passion to learn	2		1	3
Problems trigger learning (having a need)	1	1	2	4
Push from contractors/suppliers/customers			1	1
Requirement to know about product		1		1
TOTAL (n^{o} topics not restricted)	7	3	9	19

Source: Peters 2009/10 fieldwork

Once again, the research has revealed links between the strength and maturity of social capital networks and knowledge acquisition, with non-members (who have low social capital connectivity) reporting greater experience of and appreciation of the value of friction to initiate learning activities than Lonsdale, and only one Hackham member mentioning the value of friction. Non-members and Hackham members provided significantly more suggestions about triggers for learning than Lonsdale members, suggesting that both low levels (non-members) and high levels (Hackham) of social capital are more likely to generate learning than moderate levels (Lonsdale) where there is neither the drive generated by a need to know nor an easy source of information, nor a culture of continuous learning.

Knowledge and environmental behaviour

Connectivity between knowledge and behaviour change was explored in terms of small business environmental behaviour, seeking to identify whether knowing about the need for good environmental management had an effect on business practices, or whether other forces (in particular learning with and from others, or group norms) were also needed. This was addressed in a series of questions that initially explored the influence of 'just knowing' that change was needed, through to specific investigations of triggers and motivations within a learning context.

The 'just knowing' issue was examined in two parts: whether small business understood the size of its collective environmental footprint; and whether just knowing that an environmental problem needs to be solved was enough to cause a change in practice. The two association coordinators were asked 'On a scale of 1=none to 5=huge, what impact do you think the small business sector as a whole has on the environment?'. Lonsdale's response was '3' and Hackham '3.5'. The Hackham Coordinator commented:

> *Our businesses look after the environment pretty well. For people who are new in business, the last thing they are concerned about is environment and waste, they only think about this when they have time after getting their business to work and the bottom line is happening. If they have a business plan, they have thought about the environment, but may not have put it into place. But then if a business goes well they often don't re-open the business plan and will forget things in it such as the environment. If it's a cost factor they will put it aside until the business works. So the score is about half way because the newbies are generally*

poor at environmental management whereas the older businesses are better. (Hackham Coordinator)

Business respondents overall scored the impact of 'small business as a group' on the environment as 3.8 (4.4 for Hackham, and 3.3 for Lonsdale and non-members). Hackham member comments showed an understanding of the collective effect of the small business sector with comments such as 'small business is the grass roots of any industry, any business − large or small − is important to the environment'; 'small businesses have as great an impact on the environment as a normal household' and 'small business IS Australian business, it employs most of the people and pays the taxes, there are more small businesses than large businesses'. Lonsdale businesses generally agreed with these statements ('SMEs can do a lot of damage if they don't do it right' and 'people are lazy outside of their homes') as well as suggesting that small business has good environmental practices ('small businesses, especially the ones that I know, are very conscious of what they do') but that leadership needs to come from the larger corporates:

If the business community can be seen to be doing the right thing then maybe big businesses will take note. Big businesses won't get involved unless they see there is money to be made. It's like the degassing of fridges, big businesses won't abide by the law because of the costs involved. (Lonsdale member)

Non-members were split on the environmental footprint influence of small business. Some reflected the tragedy of the commons ('we contribute to bad things happening to the environment, but we're not exposed to the effects'), and

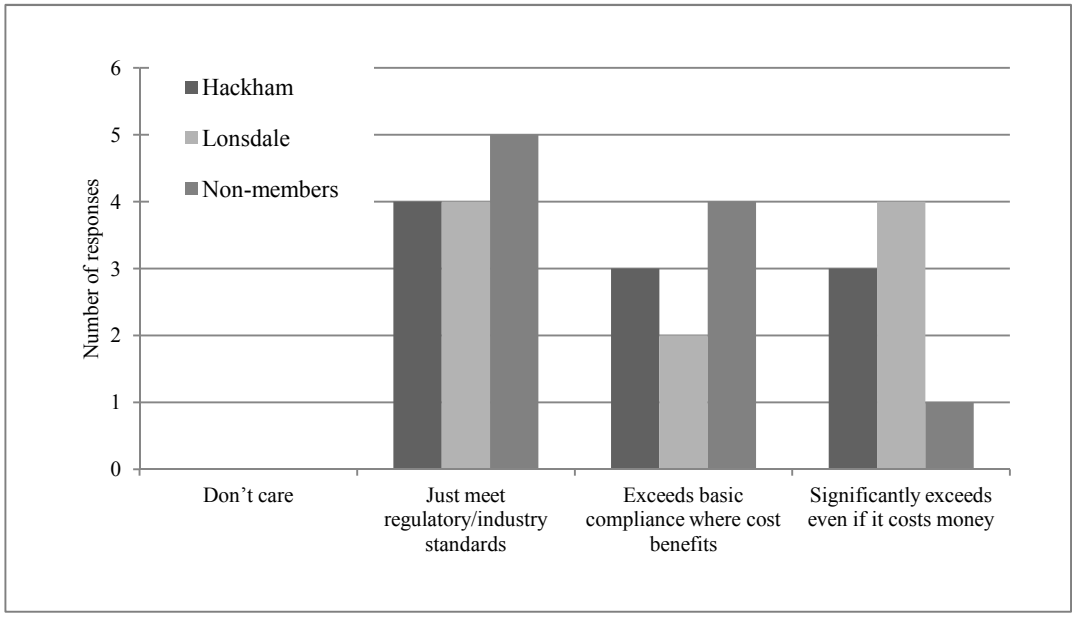
some felt that small business could pollute without being caught ('even though restrictions are tighter the eyes can't be everywhere, if small businesses can get away with it then they will, big businesses can't get away with it so much'). Others felt that the financial penalties of non-compliance would be felt more by small business ('small businesses are less likely to make a bad impact on the environment because of the financial penalties, larger businesses don't care'), or that small business does not get public recognition for their efforts:

> *We don't get public value out of the things we do – we don't get together as a group to do environmental things. Big companies may plant trees and it may cost them $1million but they will get $3million in publicity out of it. (non-member)*

Business' understanding of the size of the small business environmental footprint was then assessed against the reported level of environmental compliance. Initially, the two coordinators were asked about compliance in member businesses. The Hackham Coordinator believed that most Hackham members exceeded basic environmental compliance where there are cost benefits and generally see waste management as environmental management ('they see it as the right thing to do'). The Lonsdale Coordinator believed that the majority of Lonsdale members just meet regulatory or industry compliance standards and view waste management as both an environmental benefit and a cost to the business.

Figure 10 shows the reported level of compliance standards for each cohort.

Figure 10: Compliance with environmental standards



Source: Peters 2009/10 fieldwork

Figure 10 reveals that none of the businesses said they did not meet basic standards and over 50 per cent of both membership groups exceeded basic compliance standards, illustrated by the following Hackham comment:

> *I don't know about other businesses but for my own I am more conscious about recycling and minimum wastage. We initially had bins that they emptied three-four times a week that because of recycling efforts are emptied only once a month now. (Hackham member)*

More Lonsdale members reported that they 'significantly exceed environmental standards even if it costs money' than both other groups. Only six businesses (one each Hackham and non-member and four Lonsdale) businesses said they measured the impact of their environmental actions, and none use an accredited environmental or quality system.

The findings about knowledge of environmental effect, level of environmental action and use of environmental measures within the business all support the average score of 3.8 (out of 5) for small business impact on the environment. Interestingly, the average score for all 30 businesses for the importance of good environmental practices to their business was also 3.8 (on a scale of 1=not to 5=extremely). When split according to the three groups, all scores were similar (Hackham 3.9, Lonsdale 3.8 and non-members 3.9). A summary of their comments *(Table 12)* shows that the key drivers are community responsibility (7 mentions) and cost savings (5 mentions), although six businesses commented that are doing as well as they can with existing technologies.

Table 12: Importance of good business environmental practices

(n=number of mentions)

	Hackham	Lonsdale	non-members	Total mentions
Customers demand environmental certification			1	1
Environmentalism provides cost savings	2	1	2	5
Good environmentalism is 'just expected'		1	2	3
If you're not conscientious there will be repercussions		1	2	3
It's a community responsibility, we lead by example	2	4	1	7
It's expensive, we're working on the cost		1		1
It's not important to my business, but I comply	3		1	4
We try, but we do 'just throw away stuff'	1			1
We'd like to be better, but it isn't acceptable in the market			1	1
We're doing as well as we can using existing technologies	2	3	1	6
Total (nº topics not restricted)	10	11	11	32

Source: Peters 2009/10 fieldwork

The largest single response was for Lonsdale members who recognise their community responsibility and lead by example – this may link to the earlier finding that Lonsdale members believe that association members have better environmental practices than non-members because association members 'have ethics'. If 'community expectation' findings are grouped ('it's a community responsibility, we lead by example'; 'it's not important to my business, but I comply' and 'good environmentalism is just expected'), slightly more Lonsdale members were represented, supporting the comment by one Lonsdale member: 'we try to do the right thing by ourselves and the general public, and our employees − keeping both safe in the long term so there's less future financial risk, it doesn't cost as much if we get it right the first time'.

The following comments illustrate the struggle that small business experiences to be good environmental stewards:

> *The environment is very important in theory, in practice I could do better, but work is more of a priority, I know it's a contradiction. Cost is an issue, I always consider how much improved environmental operations will cost. (Hackham member)*

> *We are limited to what is acceptable in the market. If a product is cheaper for customers then they will want it even though morally it's not right, just to be competitive. In the building industry, now everything is pro-environmental and everything has to conform with Green Star, building is now better for the environment even though it is more expensive. (non-member)*

The second part of the process of testing the effect of 'just knowing' was to ask respondents whether just knowing caused them to change behaviour. More Hackham businesses (8) were inclined to change their behaviour as a result of 'just knowing' than Lonsdale (6) and non-members (4), and their perspectives are shown by the following comments.

> *It made a huge difference that we found out for ourselves that we needed to change. The main triggers were legal, regulation and liability, people are becoming so frightened they have to change, and we're more aware of being preventative. (Hackham member)*

> *We only need a low level of enforcement to make things happen. In small business we won't spend $10-$15k to fix small things. So we find the small things that are easier to fix cheaply. Bigger businesses can spend more. But the law helps homes and businesses to change collectively. (Lonsdale member)*

> *We know we should be good and we recycle our plastics and minimise our other rubbish, I monitor areas in my business that relate to environmental issues. (non-member)*

The higher level of compliance from 'just knowing' reported by Hackham businesses may reflect the general expectation of environmentalism in that precinct, but it may also reflect that once knowledge has been acquired, the learner forgets that they once did not have this knowledge. Further clarification was sought through questions that tested whether environmental management was seen as a cost or benefit to the business. The findings are shown in *Table 13* which summarises the perception of cost/benefit by cohort.

Table 13: Environmental management as cost or benefit

(n=number of mentions)

	Hackham	Lonsdale	non-member	Total
Cost	3	2	2	7
Benefit	4	4	4	12
Both (cost & benefit)	3	3	2	8
Neither		1	2	3
TOTAL	10	10	10	30

Source: Peters 2009/10 fieldwork

The largest response across all groups was that environmentalism is a benefit (four mentions each). Hackham businesses were marginally more likely to regard environmentalism as a cost than were Lonsdale or non-members, with comments like: 'it does cost us, but it's a benefit to the community and the world'. All groups commented on cost: 'we pay to dispose of things that once you got paid for such as oil and tyres' (Hackham member); 'it is a cost that we hope to turn into a benefit' (Lonsdale member); 'because it is extra work to keep sites clean and that costs money, eventually the cost gets passed on to the customer'; and 'new technology means that the machinery is more environmentally friendly and therefore more expensive to buy' (non-members).

Comments by those who stated that environmental management is a benefit indicate that for some, the concept of 'benefit' sometimes applies to the broader community but results in costs to the individual business or their customers: 'any steps for the environment have to be good, but it's a cost to business because any

environmental things we do costs money, environmental management is better for the world, it doesn't make my business better' (Lonsdale member). Other sources of benefit were: increased sales 'I can get more business' (non-member); reduced costs 'it has saved us money by recycling and not putting the waste in to general waste' (non-member); and operating within the law 'it's a benefit for us, we're clean so that nothing can come back to haunt us, but we've seen businesses that have been burned by stupid EPA rules, if that had happened to us it would have cost hundreds of thousands of dollars, with no net environmental benefit' (Hackham member). Benefit also flowed from better business systems 'any system or process that's put into place helps us to develop a culture that delivers outcomes and manages risks (including the environment) better' (Lonsdale member), thus supporting the hypothesis that learning in one field (environment) translates to others (innovation). The comments in support of the cost/benefit question illustrate a number of the barriers in Kollmuss & Agyeman's (2002) model of pro-environmental behaviour (Chapter 2) including lack of internal and external incentives and insufficient feedback about their behaviour, but there were few comments that suggest that values are a barrier. The findings also support Fielding's (2010) research that cost is not the biggest driver of voluntary environmental compliance.

Both of the coordinators said that their associations encouraged good environmental management. In keeping with the already-established modus operandi, Hackham seeds information (via guest speakers at meetings) and facilitates member discussion and business-to-business learning, while Lonsdale provides information and members autonomously discuss issues if they felt so

inclined. Thus it would be expected that, after Jiminéz (2002: 62). Hackham's approach ensures that learning occurs in the absence of a conscious intention to learn, in the absence of conscious awareness of the fact that learning is occurring, and in the absence of any conscious attribution of any noticed change to the effects of learning.

In summary, Hackham businesses rated the impact of small business on the environment significantly higher than the other two groups, and were more likely to change their environmental behaviour as a result of 'just knowing', than were Lonsdale and non-members. There was a correlation between the level of social capital (high in Hackham, moderate in Lonsdale and low in non-member businesses) and the influence of 'just knowing' on behaviour change; although slightly more Lonsdale businesses were prepared to pay to exceed environmental standards and more Lonsdale businesses measured the impact of their environmental actions. Non-members reported a lower standard of environmental compliance, with more 'just meeting basic compliance standards' than the two membership groups. All three groups rated the importance of good environmental practices to their businesses almost equally, with the key drivers of good practice being community responsibility and cost savings. Marginally more Hackham businesses regarded environmentalism as a cost to their business, but all three groups rated it equally as a benefit – citing the benefits as improved processes, more sales, cost savings and regulatory compliance.

The connectivity between learning and environmental knowledge and behaviour change was investigated by asking members of the local business associations

whether their association encouraged businesses to teach each other about environmental management. Nine of the Hackham members and three of the Lonsdale members said that their association encouraged sharing of knowledge about environmental management. Hackham members valued the chance to hear new concepts and discuss ideas at dinner meetings where information was presented ('the Council explained the waste streams and we chatted about what we can and can't do, I was surprised by what we could do and what systems are in place and being mooted'), with the Hackham Business Association structuring the session to enable discussion of environmentalism with others at the function ('we had a "yabber yabber" across tables, the Council was here regarding environmental practices and then an informal chat just occurred amongst members'). Hackham's use of a range of socially situated learning environments reinforces Bartlett's (1958) theory that interaction and socially provided tools and schemas for problem solving provide the contextual framework for learning.

In comparison, Lonsdale members also spoke about discussing the environment with other businesses, but reported a far less directional approach: 'the guys talk amongst themselves, George was discussing the issues' and 'the Lonsdale Business Association, the Council and the Southern Success Business Enterprise Centre are very supportive and practical regarding environmental management'. Once again, this finding supports the research evidence that there is a stronger culture of discussion and learning at Hackham, and although there was marginal difference in the reported environmental practices of both member groups, association members reportedly adhered to higher environmental standards than did non-members.

Information and behaviour

In order to inform practical implementation of the findings of this research, businesses were asked about the type of information that best influences good environmental practices. Initially, this was asked as an open-ended question of the association Coordinators, who felt that information needed to be 'fairly basic' for small business. The Hackham Coordinator suggested an information sheet about good environmental practices ('it would be good to work one up with them, because if you just get it made and send it out, it ends up in the bin') and the Lonsdale Coordinator expanded on the need for information to specifically target business interests: 'the most important thing is what money they can save, in which case they're more inclined to take it on, they struggle to keep themselves above board at the best of times' (Lonsdale Coordinator). However, at the time of the research, the Hackham Business Association did not provide written environmental information to its members, encouraging them to take control of their learning and source information themselves, although the association does include environmental topics at meetings and events. The Lonsdale Business Association provides environmental information on topical issues like global warming via e-mails, newsletters and information sessions ('we trust the organisations that we access this information from, and a lot of the information is current and in the media'(Lonsdale Coordinator)), however a folder of *Business and the Environment* by Business SA was on the shelf in the Lonsdale office and the researcher asked about it, and found that it had not been used in at least two years. When questioned on the reason for this, the Coordinator reported that organisations need to 'push' information with the association to get it on the

agenda at the local level. Both associations felt that it was easy for businesses to get information about the environment: 'just ring the environmental people in Council[4], it's all there'.

After the in-depth interviews with the coordinators, the business interview instrument was changed slightly to reflect commentary provided by the coordinators. Responses regarding usefulness of environmental knowledge are shown in *Table 14* (where a question was not asked it is shown in the table as n/a).

Table 14: Usefulness for environmental knowledge

(n=usefulness: 1=no to 5=extremely)

Method	Hackham Coordinator	Lonsdale Coordinator	Members Hackham	Members Lonsdale	non-member	Average (businesses)
Discussing with knowledgeable leaders	3	4	3.4	2.9	2.3	2.9
Having other businesses visit your premises	5	4	2.6	3.3	2.4	2.8
Listening to informed specialists	3	3	3.5	3.1	2.2	2.9
Reading detailed information	3	4	3	2.8	2.4	2.7
Reading e-mails about environment	n/a	n/a	2.6	2.6	1.6	2.3
Reading newsletters	n/a	n/a	2.6	3	2.1	2.6
Site visits to member premises	3	3	2.6	3.1	2.3	2.7
Talking to other business owners	n/a	n/a	3.5	3.0	3.2	3.3
Average rating	**n/a**	**n/a**	**3.0**	**3.0**	**2.3**	

Source: Peters 2009/10 fieldwork

[4] 'Council' in this case is the City of Onkaparinga, which at the time of the interviews had a unit specifically tasked to improve corporate environmental practices with two dedicated officers and project funding available for environmental programs.

The most useful information source reported by respondents was ‘talking to other business owners’ which averaged 3.3 across all business respondents, followed by ‘discussions with knowledgeable leaders’ and ‘listening to informed specialists’ (both averaged 2.9 across all business respondents), and the least useful was ‘reading e-mails about the environment’ at 2.3.

When considered from the perspective of each cohort, Hackham and Lonsdale members gained approximately equal value from all of these sources of knowledge (3.0), and non-members gained significantly less value (2.3). Hackham members placed considerably more value on ‘talking to other business owners’ at 3.5, ‘listening to informed specialists’ (3.5) and ‘discussing with knowledgeable leaders’ (3.4) and these scores exceeded the highest score in any category for Lonsdale (whose highest score was 3.3 for ‘having other members visit my premises’) and non-members for whom the highest score was 3.2 (‘talking to other business owners’).

The lowest overall score was for ‘reading e-mails about the environment’ (Hackham and Lonsdale 2.6 and non-members 1.6), suggesting a connection with Machlup's (1980) observation that such information is fragmented and transitory. Apart from reading e-mails, low scores differed between the three groups, with non-members placing low value on ‘reading newsletters’ (2.1) and ‘listening to informed specialists (2.2); Lonsdale members placed low value on ‘reading detailed information’ (2.8). Perhaps the lack of enthusiasm for these sources supports Machlup (1980) who posited that information is acquired by being gathered, whereas knowledge can be acquired by thinking and doing, where

reading newspapers, listening to specialists and reading detailed information come under the 'information gathering' category and of themselves are not sufficiently engaging to make these sources valuable. Or perhaps, reflecting Cohen & Levinthal (1999), this type of information (or codified knowledge) requires a different level of background understanding to be useful to these businesses, possibly the sender of the information had presented the content in context and language more suited to themselves than the receiver.

Somewhat surprisingly, Hackham members placed lowest value on 'site visits to other members' premises' (2.60), 'having other members visit your premises' and 'reading newsletters[5]' (also 2.6). The responses of Hackham and Lonsdale in relation to visiting each others' businesses seems counterintuitive, as the Hackham Business Association encourages this approach to learning, but Lonsdale does not – although Lonsdale members reported that they set up visits themselves. Perhaps this last comment provides insight into the puzzle, as Hackham members may feel that organised visits are a chore, whereas Lonsdale's self-initiated member-to-member visits would have more specific purpose and implied reciprocity.

The challenge presented by these findings is that the easiest form of information dissemination (e-mail) is the one least valued by recipients. Business association members valued 'listening to informed specialists' (average of 3.4), reflecting

[5] Respondents who scored 'reading newsletters' at more than two were asked whether they preferred printed or electronic newsletters. Two thirds preferred electronic newsletters, yet half of these said they would print newsletters to read them.

their positive experience of this method via their association meetings. The information that has the greatest average value for all three groups is 'talking to other businesses', which once again reinforces the importance of trusted networks to connect with other businesses, and of the value of experiential learning.

Innovation and environmental management

Innovation was included in the research in reflection of the literature which established links between firm competitiveness and innovation (Winter, 1987), with the aim of identifying whether, due to the different thinking and practice required, innovation was linked to improved environmental practices. The connection between innovation and good environmental practices was explored through a number of questions – starting with a general question about innovation in the participant business ('How innovative would you say your business is?'). Overall, the 30 businesses rated themselves at an average of 3.5 (on a scale of 1=not to 5=extremely innovative). Hackham businesses averaged 3.9; Lonsdale 3.6 and non-members 3.1. Businesses that gave a score greater than two were asked about the innovations that had been introduced in the past 12 months. Their comments are summarised in *Table 15* which shows that the bulk of innovation was focused on new equipment or methods (11 of the total 25 innovation types mentioned), as illustrated by a non-member: 'We build our own machinery to make products for the industry. We had work practices that used to take all day to do and now we can do them in an hour and that's why we only have two staff instead of 21.' Innovation relating to environmental processes was only

mentioned by two businesses.

Table 15: Nature of innovation identified in comments

(n=number of mentions)

Innovation type	Hackham	Lonsdale	non-members	Total mentions
New products/services	2	1	2	5
Management focus on innovation	2	3	1	6
New equipment/methods	2	6	3	11
Sharing ideas with others		1		1
Environmental processes (beyond compliance)	1	1		2
TOTAL (n° of topics not restricted)	7	12	6	

Source: Peters 2009/10 fieldwork

The researcher also asked 'what helps you to be more innovative?' with the responses summarised in *Table 16*, showing a range of influences with the most commonly-mentioned being: 'being aware of what's going on' and 'cost' (6 mentions each) and 'personal goals' (like more time off) and 'staying ahead of the competitors' both receiving five mentions. Only one business mentioned an environmental motivation as a trigger for innovation:

> *We've just converted all booths to gas rather than diesel, new exhaust system, just putting new wash bay in, next 12 months we're putting in a new pre-spray area. This doesn't have to be done in enclosed sealed environment but we are doing it. (Lonsdale member)*

Table 16: Influences on innovation

(n=number of mentions)

Influence	Hackham	Lonsdale	non-members	Total mentions
Being aware of what's going on	1	3	2	6
Better systems	1			1
Buying (supply) group		1		1
Costs/profits	4		2	6
Customer demand	2	1		3
Government regulation		2		2
Growing the business		2		2
Interest in new things	1			1
Local business association	1			1
Market forces (e.g. Global Financial Crisis)		2		2
Personal goals	1	1	3	5
Environmental motivation		1		1
Staff input	1		1	2
Staying ahead of competitors/the industry	1	3	1	5
TOTAL (n° mentions not restricted)	13	16	9	

Source: Peters 2009/10 fieldwork

Businesses were asked whether they thought that 'businesses that have good environmental practices are more innovative'. All Hackham members thought that this was the case. Eight Lonsdale members and seven non-members also thought that this was true.

An analysis of keywords (*Table 17*) shows that the largest number of comments related to the perception that innovation and good environmental practice both require learning and being open minded (five mentions), and secondly that

innovation and environmentalism are easiest to achieve in businesses that are accustomed to adaptation and that innovative businesses benefit from both (four mentions each).

Table 17: Innovation and environmental practice

(n=number of mentions)

	Hackham	Lonsdale	non-members	Total mentions
Innovation means learning, being open minded	2	1	2	5
Accustomed to adaptation	3	1		4
The business benefits from both	1	1	2	4
Willing to keep up with change	2	1		3
Working together with the community for change		1	2	3
Taking the time to care	1			1
Environmentalism pushed by legislation		1		1
Better employee involvement			1	1
Encourages them to look at the detail of the business	1	1	2	
TOTAL (n^{o} mentions not restricted)	10	7	8	

Source: Peters 2009/10 fieldwork

The findings in relation to environmentalism and innovation show that businesses believe there to be a link but actual practices within the businesses interviewed do not demonstrate this, echoing Eagly & Kulesa's (1997: 144) statement that 'one of the paradoxes of the psychology of environmentalism is that citizens generally hold pro-preservation attitudes but routinely engage in environmentally unfriendly actions':

We're not as good as we should be, but we're as good as we can be. We do everything we have to legally, and have changed our practices (for example, we don't wash engines any more). But we have more waste than fits in the recycling bin, so we throw away the rest of the stuff. (Hackham member)

Conclusion

Did the research provide clear indications of the influence of others (particularly local business associations) on the interest and ability of businesses to undertake tacit learning? Certainly there was evidence that the Hackham Business Association actively engaged in processes to encourage members to share knowledge in a purposeful way, whereas the Lonsdale Business Association only provided its members with information about training, but all three groups valued learning equally (and rated it consistently high).

For all three study groups, the highest value was put on double loop learning (considering alternatives and reflecting on what has been learned) and the lowest on single loop learning (just getting the answer), and a surprisingly high value (4.0 out of 5.0) was placed on triple loop learning (questioning values and norms). The need for friction to trigger learning was recognised in an inverse ratio to the level of social capital, with more non-members citing the need for friction than Lonsdale and Hackham businesses, and business improvement was the largest motivator for change.

Only Hackham businesses felt that the small business sector as a whole made a significant impact on the environment. Both Lonsdale and non-members gave this

a relatively low rating with a range of views in explanation, some believing that small business is a leader in environmental practices and others believing that small business can 'get away with' poor practices. Even so, all businesses reported meeting or exceeding environmental regulatory standards, with almost half exceeding or significantly exceeding these standards, and the key environmental drivers are community responsibility and cost savings.

The research tested whether 'just knowing' that change was needed would trigger action, with Hackham members most likely to change their environmental practices as a result of just knowing (fewer Lonsdale and very few non-members would act on knowledge alone), although 40 per cent of business respondents said that environmental management is a benefit to their company (and a further 27 per cent said it was both a cost and a benefit), but there was only one business where environmentalism drove innovation. In line with the other findings of this research, the most effective way of businesses receiving information that would influence environmental behaviour was talking to other business owners, with Lonsdale members placing greater value on business-to-business visits than the other two groups, while the lowest value was attributed to reading information via e-mails.

Chapter 6 has established knowledge provision as successful strategy for behaviour change within a social capital framework, with socialisation as the stimulus and carrier of cognitive activity (Amin & Cohendet, 2004: 67). The implications of these findings (and those described in the previous social capital findings chapter) will be brought together in the final Conclusions chapter.

CHAPTER 7: Conclusion

Introduction

This thesis seeks to understand mechanisms that influence behaviour change using environmentalism as the subject matter. In doing so, it describes the literature and field research that identified gaps in current understanding of the specific mechanisms of attitude change within groups through the use of environmentalism as content, and determined policy interventions that can be immediately implemented to assist in the adoption of sustainable environmental behaviour in an era of climate change. Small business was chosen as the research target because of the size of the sector (nearly two million in Australia), the lack of association across and cohesion within this sector, and the lack of effective policy interventions that address this sizeable but disparate sector.

The theoretical factors that contribute to behaviour change are well understood, but programs that create an understanding of the need to act, a trigger that provides the reason to act, and the ability to sustain this behaviour over time have been elusive. Environmentalism is challenging, illustrated by the tragedy of the commons, where individual users of a free resource benefit more from the continued degradation of that resource than from investing in remediation. The choice of a challenging issue as the topic establishes the findings of research as a model for behaviour change in many other fields.

Chapter 7: Conclusion

The research was structured around two factors, social capital – looking at the way that social groups influence individuals – and knowledge transfer, investigating how the acquisition of knowledge translates to behaviour. Separately, both social capital and knowledge transfer have features that can support individuals to be actively involved in changes in their behaviour. Together these two factors strengthen the motivation for change, and the ability for change to be sustained.

The field research investigated three groups of small business, two voluntary-membership local business associations with different levels of social capital and a control group of non-aligned small businesses, to test the influence of associations, the usefulness of shared learning as a behaviour change tool, and triggers that move individuals from 'just knowing' to an active change state.

This concluding chapter summarises the methodology, the findings from the literature and field research and describes the theoretical and practical contributions made by the research.

Methodology

Based on an underpinning epistemology of critical realism, where knowledge and memory are accepted as reality, and reality includes both structures and processes, the research sought to explore causal factors in small business environmental behaviour, particularly the influence of social connectivity and learning. Geertz (1979) suggests that in determining the best research method, researchers should consider paradigmatic assumptions, the phenomenon to be studied, and the

questions to be asked. Reflecting this advice, a qualitative approach was chosen because it supports an holistic view, considers relationships, allows for multiple perspectives and methods, and allows for the inclusion of quantifiable data.

Four waves of interviews were conducted, with the findings from each informing successive waves. The first wave consisted of scoping interviews with small business associations across Adelaide and assessment of the findings against criteria that established the optimal cohort for detailed research. The second wave involved in-depth interviews with coordinators of the two local business associations chosen from wave one. These interviews tested the structure and wording of the interview instruments and obtained the associations' perspectives. The third wave was in-depth interviews with ten small business owners in each of the chosen local business associations (Hackham and Lonsdale), which provided the greater part of the research material. Finally, the findings from the interviews with association members were repeated (with minor modifications that accounted for the lack of local group affiliation) with ten non-member businesses in other parts of Adelaide. The findings from the non-member group provided comparisons that established the social capital influence on member businesses.

The interview instrument contained a mix of closed questions in which the researcher provided each respondent with a limited set of responses to support accurate comparisons and reduce variation and error, and open questions aimed at eliciting explanation and detail. The establishment of causal relationships was essential to the generation of conclusions from this research and, recognising that

self-reporting of the acquisition of knowledge does not follow simple temporal cause and effect, the instrument was designed to allow for causal multiplexity.

A planned approach to data analysis was established early in the research design. Excel was chosen as the data storage and analysis tool because there are no limitations to the size of each entry and full quotations could be captured verbatim and stored in their entirety, quantitative data could be analysed and modelled, coding can be easily incorporated and still retain visual reference to the original text, large quantities of data can be stored on very small files enabling quick operations, and the software is readily available and does not require on-going subscriptions that expose researchers to the risk of losing access to data if licenses are not renewed.

Rigour was achieved by applying triangulation across waves two to four (the first wave of scoping interviews were brief and mainly addressed cohort selection), and by applying an audit trail consisting of coded identification numbers for each interview that allowed de-identification and quick reference to the field notes; auditable data reduction for each separate analysis query; data reconstruction and analysis using source notes attached to each set of analyses; and a process for recording contacts, interviews, permission records and communications.

The research questions

In this section, the findings from the research are framed by the research questions established in Chapter 1. Research Question 1 (learning) posited that learning from trusted others influences attitudes and behaviour, and that this influence (if

established) extends to environmental practices. Within this context, the research tested the information-knowledge dichotomy by examining whether simply receiving information is sufficient to affect behaviour, or whether deeper learning experiences (such as shared learning and double and triple loop learning) are needed. The status given to learning is explored, looking at how groups describe and value learning and how learning is incorporated into socialising processes. The thesis establishes an role for 'seeding' of new knowledge and provides a better understanding of how this process can be transferred to other content areas.

Research Question 2 (social capital) addressed the hypothesis that social connectivity is a critical element in creating an environment conducive to behaviour change. The fundamental question was ‘do groups influence behaviour?’, and if so, ‘how does this occur?’. Research Question 2 was structured around the themes of group norms for learning and environmentalism; motivation of group members to participate in learning; and how social capital facilitates involvement and generates learning.

Research Question 3 (environmental) used environmental behaviour to identify the influence exerted by groups and other affiliations on attitude; and to determine whether learning about one innovative concept prepares individuals for learning in other areas.

The importance of learning as a behaviour change tool

The literature suggests a symbiotic relationship between group cohesion that creates a medium for learning, and learning in turn providing the connectivity

between intellectual and social capital (Nahapiet & Goshal, 2002) and individual and social knowledge. While neither of the local business associations emerged as knowledge based or epistemic groups whose primary purpose is to achieve a specific knowledge goal (Knorr Cetina, 1981), or communities of practice which use shared practice to enhance individual competency (Amin & Cohendet, 2004), Hackham demonstrated the use of community as a vector for learning (Lave & Wenger, 1991) and on all measures exhibited greater group cohesion. The experience of members of the two local business associations is contrasted with that of the non-member group who had no socio-spatial economic affiliation and who epitomised the isolation so often attributed to small business. Non-members valued learning and used a broad range of learning techniques to acquire knowledge, but lacked the mediating influence of an association like Hackham that could seek out and interpret knowledge, or the connecting influence of an association like Lonsdale that could broker access to knowledge.

The process of knowledge acquisition in relation to behaviour change was a critical element in this research. The literature had established that simply providing information was unlikely to modify behaviour (Starbuck, 1993; Brewer & Stern, 1980), and this was reinforced by the field research which found that 'just getting the answer' scored lowest out of all learning strategies, and lowest overall for Lonsdale where this method was most frequently used by the Lonsdale Business Association.

Information-dissemination strategies such as reading e-mails and reading newsletters scored lowest in relation to gaining environmental knowledge,

supporting Katz & Lazarsfeld (1955) and Rogers (1962) observation that information does not result in action unless it is also transmitted through personal ties that reinforce relevance and importance. Participating businesses echoed this finding in response to a range of questions that teased out the role of delivery, interpretation and reinforcement of information, where active interaction with others (discussing with knowledgeable leaders, having other businesses visit your premises, and talking to other business owners) consistently received the highest scores. The exception to this pattern was the value attributed by Hackham members to 'listening to informed specialists', although this should be taken in the context of the dinner/discussion format provided by the Hackham Business Association where active interaction followed passive listening.

It is unclear whether an underlying motivation to learn (after Dewey 'if one is not motivated to learn, he will not, voluntarily, involve himself in the episodic relationships that are required in learning', 1966) is an essential element for 'reluctant learning' associated with environmental practices, or whether as suggested by Frensch et al. (2002), implicit learning can generate behavioural change before the individual is aware of the explicit reasoning behind that change. The Hackham Business Association addressed individual motivation by creating an expectation that members would engage in learning, thus creating group norms that also resulted in unconscious attitude change, illustrated by Hackham member belief that their personal attitude toward environmentalism had developed without external influence.

Chapter 7: Conclusion

A series of questions in the field research explored the way business associations and individual business owners structure learning and established that Hackham purposely and overtly raised awareness of learning and created opportunities to discuss new idea, in contrast to the 'information provision' approach by Lonsdale and the ad hoc opportunist learning by non-members.

At a deeper level, the research sought to identify whether activities such as action learning (where a work-based task is used as a shared learning mechanism), or business-related strategies such as joint ventures, are used to assist learning. Lonsdale Business Association had not attempted to create formal action learning programs, and Hackham's occasional attempts foundered due to low member interest, however learning from others did occur in an informal way. Hackham members reported that they 'help out and get involved' with their neighbours and that 'there is real merit in joint activities', which illustrates that Hackham members were comfortable approaching and working with others and members had sufficient grounding in the value of learning to make this an acceptable strategy. The Hackham Business Association found that small business is unlikely to make time for decontextualised learning and instead focused on creating trust between members to support each other to improve their businesses through joint activities that addressed commercial imperatives. This is a more natural approach to learning for business owners, particularly as calls for help were often directed to experienced businesses who used the opportunity to promote environmentalism as part of their assistance.

Chapter 7: Conclusion

In summary, the Hackham Business Association addressed Machlup's (1980) thirteen elements in the act of knowing (some elements are grouped in this explanation):

- Being acquainted: The association was built on a foundation of social equality and easy acquaintances. Committee members used a 'span of connections' approach, based loosely on organisational 'span of control' (Ouchi & Dowling, 1974: 357), where each committee member was allocated ten businesses with which they stayed in regular contact, encouraging members to attend functions, discuss business issues, and keep members up to date with emerging issues and trends.
- Being familiar: A range of activities was organised by the Hackham Business Association to combine learning and sociality. 'Over the fence' relationships were encouraged and connectivity was strengthened through committee-member relationships as well as through member-member relationships.
- Being aware: Hackham members had a better awareness of the size of the small business environmental footprint and the need to take action themselves. Awareness was raised and continuously reinforced within the group's social, commercial and learning transactions.
- Remembering and Recollecting: Hackham has developed and reinforced a wealth of local folklore that reinforces the norms and expectations of the group, exemplified by one of the Hackham leadership group visiting an untidy business and encouraging the owner to clean the site, and members describing situations where leaders had provided new businesses with rent

holidays in return for regular mentoring to improve the viability of the lessee's business.

- Recognising: There is a strong culture of openness about good and bad practice within the precinct, using local examples to illustrate compliance, non-compliance and exemplary conduct.
- Distinguishing: The expected standard of environmental compliance is clearly stated, and members reported situations and behaviours that were unacceptable. Importantly the group supported intervention in these situations, and managed the interpersonal friction that could have resulted from these interventions in a way that contributed to a positive social setting.
- Understanding: Members understood the expected standards and endorsed sanctions for underperformance. The outstanding evidence for Hackham's success in achieving understanding was that members thought that their environmental standards were self-generated.
- Interpreting: Members were encouraged to discuss new knowledge immediately after it had been presented, thus allowing interpretation and contextualisation of the content.
- Being able to explain, Demonstrate and Talk About: Members seeking information were generally referred to other members, rather than providing answers directly. This also encouraged the 'teacher' to develop their understanding through instructing others.

- Being able to perform: Hackham members reported an on-going focus on good environmental performance and the researchers' visits to businesses for interviews revealed no obvious environmental hazards.

Earlier chapters introduced the concept of double and triple loop learning, suggesting that environmentalism, because it challenged the long-held view of Earth as an unlimited resource and waste sink, required triple loop questioning of underpinning norms and values and hence a change in thinking and actions (Wierdsma, 2004). The field research used two different question groups to test this hypothesis: the value of norms in learning new concepts and the level of environmental compliance that showed whether these norms translated into practice. Somewhat surprisingly, Lonsdale members gave a significantly higher score to ‘questioning values and norms’ (4.4 out of 5.0, the highest score by Lonsdale members for any of the learning options), compared to 3.8 for Hackham and non-members. Hackham members rated ‘alternatives and consequences’ (double loop) highest at 4.5, and non-members rated ‘reflecting’ (single loop) highest at 4.3. However, more non-members mentioned the value of friction ‘as a positive force for change’ than the other two groups and more non-members spoke of problems in their business triggering a need to learn.

The conclusion drawn from these findings (acknowledging that the small sample size limits interpretation) is that non-members, who lack the resource of readily-available trusted others, are more likely to be pushed into learning by a problem in their business and when this occurs, have only a narrow frame of reference about cause and effect. Thus their learning is incremental and unlikely to lead to

transformative change. Lonsdale members, who have access to reliable information and connection to others who also have that information, but operate in a less trusting environment than Hackham, appear to appreciate the need for dissonance to drive change and the need to question both assumptions and values to gain commercial advantage. Hackham's comfortable, trusting milieu appears to have reduced the friction needed to undertake deeper questioning of the issues at hand, creating a greater reliance on leadership to set direction. The role of leadership at Hackham was critical in creating and sustaining a group that was supportive internally (bonding social capital) and connected members to new ideas from outside the group (bridging social capital).

Socialisation and enculturation to reinforce norms of behaviour

Social capital was used as the framing theory for this research in reflection of Nahapiet & Ghoshal's (1998) position that social capital is embedded within networks of mutual acquaintance and recognition. This interpretation of social capital posits that there is no single, or even formal structure for social capital, rather that social capital reflects the quality and purpose of the network. In respect of the local business associations and comparison non-aligned group in this research, Nahapiet & Ghoshal's categorisation means that any group can potentially embody social capital, causal elements can be diverse and disparate, and oft-studied features such as leadership and group structure are but one element in a pattern of interactions that together contribute to a sense of 'group' with shared values, norms and behaviours.

Chapter 7: Conclusion

The connections described by members of the three research cohorts illustrate how individual businesses can (and typically do) have a range of loose ties that hold different value according to the level of reliance on those ties. In low social capital environments (the non-member businesses and to a lesser degree the Lonsdale members), Granovetter's (1973) weak ties are the predominant driver of learning as business owners rely on loose ties for core business intelligence. This suggests that these businesses can capitalise on the range of new ideas generated through these ties to benefit their businesses. However this assumption overlooks the role of internalisation and reinforcement in learning, both of which are lacking in those groups. To a large degree the ideas received from loose ties fall on unprepared ground and their adoption is haphazard. In comparison, Hackham businesses have fewer direct external connections and receive ideas through the mediation of the committee, which determines priority and creates situations where those ideas are introduced, are activated through interpersonal discussion and are reinforced through repetition, demonstration and sanction. Thus Hackham businesses gain new ideas through Burt's (1992) structural holes – information across networks – and the benefits from ideas sourced through structural holes are made real through Hackham's social capital framework that provides interpretation and reinforcement of learning.

A substantive difference in the process of reinforcement was observed between the three cohorts. Svendsen & Svendsen (2004) describes how culture and behavioural rules are achieved through repetition, tradition and example and reinforced through social attention or ostracism. The Hackham Business Association supports the development of a group culture through intent and

practice, exemplified most strongly in their overt attention to learning. Unlike the Lonsdale and non-member groups, Hackham both states and models the importance of learning. This is illustrated by the strategy of holding dinner meetings (in themselves a format for social interaction and reinforcement) at which guest speakers provide input on topics that support the values established by the committee. Time is allocated for members to discuss each topic, with the committee providing suggestions as to how the new knowledge might be explored, adopted, and reinforced through on-going business-to-business discussion and activity. The repeated targeting of environmental knowledge and improved environmental practices by the Hackham committee through fora such as dinner meetings has resulted in the adoption of the committee's environmental values by the membership.

Significantly more Hackham members feel that they can identify the source of their beliefs about environmental standards, with the majority stating that they set their own high standards. This suggests that the group values have been internalised by individual members and that the leadership of this group has been successful in changing member beliefs. Importantly for the Hackham culture, members willingly cooperate in the process of reinforcement, with many wryly acknowledging the tactics used by the committee to encourage involvement. Whether this acceptance of social pressure relates to group size (after Olson, 1965, who suggested that social pressure and social incentives operate only in groups that are small enough for members to have face-to-face contact) was not clear from the research. However the catchment for the Hackham precinct was substantially smaller than that of Lonsdale so individual businesses would have a

higher rate of incidental contact with the same businesses in the course of their daily activity than would be the case in the larger Lonsdale precinct, supporting Malmberg's (2003) observation that local circuits generate greater likelihood of regular meetings and opportunity for development of relationships. Certainly there was more discussion of ‘learning by looking over the fence’ in Hackham, and a greater expectation that Hackham businesses that are not members of the association learn as a result of their proximity to member businesses.

Lonsdale is a much larger precinct, lacking the level of continued accidental contact at Hackham, which supports the role of proximity in creating community and facilitating learning, consistent with Malmberg’s (2003) assertion that dispersed communities require targeting of members and more investment in time, money and energy to establish and maintain than do proximal communities which benefit from both structured and unplanned interactions. The findings support Amin & Cohendet's (2004) theory that ‘spatially sticky’ tacit knowledge is best managed in dense networks of communication.

Seeding and embedding challenging topics

The topic of environmentalism was used in this research to test learning and social capital influence. Its value lay in it being regarded by small business as a reluctant behaviour, reflecting Fielding et al.'s finding (2010: 2) that although there is growing normative support for household sustainability, small business has been slower to change production and consumption practices, and Eagly & Kulesa's (1997: 144) observation that the paradox of the psychology of environmentalism

is that individuals generally hold pro-preservation attitudes but routinely engage in environmentally unfriendly actions.

This research used self-reported environmental compliance as the measure of behaviour, and found that non-members (who lack peer influence), were more likely to 'just meet regulatory or industry standards' than the two associations whereas the two member associations were more likely to exceed basic compliance, although their motivation differed. Hackham businesses gave the highest rating for the impact of the small business sector on the environment (4.4 out of 5.0), demonstrating that the association's educative process had changed member understanding. Lonsdale's rating for this issue was significantly lower (at 3.3 out of 5.0) and may reflect the lack of attention paid by the Lonsdale Business Association to attitude development, or that the higher level of environmental compliance reported by Lonsdale businesses was true for all small businesses. The reason non-members scored this issue at the lower level of 3.3 would also suggest that they extrapolate their own experience to the small business sector as a whole, or possibly, without normative influence, lack interest in the topic.

Winter's (1987) observations of the linkage between firm competitiveness and innovation, suggested that, due to the need for a different way of thinking to support 'beyond compliance' environmental behaviour, firms that significantly exceeded basic compliance would also be more innovative. Based on this hypothesis, one would expect Lonsdale businesses to be more innovative. However, Hackham businesses rated their level of innovation highest of the three groups (at 3.9 out of 5.0), compared to Lonsdale at 3.6 and non-members at 3.1,

but Lonsdale provided significantly more examples of innovation, and listed a greater number of influences on innovation (16) than Hackham (13) and non-members (9). These findings suggest that Hackham businesses may have overstated their level of innovation (perhaps reflecting the more frequent use of innovation dialogue in association communications), and that there is consistency in Lonsdale's pattern of innovation, environmentalism and triple loop thinking.

Finally, the research reinforced Downard's assertion (2002: 494) that the essence of belief is the establishment of habit, and that in terms of behaviour change, the on-going demonstration and reinforcement of that belief is essential. This supports Nolan et al.'s (2008, in Fielding, 2010: 114) findings that descriptive normative information about what others in the community are doing to conserve energy resulted in larger decreases in household energy consumption than simply providing information linking energy conservation to environmental, social or economic benefits.

Theoretical contribution

The main theoretical influences on this research are Granovetter, Nahapiet & Ghoshal, Amin & Cohendet and Dewey. Granovetter's 'strength of weak ties' conceptualised how networks link small scale interactions to large scale patterns (1973: 1360), which underpins the findings of this research and identifies the policy potential for environmental action, whereby government can seed ideas into groups which then incorporate those ideas into the value base of their group. Similarly Burt noted that non-redundant contacts which lead to new networks

create diversity in network information resources, and that agents (in this case the Hackham leaders) positioned near the holes in their social structure are more susceptible to good ideas (Burt 2004: 349-350). As with the businesses themselves, 'just knowing' is not in itself sufficient reason for Hackham leaders to change their views on environmentalism. The acceptance of environmentalism by the Hackham leadership was due to three factors: the maturity of the leaders' businesses that allowed the owners to look outward to issues beyond immediate commercial imperatives; the shared belief in the value of sustainable business practices; and the repeated seeding of environmentalism by the City of Onkaparinga to business association leaders. Thus business leaders had high absorptive capacity, which made them receptive to the influences of norms and seeding of ideas established in this research.

The research supported Granovetter's (1973) observation that weak ties create innovation, learning and professional advancement between groups, and provided evidence to show how environmental learning can be facilitated and maintained. The mechanism for this to occur is based on and expands upon Nahapiet & Ghoshal's (1998: 243) work on social capital attributes that incorporate structural, relational and cognitive dimensions, where network ties (evident in Hackham) provide for transmission of information by capitalising on precinct density, connectivity and information exchange hierarchies.

The findings also reinforced Nahapiet & Goshal's (2002, in Amin & Cohendet, 2004: 71) relationship between intellectual capital (the reservoir of different types of knowledge) and social capital (the assets gained from social interaction),

demonstrating a connection between social and intellectual capital that was strongest in the Hackham Business Association which overtly promoted both forms of capital, weaker in the Lonsdale Business Association that only focused on intellectual, and weakest of all in non-members that had no connected approach to either. Thus organisations created for one purpose may provide resources for different purposes (Nahapiet & Ghoshal, 1998: 245) and local business associations, created for peer sociability and economic development, are well positioned to address member attitudes.

The mechanisms of knowledge transfer were strongly influenced by the thinking of Nahapiet & Ghoshal (1998), Dewey (1967), and Amin & Cohendet (2004). These scholars reinforced the importance of sociality, with Dewey linking social behaviour and motivation (1966: 37), Nahapiet & Ghoshal (1998: 243) describing how advantage can be gained from creation and sharing of knowledge, and Amin & Cohendet (2004: 72) reinforcing the importance of situatedness and introducing the concept of triple loop learning.

In very complex situations (such as response to climate change), there are so many variables that logical thinking cannot provide clear results, and individuals are more likely to be influenced in their thinking by contagion of ideas from their social affiliations (Dewey, 1910: 224). This explains the attitudes of Hackham members, who showed greater propensity to adopt the environmental beliefs of their association. The ability of Hackham to convert members to pro-environmental attitudes shows that poor environmental practices in small business identified by Fielding et al. (2010) can be changed. In Hackham's case, attitude

has been reliably translated to behaviour, addressing the paradox of pro-preservation attitudes with environmentally unfriendly actions identified by Eagly & Kulesa (1997). Most importantly, the findings provide a strategy for governing the commons (Ostrom, 1990) by creating cohesiveness that supports the development of binding voluntary agreements and even distribution of cost for competing businesses within the precinct.

Amin & Cohendet (2004: 90) stressed the importance of proximity to support tacit learning through both social interactions and formal business transactions, with local belonging as the vital asset, reinforced by 'a common anthropology of socialisation, social interaction, interest alignment, and community maintenance, which acts as a vital medium for learning' (2004: 12). This research reinforced that observation, demonstrating that the strongly-socialised group at Hackham shared common interests and values and members had largely internalised their association's belief in the value of learning and pro-environmentalism, while Lonsdale members did not report a shared understanding of learning and environmental expectations, and non-member businesses relied on their individual beliefs and business imperatives to drive learning and environmental activity.

The concept of triple loop learning developed by Amin & Cohendet (2004: 72) provided an important element of investigation in this research, with the findings posing an interesting juxtaposition between autonomous drivers of knowledge (Lonsdale) and socially-guided knowledge (Hackham). The availability of information combined with weaker social capital connections at Lonsdale produced more businesses who used triple loop learning than at Hackham, where

the influence of leaders appeared to undermine individual members' need to question assumptions and values. Thus Lonsdale had created a framework for individual learning, rather than Amin & Cohendet's 'architecture for interaction' (2004: 116).

The contribution that this research makes to the literature is threefold: it provides evidence to support the work of the key theorists; it applies these theories to the challenge of pro-environmentalism in business and confirms that the theories hold; and it makes a stronger connection between social capital, learning and the environment than is evident from published research.

A number of opportunities for further research are indicated with the primary aim of establishing a link between social capital influence, learning and the environment. The research provides sufficient evidence to suggest a link exists, but the sample size means that the extrapolation of findings to larger populations needs to be undertaken with caution. Repeating the research with a statistically significant sample would test the rigour of the research design and provide more robust findings. Benefit would also be gained from expanding the number and nature of local business associations under study and incorporating groups from rural areas to identify whether higher rural levels of social capital identified by Onyx & Bullen (2001: 51) also contribute to improved learning outcomes.

Because of the low level of adoption of Environmental Management Systems in small business, the key measure in this research for determining environmental compliance was business owner self-reporting. Clearly this is a flawed measure, as owners are likely to bias their responses toward better standards of compliance

than are actually in place. The development of a simple measure for environmental standards would provide an objective and comparable measure that would produce more accurate results when gauging the connection between belief and action.

Despite many searches over the period of research and writing, reputable data on the size of the small business environmental load in Australia was not available. The current trend toward evidence-based policy requires reliable data to trigger interest and action, and data on small business environmental activity and pollution at a national, state and local level is sorely needed. The pending introduction of a carbon tax in Australia will address some elements of this data deficiency, but will shift the focus from other forms of pollution to the narrow issue of carbon, and may undermine efforts to reduce pollution and waste from other sources.

There is limited research that quantifies the benefits to small businesses of membership of networks and local business associations and, apart from this research, none that explores the relationship between business network involvement and improved environmental practices. In an economy dominated by small business, the lack of research interest to support a better understanding of strategies to address small business isolation and improve productivity, employment and environmental practices is astounding. Nor is there a significant body of research into learning in small business, despite recognition in the regional development sector that small business owners are reluctant to engage in formal learning processes, indeed entrepreneurs have been defined by their

negative attitude to learning (‘an entrepreneur is someone who doesn’t like being told what to do’), personal communication, Manager North West Business Development Centre, 2011.

Finally, the individual factors that contribute to attitude development and knowledge transfer within spatially-connected small business groups would benefit from research in their own right, seeking to identify the triggers for attitude change, the motivations for behaviour change, and how social capital groups can play a causal role in both.

Practical contribution

The most important contribution made by this research is the identification of set of practical approaches that are transferable to other situations. From a regional development perspective, this research demonstrates that the 'span of control' model is effective at both precinct and regional level. The gathering together of precinct group leaders into a single cohesive regional group can replicate the process of norm development and reinforcement that was in place at Hackham and provide a simple mechanism for seeding new ideas. This process makes connection across structural holes (Burt, 2004) and links weak ties (Granovetter, 1973) to diffuse and reinforce new knowledge and innovation.

The span of control concept is not new in Regional Development, but the opportunity to use this process to actively seed learning has not been developed, indeed only Hackham of the eight Local Business Associations in operation at the time of the research had purposefully translated the information received from

other sources into memes that could easily spread throughout the precinct. This has implications for the way ideas are seeded from government to community, particularly as 'just knowing' is largely ineffective unless recipients are also taught how to know.

Unfortunately, the easiest methods of information dissemination (e-mail and newsletters) were also the least effective and although these communication mechanisms usefully contribute to 'just knowing', they had very little effect on attitude or behaviour. The most effective influences on behaviour were group norms, peer pressure and face to face interaction, supporting Svendsen & Svendsen's (2004: 28) assertion that 'face-to-face interaction generates common social norms and creates predictable behavioural patterns', and that the development of culture and behavioural rules is achieved through repetition, tradition and example and reinforced through social ostracism.

The role of leadership is an undeveloped theme in this research, and yet the findings indicate the importance of thought leaders (Sotarauta, 2005: 60) who take a purposeful approach to leadership and knowledge transfer, and who establish and maintain mutual accountability, both within their groups and for those standing on the other side of social capital holes.

Unlike physical capital which depreciates the more it is used, social capital appreciates with use, and on-going investment in the establishment and successful operation of local business groups will contribute to improved small business capability. When combined with a focus on learning, voluntary precinct-based groups provide a mechanism for directly seeding ideas and knowledge to

receptive small business owners. More importantly, this mechanism also generates attitude change and allows these attitudes to be maintained over time, a solution for environmental behaviour-change policy where backsliding is an on-going concern.

Concluding thoughts

Small business make a sizable contribution to pollution and environmental degradation in Australia, yet there is very little understanding of mechanisms to improve small business environmental performance and, because of the difficulty of engaging small business owners and the challenges in creating effective policy interventions to a dispersed and disconnected audience, there has been limited research on this topic. This research has addressed that gap by investigating the factors that contribute to successful learning and environmental attitude development within local business associations in Adelaide. The comparative study of three groups of small business owners with varying degrees of social capital connectivity has produced clear results that confirm that social capital provides a sound platform for learning and environmental behaviour change.

The study revealed that social capital groups must be overt in their communication of group goals, and that simply brokering information does not lead to knowledge, nor does simply organising activities generate learning, rather groups must clearly state their values and actively promote these values through their actions. Goals must support learning and groups need to create situations where both deliberate and incidental learning can occur, where actions are

repeated, and where there is conscious development and reinforcement of group norms.

Information by itself has little effect on either learning or behaviour, and the easiest information dissemination strategies are also the least beneficial. Tacit knowledge transfer (situated person-to-person learning) over time is the most effective, particularly where it is combined with information from reliable sources such as specialists and business leaders. The research has demonstrated that Guthrie's Law of Learning (Akbar, 2004: 2011), where behaviour change results from a sequence of learning actions that respond to a combination of stimuli and learning, is most effective if it is 'lubricated by the oil of social capital' (Kilpatrick, 1999: 133).

In conclusion, this research has found that the purposeful use of social capital can address the environmental tragedy of the commons by capitalising on isolated small business owners' need for sociality, by creating and reinforcing clear and overt group goals, and by valuing tacit learning that supports better business and environmental practices. The lessons from this research carry over to many other domains, and can be applied as effectively to communities and organisations.

This thesis has demonstrated the accuracy of the hypothesis that the primary agency of group influence on individuals is socialisation and enculturation, and has shown that to effect attitude change we must build social capital structures that support and reinforce learning and actively seed knowledge.

Appendix: Interview schedules

Wave 1: Local Business Association Telephone Interview
Hello, my name is Kristine Peters and I'm following up a letter I sent last week regarding my PhD research on learning and environmental practices, for which I'm interviewing a number of business associations. I would like to do a telephone interview with you, it takes about 20 minutes, your responses will be anonymous, and your participation is voluntary. Would you like to do the survey? Is now a good time?
1. IDs (randomiser, database)
2. Can I confirm that the name of the Association is:
3. And your name is:
4. What is your position or role with the Association?
5. Approximately how many members does your Association have?
6. What type of industries are represented by member businesses? a. What is the dominant industry in your Association?
7. Would you say that your Association values learning among members? Y/N/D
8. Does the Association provide information or knowledge-sharing sessions to help members learn better business practices? Y/N/D a. If yes, what sort of sessions?
9. Does your Association help to create learning through shared activities such as site visits, practical workshops, joint projects? Y/N/D a. If YES, please describe…
10. Are your members encouraged to teach each other about better business practices? Y/N/D a. If YES, how does this occur? b. Do you specifically encourage members to teach each other about environmental management? Y/N/D
11. On a scale of [1 = none to 5= huge], what impact do you think the small business sector as a whole has on the environment?
12. Would you say that your Association values good environmental practices among its members? Y/N/D a. Why do you say this?

Appendix: Interview Schedules

Wave 1: Local Business Association Telephone Interview
13. Is it up to the individual business, or is there a cohesive view within the Association, about what is 'good environmental practice'? (Individual/Cohesive/Other/Don't know)
14. Do you think that environmentalism is generally viewed as a positive or a negative thing among members? Positive/Negative/Don't know
15. Do you think that environmentalism is viewed any differently by local businesses that are not members of your Association? Y/N/D a. Please explain
16. Does the Association introduce **new ideas** about environmental management practices to its members? Y/N/D a. If YES, can you give examples of how this has happened?
17. What do you think has the greatest influence on your members regarding environmental practices in their business?
18. Do you think that members feel that environmental management is a cost or a benefit to their business? Cost/Benefit/Don't know
19. What information do you think your members need about implementing good environmental practices? 20. How easy is it for them to get this information? (very easy, fairly easy, a bit difficult, very difficult) 21. Does the Association **provide** environmental information to members? Y/N/D a. If yes, How does the Association decide which environmental information is accurate and useful?
22. I'm going to read you a list of ways to share environmental knowledge, and ask you to rate their usefulness to members on the following scale [1= not useful, to 5= extremely useful]: a. Reading general environmental information b. Reading information about a specific issue of interest c. Talking one-one to other group members about environmental practices d. Listening to informed speakers or specialists about specific environmental practices e. Discussing environmental practices with knowledgeable leaders f. Hanging out with group members in informal social situations g. Participating in formal meetings about environmental practices h. Site visits to member premises to look at their environmental management i. Discussing environmental practices with friends
23. I'm going to read you five statements, and ask which of these describes the majority of your association members: a. Don't care about meeting environmental compliance b. Just meet regulatory or industry compliance standards c. Exceed basic compliance where there are immediate cost benefits d. Actively seek improvements in their environmental management e. Integrate environmental management into their planning and decision-making processes

Appendix: Interview Schedules

Wave 1: Local Business Association Telephone Interview	
24.	Do members generally see **waste** management as environmental management or as just paying attention to the bottom line? Waste/cost/other/don't know
25.	Do you think that business attitude toward environmentalism has changed with the increasing attention to climate change and drought? Y/N/D Comment:
26.	If you were looking to change members' environmental behaviour, how important are endorsements by respected people? (on a scale of: 1= not at all important, to 5 = extremely important) IF >2.5, which people's opinion carries the most weight, and why?
27.	Does the business community have the same respect for businesses with poor environmental practices as it does for other businesses? Y/N/D Comment:
28.	Is the Association affiliated with any environmental groups (including AWARE, stormwater pollution prevention programs, industry programs, water catchment groups etc)? Y/N/D If YES, which groups:
29.	Do you think that businesses that have good environmental practices are also more innovative? Y/N/D Why?
30.	That's the end of the survey questions. As part of my research, I'll be working more closely with one local business association and its members, this will involve: one hour-long interview with the Association, telephone interviews with members of the association, and in-depth interviews with a small number of members. All interviews will be confidential and I will be presenting a summary of the findings of the research to participating Associations. Are you happy for me to contact you at a later date to see if you're interested in participating further? Y/N/D
31.	Thankyou for your time. When I've finished interviewing the Associations, I'll send you a letter that outlines the findings from this stage of my research. If you have any queries, you can contact me on xxxxx.

Appendix: Interview Schedules

Wave 2 Association Questions: In Depth
Thank you for agreeing to take part in this interview, it will take about an hour and you can stop at any time. Your responses will be anonymous, and your participation is voluntary.
1. IDs (randomiser, database)
2. Can I confirm that the name of the Association is:
3. And your name is:
4. What is your position or role with the Association?
5. This interview will focus on two topics: learning between Association members, and environmental practices. The first set of questions is about learning. Is learning about better business practices a priority for your Association? Y/N/D If YES, how does the Association encourage business owners to improve their knowledge?
6. Do you think that members who actively cooperate on projects or activities learn more about good business practices than those who 'go it alone'? Y/N/D If YES, Does the type of activity make a difference?
7. Do you find that individual members who are keen on learning new things influence the group? Y/N/D If yes, how?
8. Do members who make easy connections to other networks or groups bring more new ideas to your Association than those who don't? Y/N/D Can you give examples (name the businesses if possible, these will be invited to take part in the in-depth business interview – provided they have given permission to be contacted).
9. What are the features of members who bring new ideas into the group? (prompts – What type of personality are they? What type of businesses do they run? Are the commonalities?) 10. What sort of ideas do they introduce? 11. How are these ideas received? (prompts: What type of personality/business is most likely to listen and take on new ideas?)
12. In general, what is the level of motivation of your members to develop *relationships* that allow them to develop new learning? (1=not at all, 5= extremely) Why is this? 13. If Q12 >2, What contributes to this level of motivation? 14. Is relationship-building something that happens spontaneously in your Association, or do businesses need help in building relationships? Spontaneously/Help/Don't Know Comment: 15. For those businesses whose owners actively develop 'learning relationships', do you

Appendix: Interview Schedules

Wave 2 Association Questions: In Depth
think that there is a difference in the way their businesses run, compared to businesses that 'go it alone'? Y/N/D IF YES, what difference? 16. If Q12 <3, why is this?
17. If YES to Q5: On a scale of 1=not at all important, to 5 = extremely important, how important are the following in helping members learn new concepts: Just give them the answer Simple proof that it works Investigating complex questions with others Reflecting on what has been learned Questioning the assumptions about why something works Questioning the values and norms that influence the issue at hand
18. What standards of environmental practice does the Local Business Association expect of its members? 19. How does the Association let its members know what these standards are? 20. Is there a difference in the stated and unstated environmental expectations? (Are some things stated and not reinforced? Are some things not stated but expected?)
21. Do you think that a shared belief in good environmental practices is part of the normal relationships within the Association? Y/N/D If Yes, Can you give an example?
22. Do you think that members regard environmental management as the same or different to other areas of business management? Same/Different/Don't Know If DIFFERENT: In what way?
23. In your Association, is environmental knowledge taken up by all members or only to those who express interest? All/Interest/Don't Know
24. Are there environmental 'cliques' within the Association? Y/N/D 25. If YES, Do members of these cliques actively seek to influence people outside of the clique? Y/N/D IF Y to Q25, please give an example: 26. If Y to Q24, Do the environmental practices of the cliques differ from non-clique members of the group? Y/N/D If Y to Q26, in what way? 27. If Y to Q24, How interested in the environment are cliques that do not identify themselves as 'green'? 1=not at all, 5= extremely
28. Do you see a difference between members who have formal roles in the Association and those who have no formal roles in their ability to learn and adopt new environmental practices in their businesses? Y/N/D Comment:
29. Do you see a difference between members who have strong links with other groups and those who are mainly involved with your Association in their adoption of good environmental practices? Y/N/D

Wave 2 Association Questions: In Depth
Comment:
30. Do businesses that have extensive environmental *knowledge* have a different status within in the Association? If yes, what is the connection between their knowledge and how they are viewed by members?
31. That's the end of the interview, do you have any other comments? Thank you for your time. I'll send a summary of our interview to you in the next 3 weeks – if there's anything you think I haven't captured correctly, please let me know.

Appendix: Interview Schedules

Waves 3 and 4: Business Questions
Thank you for agreeing to take part in this interview, it will take about an hour and you can stop at any time. Your responses will be anonymous, and your participation is voluntary.
1. ID (randomiser/database) 2. Interviewer
3. Date 4. Phone/face-to-face
5. Name: 6. Are you the owner of the business?
7. Is your business a member of the XXX Local Business Association? Y/N/D. If NO, skip coloured questions. If YES, How long have you been a member? yrs Why did you join the Local Business Association (name – substitute throughout)? 8. In terms of your membership: How important is gaining new knowledge? (scaled: not =1, to extremely = 5) How important is socialising with other businesses? (scaled: ditto) How important is reducing uncertainty (scaled: ditto) 9. On a scale of 1='hardly ever involved' to 5='very involved' how would you rate your involvement with your local business association?
10. When you need to learn new things, how useful is learning from other businesses? (scaled: 1=not, 5=extremely useful). IF <3 goto Q13 11. (For those that answer >2): Which type of business is most useful to learn from? 12. (For >2 in Q10) I'm now going to ask you about learning from specific businesses. On the same scale (1=not, 5=extremely useful), how useful is learning from: Similar businesses to yours (same sector and size) Similar size businesses in other sectors Businesses that have been operating for many years Relatively new, rapidly-growing businesses Large businesses People you like (it doesn't matter what business they're in) Specialists in the field you're investigating Acknowledged business leaders

Appendix: Interview Schedules

Waves 3 and 4: Business Questions
Any I've missed? (name and level of usefulness)
13. On a scale of 1=not at all important, to 5 = extremely important, how important are the following for you in learning new concepts: Just getting the answer Clearly understood alternatives and consequences Having simple proof that it works Trial and error Investigating complex questions with others Reflecting on what has been learned Questioning the assumptions about why something works Questioning the values and norms that influence the issue at hand
14. Would you say that your Local Business Association values learning among members? Y/N/D Why do you say this?
15. Does the Local Business Association have information or knowledge-sharing sessions to help members learn better business practices? Y/N/D If yes, what sort of sessions?
16. Does your Local Business Association help to create practical experiences for members, for example site visits, practical workshops, joint projects? Y/N/D If YES, please describe… If YES, do you take part in these learning experiences? (scaled: 1=never, 2=rarely, 3=now and again, 4= frequently, 5=always) If >1 how useful do you find these activities (scaled: 1=not at all to 5=extremely) Comment
17. Does the Association encourage businesses to teach each other about environmental management? Y/N/D If YES, what sort of encouragement and what sort of practices?

Appendix: Interview Schedules

Waves 3 and 4: Business Questions
18. Have you worked with other businesses on joint projects, activities, tenders etc? Y/N/D If YES, please describe If YES, do you find this a good way of gaining new ideas? (scaled: 1=not at all to 5=very much)
19. If you need to find out something new, do you consciously build relationships with other people who have this information? Y/N/D 20. If YES, Do you build these relationships yourself, or do you like others to introduce you to someone who has the information? Self/Intro/Don't know
21. Think of business groups or networks that you're involved in (even informal ones like catching up with other business owners at the pub). Do you discuss business problems or challenges with these people? Y/N/D 22. If YES, how important is **regular contact** with these people to make you feel comfortable asking questions about your business challenges? (1=not at all, 5=extremely). Comment: 23. If NO, who do you discuss business problems with?
24. How important is practical learning (ie doing things with others) in helping you to understand and implement new ideas? 1=not at all, 5=extremely
25. On a scale of 1=not at all to 5=extremely: How innovative would you say your business is? 26. If >2, What new innovations have been introduced in the past 12 months? 27. What helps you be more innovative?
28. Think about situations when you've learned something really new from others, did you learn better when you trusted them, or when there was some friction? (trust/friction/don't know)
29. How important are good environmental practices to your business? (scaled: 1=not at all to 5=extremely important) Why do you think this? 30. What impact do you think small business as a group makes on the environment? (scaled: 1= none to 5= great impact)
31. Would you say that your Local Business Association values good environmental practices by its members? Y/N/D Why do you say this? 32. Is it up to the individual business, or is there a general view within the Association about what makes good environmental behaviour? Individual/Group

Appendix: Interview Schedules

Waves 3 and 4: Business Questions
33. Do you think that environmentalism is viewed any differently by businesses that are not members of the Local Business Association? Y/N/D Please explain
34. Do you think environmental management is a cost or a benefit to your business? Cost/Benefit/Don't know Why is this?
35. I'm going to read you some statements and want to tell me which statement best describes your business: (only one allowed) Doesn't care about meeting environmental compliance Just meets regulatory or industry compliance standards Exceeds basic compliance where there are cost benefits Significantly exceeds basic compliance in most areas, even if it costs money
36. I'm going to read you a list of influences and ask you to rate these according to the level of influence that each has on environmental practice in your business (1=no influence to 5=strong influence) Your own opinion about the environment Your suppliers' expectations about environmental practices Your customers' expectations about environmental practices Public opinion about your business Your family (including children) Your staff The Local Business Association (name) Other industry or trade associations Other businesses in your local area Is there another influence that I've not included? Pls name and give rating: 37. Of these, which is the greatest influence? (only one answer permitted)
38. How does your business measure the impact of your environmental actions? (Prompt for Environmental Management Systems, EcoMapping etc)
39. How useful are the following for environmental knowledge for your business: (scaled: 1=useless to 5 extremely useful) Talking to other business owners Listening to informed speakers on environmental management Reading detailed environmental information Site visits to other members' premises Having other members visit your premises Discussing environmental practices with knowledgeable leaders Reading e-mails about environmental activities Reading newsletters (if >2: Do you have a preference for electronic or printed newsletters? Y/N/D – if Y, which?)

Waves 3 and 4: Business Questions
40. Has your environmental management knowledge changed as a result of your membership with the Local Business Association?
41. Do you think your attitude toward environmentalism has changed with the increasing attention to climate change and drought? Y/N/D Please explain
42. Is 'just knowing' that an environmental problem needs to be solved enough to make you do something, or do you need other triggers to change environmental behaviour in your business? Just knowing/other Can you give an example:
43. Do you think that businesses that have good environmental practices are more innovative? Y/N/D Why?
44. Are you a member of any environmental groups (including AWARE, stormwater pollution prevention programs, industry programs, water catchment groups etc)? Y/N/D If YES, which groups:
45. That's the end of the questions, thank you for taking the time to be involved in the interview.

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