



Networking strategies for entrepreneurs: balancing cohesion and diversity

Networking
strategies

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Abstract

Purpose – The purpose of this paper is to explore how cohesive/diverse networks affect entrepreneurial activities. In particular, an interest is shown in how cohesion and diversity may affect entrepreneurial outcomes like survival, profitability, innovation and efficiency.

Design/methodology/approach – The paper organizes the literature and presents conclusions about the effects of cohesion and diversity using three stages of entrepreneurial activity: opportunity development, technology and organizational creation, and exchange.

Findings – At the opportunity stage, strong ties with entrepreneurs increase the likelihood of becoming one, but are associated with lower levels of innovation. Diverse ties increase self-efficacy and innovation. At the technology and organizational creation stage, most entrepreneurial teams are homogeneous whereas team diversity is associated with better organizational outcomes. Using strong ties to recruit potential employees provides price and commitment advantages, but may interfere with efficiency. At the exchange stage, entrepreneurs must strike a balance between weak (market based) and stronger (embedded) ties to gain preferential access to resources and customers, while maintaining diverse sources for information and market opportunities. Overall, cohesion through strong ties provides entrepreneurs with hard to find resources very early in the development of new ventures, but those resources are limited in scope and have a high cost. By contrast, diversity is more common and more important later in a venture's life cycle.

Originality/value – Guidelines are suggested regarding the best networking strategies at the different stages and in different instrumental areas, offering an overall evaluation of the evidence in the cohesion v. diversity debate. Directions for future research on the effects of networks on entrepreneurial outcomes are also provided.

Keywords Networking, Entrepreneurs

Paper type Literature review

Introduction

Since Granovetter's (1973) seminal piece on the strength of weak ties and Burt's (1992, 2005) work on the importance of relational diversity, "cohesion" and "diversity" have been a central focus of the entrepreneurship and network literature. Investigators have noted that cohesive networks, comprising strong ties, convey the advantages of solidarity and commitment. Cohesion comes with a potential cost, however, if it promotes homogeneity of outlook and limits access to diverse points of view. Investigators have noted that diverse networks, comprising members from highly varied backgrounds, facilitate access to wide-ranging sources of information and alternative viewpoints. Nonetheless, diversity comes at a potential cost to the extent



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that heightened heterogeneity creates governance problems that undermine entrepreneurial effectiveness. The paradox revealed by these contrasting claims has fostered some ambiguity in interpreting research results, raising the question of the conditions under which particular network configurations might be optimal in promoting entrepreneurial effectiveness. In this review, we take up the challenge of identifying some of the contingencies affecting the costs and benefits of networking strategies, drawing upon research findings from the past several decades. Our key concepts are defined in Table I.

Cohesion was an early theme in the networking literature because theorists claimed that it increased the chances of resource sharing and transfer between individuals (Coleman, 1988; Bourdieu, 1974). Theorists noted that strong ties could provide a sheltered space within which entrepreneurs could avoid the opportunism and uncertainty otherwise lurking in market-mediated transactions (Williamson, 1983; Ring and Van de Ven, 1992). Long-term relationships can enhance the benefits of strong ties, increasing the likelihood of further interaction. Increased frequency of contact, in turn, carries many benefits. Through frequent contacts, strong bonds develop, tacit knowledge grows, and each party develops some informal control over the other (Dekker, 2004; Jones *et al.*, 1997). Strong ties can act as go-betweens to other

	Definitions
Strong ties	Relationships with high emotional commitment and high frequency of contact, usually among socially homogeneous individuals
Weak ties	Relationships with low emotional commitment and low frequency of contact
Cohesion	Characteristic of a network indicating strong social relations among its members
Closure	Characteristic of a network indicating that all members are strongly and almost exclusively connected to each other
Diversity	Characteristic of a network indicating substantial variation in social characteristics among members
Cognitive capital	Shared system of meanings that enables individuals within a network to communicate and make sense of the information they receive
Embedded relationships	Relationships that although economic in nature (buy or sell) have some additional personal elements attached to them, like loyalty and sympathy. Usually implies a higher frequency of contact and a degree of commitment to that contact
Arms-length relationships	Economic relationship (market based) devoid of any social commitment or personal obligation
Absorptive capacity	Ability of an entrepreneur or firm to take advantage of the resources available through social contacts
Broker	Person who creates a link between two parties not otherwise connected to each other
Structural hole	Exists when persons to whom entrepreneurs are linked are not themselves connected to one another

Table I.
Basic concepts

people (serving as brokers) and thus create indirect links between entrepreneurs and the resources they need.

Diversity was another early theme in the networking literature, as theorists argued that it increased access to an extensive circle of information about potential markets, new business locations, innovations, sources of capital, and potential investors (Burt, 2005; Davidsson and Honig, 2003; Granovetter, 1973). By diversity, we mean ties to persons of differing characteristics and social locations, along a variety of dimensions: sex, age, occupation, socioeconomic status, industry, ethnicity, and so forth (Lin, 2001). For example, knowing individuals who perform a similar job but work in other industries provides entrepreneurs with access to potentially valuable knowledge about alternative routines and practices (McEvily and Zaheer, 1999; Zahra *et al.*, 2000). Even if entrepreneurs lack direct access to diverse others, they may still gain access to them via brokers (Burt, 2005).

Although “cohesiveness” and “diversity” are not necessarily antagonists at the conceptual level, social processes often put them in conflict. Given the nature of most opportunity structures and people’s personal preferences, individuals with similar backgrounds and personal characteristics are more likely to associate with one another than with dissimilar others (Blau, 1977; McPherson *et al.*, 2001). Indeed, because creating and sustaining strong ties requires substantial effort, most people only have five to 20 strong ties in their personal networks (Fischer, 1982), and most business owners report only three to ten strong ties (Aldrich *et al.*, 1989). In contrast, the number of weak ties seems almost limitless.

Therefore, to the extent that they can be strategic and reflexive about their own behavior, entrepreneurs face a dilemma of whether to invest their limited resources in a small number of strong connections, a large number of weaker ties, or something in-between. We mention “something in-between” because research suggests that there is no single solution to this dilemma. Rather than confirming that one type of network connection is better than the other, the literature has pointed out the contingent nature of networks’ values. It appears that the value of connections (and the value of cohesion or diversity) depends on the position of actors in social hierarchies, the number of competitors (Burt, 1997; Lin, 2001), entrepreneurs’ connections with brokers, and the specific instrumental actions performed.

To examine the various contingencies involved in the tradeoff between cohesion and diversity, we will use Bhavé’s (1994) three stage life-course scheme, based on three distinct and interrelated processes involved in the creation of new ventures: opportunity development, technology and organizational creation, and exchange. Each of these processes involves activities in which personal and inter-firm networks play an important role. In the opportunity development stage, social connections influence whether people develop an orientation toward creating their own businesses. At this stage, networks supported by previous experience affect how budding entrepreneurs scan their environment and search for opportunities. In the technology and organization creation stage, entrepreneurs seek partners, attempt to acquire material and other resources, and attract and organize employees. The exchange stage involves creating and maintaining relationships with customers, as well as other organizations. Our review will explore some of what we know about cohesive and diverse connections at each stage. Note that we use “stage” as an analytic construct, as activities often occur simultaneously across them.

Opportunity stage

In this section, we consider the role of networks in initially motivating people to pursue entrepreneurship. In addition, whatever their level of motivation and intentionality, entrepreneurs’ abilities to find opportunities and create innovative ventures depends in part on their social networks. We note that some opportunities are differentially available to entrepreneurs because of the unequal distribution of resources and other factors that can lead to “missed” opportunities. Table II summarizes the three main sections of our arguments.

Initial motivation and intentionality

Networks play an important role in whether people develop an interest in entrepreneurial activities, as well as in the acquisition of entrepreneurial skills. Some studies indicate a relationship between having entrepreneurial parents and an increased propensity toward self-employment (Matthews and Moser, 1996; Scott and Twomey, 1988). For example, Coleman (1988) wrote of social capital being transformed into human capital through socialization and role modeling. Cohesion within entrepreneurial families encourages individuals to develop attitudes, habits and perceptual models that make them more likely to become entrepreneurs (Kolvereid, 1996). Supportive strong ties also increase people’s motivations to start a business (Sequeira *et al.*, 2007). Research indicates that women benefit less from this process; sons of entrepreneurial parents are more likely than daughters to become entrepreneurs (Matthews and Moser, 1996). Aldrich and Kim (2007) noted that sons were much more likely to work in their parents’ businesses than daughters, although such work experience had a negligible impact on subsequent entrepreneurial activities for sons and daughters. In addition to parental ties, other strong connections to entrepreneurs, such as the support of friends and neighbors who own businesses, also increases someone’s probability of engaging in entrepreneurial activities (Davidsson

	Strong/cohesive ties	Weak/diverse ties
Motivation	Entrepreneurial parents increase men’s chances of becoming entrepreneurs Connections to non-entrepreneurs decrease likelihood of entrepreneurial action	Greater ties to entrepreneurs increase people’s positive attitudes and feelings of self efficacy For immigrants and women, lack of connections to mainstream economy and high level executives may increase the likelihood of entrepreneurship
Opportunity detection	Ventures with predominant strong networks of personal ties tend to be less innovative Cohesive communities and strong ties may stifle innovation and lead to missed opportunities	Entrepreneurs with diverse, instrumental ties tend to be more innovative Use of weak ties to monitor leads to imitation; use of weak ties to discuss ideas leads to innovation
Opportunity access	Strong ties to the political establishment in societies facing radical economic change or that lack formal mechanisms of entrepreneurial support have preferential access to opportunities	Indirect ties can increase access to resources

Table II.
Network effects in the opportunity stage

and Honig, 2003). By contrast, strong connections to non-entrepreneurs, and particularly strong connections to co-workers and colleagues, may reduce the likelihood of individuals leaving their jobs to create new ventures (Nicolaou and Birley, 2003).

Just as cohesion affects the development of entrepreneurial skills and orientations, so too can diversity in role models increase the chances that individuals will profit from experiences that increase their sense of self-efficacy. Individuals with entrepreneurial contacts generating a variety of entrepreneurial experiences, including but not limited to family members, tend to be more optimistic about their chances of becoming successful entrepreneurs (Erikson, 2003; Krueger, 1993). Such optimism may translate into a greater likelihood of transforming entrepreneurial intentions into ventures.

Under special circumstances, an entrepreneurial orientation can be provoked by the *absence* of ties, rather than their presence. Sometimes individuals who find their paths blocked in the traditional labor market turn to self-employment and venture creation as an alternative. For example, ethnic minorities facing discrimination by dominant majorities tend to create businesses that rely heavily on their ethnic contacts (Aldrich and Waldinger, 1990). Many women lacking the necessary connections find themselves blocked after climbing part way up the corporate ladder. Thus, some leave the corporate world to become entrepreneurs (Weiler and Bernasek, 2001). For these groups, entrepreneurship becomes not a matter of preference or orientation but rather a question of strategy. Facing limited choices in established organizations, they create their own.

Finding opportunities

Regardless of why entrepreneurs decide to create their own ventures, they must find or create opportunities. In many cases, entrepreneurs draw from events in their own lives as a source for these opportunities (Aldrich and Cliff, 2003). For example, some entrepreneurial mothers have started their own small businesses after finding nothing on the market that fulfilled their needs for appropriate clothing and accessories. Some people see entrepreneurship as a way to finance their hobbies (Parsons and Rose, 2004). In other cases, people learn about or are exposed to ideas through their ties to friends and acquaintances. One study found that around 50 percent of entrepreneurs identified ideas for new ventures through their networks of contacts (Hills *et al.*, 1997).

Traditionally, scholars emphasized creativity and innovation as being central to entrepreneurship, but several decades of research paint a rather different picture (Aldrich and Ruef, 2006). Most entrepreneurial efforts (leading to stable, self-sustainable organizations) yield simple replications of existing organizational forms (Aldrich and Fiol, 1994; Aldrich and Martinez, 2001; Gartner, 1985; Low and Abrahamson, 1997). The products and services offered are typically slight variations on what already exists, rather than drastically different. Indeed, radical innovation in entrepreneurship is an uncommon phenomenon. Humans are creatures of habit and entrepreneurs are no exception.

Whether new ventures are innovators or reproducers depends, in part, on the structure of entrepreneurial networks. Entrepreneurs may begin with identity-based networks comprising mainly strong ties to similar others (Greve and Salaff, 2003) or with more instrumentally constructed networks that contain many weak ties to diverse others (Hite and Hesterly, 2001). Ventures starting with networks centered around

strong identity ties tend to reproduce already existing business models (Sequeira and Rasheed, 2006; Zcan, 1995), while diverse ties (weak or strong) tend to promote innovation (Julien *et al.*, 2004). Cohesion may cause reproduction because of direct social pressures (i.e. the pressure to create a business similar to the family business), but it might also be related to the cognitive consequences of strong cohesive communities (Liao and Welsch, 2003).

Entrepreneurs who have strong identity-based networks accumulate “cognitive capital” (Nahapiet and Ghoshal, 1998), which provides them with a unique understanding of the needs and point of view of their communities. “Cognitive social capital” refers to a shared system of meanings that enables individuals within a network to make sense of the information they receive (De Carolis and Saporito, 2006). Cognitive capital enhances the detection of local opportunities. Members of cohesive communities, such as ethnic enclaves, are in unique positions to detect and seize opportunities to serve their local markets (Jack and Anderson, 2002). As an added advantage, strong cohesive communities can transfer industry-specific business knowledge to their members, particular newcomer immigrants. In ethnic communities, newcomers learn business skills through apprenticeships with other members of the same ethnic group (Waldinger, 1986), often leading to an ethnic group specializing in a particular industry (Waldinger *et al.*, 1990). In the same way, ethnic entrepreneurs are very likely to get information, ideas and advice from co-ethnic families and friends (Deakins *et al.*, 2007). This tendency toward reproduction is not a unique feature of ethnic communities. In general, strongly cohesive communities of any kind are social mechanisms of reproduction; they tend to foster imitation or, at best, very small incremental innovations.

Strong ties and the cognitive social capital implied in them can act as barriers blocking new information and can create disincentives for innovation (Edelman *et al.*, 2004; Jack, 2005). Missed opportunities due to cognitive social capital arise more frequently in strong, cohesive groups that limit the diversity and reach of entrepreneurial ties. Cohesive communities can drain resources from entrepreneurs, constrain their freedom of action, and enforce downward leveling norms that discourage ambition (Portes and Sensenbrenner, 1993). We must emphasize this interference is by no means a certainty; strong connections may help or hinder entrepreneurial efforts. Most research on networks and entrepreneurship has been biased toward the analysis of already existing ventures, which makes it difficult to find information on entrepreneurial failures.

One exception is a panel study in the Research Triangle Area of North Carolina that followed nascent entrepreneurs in the early stages of development, including those that eventually failed. The study indicated that too much reliance on strong ties diminished the chances of entrepreneurs transitioning from an idea to an actual start-up. It found that the greater the proportion of kin members in a nascent entrepreneur’s business discussion network, the lower the odds of that person actually starting a business (Renzulli *et al.*, 2000). Strong networks are the most beneficial when they provide resources, information and business opportunities while at the same time not binding the potential entrepreneur in terms of industry, geography or the application of new ideas (Kristiansen and Ryen, 2002; Wu, 1983).

In contrast, diverse networks and indirect ties create opportunities for boundary spanning and bridging ties and, as a consequence, for radical innovation. Successfully

innovative organizations have strong communications across departmental lines between people with differing points of view (Angle, 1989; Koberg *et al.*, 2003), and the same principle applies with regard to entrepreneurial learning. Diversity in learning is partially a function of the range of sectors through which entrepreneurs move. Diversity also depends on the number of “structural holes” in an entrepreneur’s network. Structural holes exist when persons to whom entrepreneurs are linked are not themselves connected to one another (White *et al.*, 1976). Ties can be bridges between sectors where a nascent entrepreneur currently has no direct ties (Burt, 1992; Burt, 2005). For example, an entrepreneur may have direct ties to a banker and an accountant, neither of whom knows the other.

Thus, cognitive social capital allows individuals to create bonding cohesive ties and diverse bridging ties; most people have learned specific cultural tools they can apply when developing contacts with strangers. However, individuals in less educated groups may have some difficulties in transforming cognitive social capital into bridging social capital. The transformation of cognitive social capital into diverse networks of bridging ties usually requires higher levels of human capital, a style of learning that emphasizes reflection and adaptability (Lee and Jones, 2008) and superior social skills (Baron and Tang, 2009).

Entrepreneurs with diverse networks and many weak ties are more likely to be innovators (Elfring and Hulsink, 2007), as are entrepreneurs who have contacts that go beyond their local environments (Cooke *et al.*, 2005; Cooke and Wills, 1999). Entrepreneurs who use their diverse ties to discuss abstract ideas tend to generate and adopt radical innovations, whereas those who still have diverse ties but only monitor their behavior tend to imitate others, just like their counterparts with less diverse ties (Ruef, 2002).

Access to opportunities

Social networks can help entrepreneurs find opportunities and ease preferential access to specific markets or niches. Research in social reproduction has shown how elites bestow preferential access to their close friends, who tend to be members of the same privileged social group (Bourdieu, 1974; Hartmann, 2000). The underlying processes of this preferential treatment exhibit the same dynamics as those in ethnic minority communities and professional associations. Individuals share opportunities with those who resemble them and to whom they have strong connections. Because elites have unique access to better resources, especially political connections, their network ties give them preferential access to opportunities that are not available to the general population of entrepreneurs. These “exclusive” opportunities contribute toward entrepreneurs locating niches in which they can establish their ventures.

Obviously, connections to the political establishment are an important source of opportunities for potential entrepreneurs. Connections become more important and more visible during the turmoil caused by shifts in political and economic systems (Manev *et al.*, 2005). The privatization of many economies over the last 30 years, including the collapse of socialist governments and institutions, has made political connections a key to accessing opportunities (Aidis *et al.*, 2008; Batjargal, 2003). Although privatization in theory was supposed to foster a meritocratic system in which market rewarded the most competitive actors, privileged entrepreneurs with strong contacts to key government officials have benefitted the most.

For example, during market transitions in China and Eastern Europe, former government officials and their relatives were able to leverage their connections with the state into successful entrepreneurial efforts (Clark, 2000; Rona-Tas, 1994; Tsai, 2005). The combination of weak capitalist institutions and well-connected entrepreneurs created what some researchers called “network capitalism” (Boisot and Child, 1996; Puffer and McCarthy, 2007). In network capitalism, connections are the most important resource. Such connections gain value through cohesion – exclusivity and strength – rather than diversity or information access.

Technology and organizational creation stage

In this section, we take up three questions regarding network cohesion and diversity at the organizing stage. This stage includes most organizational routines and practices, and therefore covers a myriad of activities. However, the literature on networks emphasizes three specific topics: team formation, capital accumulation and employee recruitment. First, to what extent do entrepreneurs lean toward cohesion or diversity in forming their teams? Second, how does network composition affect capital accumulation? Third, do the network principles affecting team formation also influence employee recruitment? Table III summarizes our main points in this section.

Team formation

Researchers now recognize the importance of teams in the creation of new firms, after decades of emphasis on entrepreneurs as individuals (Forbes *et al.*, 2006). Ventures founded by entrepreneurial teams tend to be more innovative than those with only one founder (Ruef, 2002) and larger teams are associated with higher levels of venture growth (Lee and Tsang, 2001). Representative studies show that truly solo entrepreneurs are not predominant. In both the Wisconsin and United States

	Strong/cohesive ties	Weak/diverse ties
Team formation	Preference for strong ties (e.g. spouses) and homogenous contacts in entrepreneurial teams	Diverse entrepreneurial teams in high technology industries associated with growth and survival
Capital acquisition	Strong ties unlikely to provide capital in Western countries. By providing cheap services, strong ties allow “bootstrapping” Indirect ties through family members may be a source of capital For small ventures, rotating credit associations formed by strong ties are an important source of capital in developing nations	Diversity in networks helps entrepreneurs find funding at different stages in a venture’s life cycle Entrepreneurs with diverse capital networks receive better prices for their equity and higher performance Success within rotating credit associations can increase the reach and diversity of members’ ties
Employee recruitment/selection	Hiring family members creates pricing and commitment advantages, but may decrease efficiency and increase conflict	Diverse employees can provide informational advantages and bring complementary skills

Table III.
Network effects in the technology and organizational creation stage

samples studied by Reynolds (1994), respondents were asked, “counting yourself, in total how many people are active in trying to start this business?” The average number mentioned in both samples was 2.2 persons, and about half the nascent entrepreneurs said they had “organized a startup team”. About half of startups are solo efforts, about a third are based on people related by marriage or kinship, and the rest are teams of unrelated individuals (Reynolds and White, 1997). A subsequent random sample of the general population of the United States, collected between 1998 and 2000, confirmed that around half of all entrepreneurs were starting their ventures with the help of others who will own equity in the business. Many of them also recruited helpers who will not own equity but who play an important role in the startup (Ruef *et al.*, 2003).

Strategic theories stress that entrepreneurs should balance instrumental and expressive goals in the selection of teams. On the rational-instrumental side, theorists urge entrepreneurs to consider the complexity of entrepreneurial endeavors and include a variety of work experiences and complementary skills. On the expressive side, theorists recommend that entrepreneurs consider emotional factors, looking for individuals with whom they are likely to have good relationships and trust, characteristics normally associated with strong cohesive ties (Forbes *et al.*, 2006). Academic courses on business plans and team creation tend to emphasize rational-instrumental principles and downplay the socio-emotional and expressive side.

However, a study by Ruef *et al.* (2003) found entrepreneurs in fact do not follow academic guidelines, favoring instead interpersonal attraction when selecting partners. Their study found that spouses are an overwhelming majority of partners, and that entrepreneurial teams tend to be homogeneous in terms of gender (in cases other than the spouse), ethnicity, social status and occupation. The trend toward homophily may be stronger in certain kinds of ventures than others. For example, high technology ventures tend to be somewhat more oriented toward diversity in team formation. High technology firms tend to be founded by teams who recruit members they have met in previous jobs and who have experience in diverse functional areas (Feesser and Willard, 1990; Harrison *et al.*, 2004a). In high-tech industries, diversity of experience on founding teams increases the chances of survival and growth (Colombo and Grilli, 2005; Eisenhardt and Schoonhoven, 1990; Roure and Maidique, 1986). However, other studies have uncovered instrumental reasons why entrepreneur may prefer homogeneous teams. Members that are different from the rest of the team may create potential for conflict, particularly in new member additions (Forbes *et al.*, 2006). Bonding capital (based on solidarity) among team members appears to be a pre-condition if entrepreneurs wish to take advantage of their weak ties (Nerkar *et al.*, 1996; Newell *et al.*, 2004). Therefore, balancing strong ties in founding teams where members have a variety of weak ties may be a good strategy for entrepreneurs.

Capital acquisition

Modern societies offer a variety of institutionalized ways in which entrepreneurs can finance their start up efforts. In general, entrepreneurs can get initial capital through equity (investors buying rights to ownership) or through debt (loans from individuals, banks, or other organizations). The difference is that equity investors share part of the risk with the entrepreneur in exchange for potential future profits, whereas loans have to be guaranteed by some kind of collateral, such as personal assets. Risks and rewards, for both entrepreneurs and investors, are different for equity and loans, so it is

likely that networking strategies and their outcomes are also different. In this section, we concentrate on the role of networks for capital acquisition when investors or lenders are providing equity capital. Subsequently, in a section on inter-organizational relations, we will discuss capital acquisition through the traditional system of loans in the banking system.

Most nascent entrepreneurs lack experience, do not have a history of prior success, and are unable to provide collateral for loans (Cassar, 2004). Thus, at the beginning of the start up process, obtaining capital requires convincing someone outside the traditional banking system to share the high risks of starting a new venture. At least in theory, entrepreneurs should be more likely to obtain initial financial resources from strong and cohesive ties, as the creation of new ventures with high risks of failure requires considerable trust. Individuals with strong ties to entrepreneurs might provide personal loans or invest in startups; either way, they are sharing part of the risk of venture failure. Do strong ties pay off with regard to raising funds for a startup? The literature indicates that this type of risk sharing is less common than network theory would indicate. For example, strong ties with family members do not often translate into financial support from them. Nationally representative data, as well as community studies show that – with the possible exception of spouses – only founders from a handful of ethnic minority groups can count on financial support from family members (Aldrich *et al.*, 1997; Bates, 1997; Zimmer and Aldrich, 1987).

However, Steier and Greenwood's (2000) case analysis showed that although family members may not represent a direct source of funding, they are often an important source of indirect ties to other individuals capable and willing to inject financial capital. Some studies suggest that shrinking family size might be hampering the ability of organizational founders to secure financial capital, because a smaller number of family members also translates into a smaller overall number of indirect ties through them (Aldrich and Cliff, 2003). Nevertheless, family members and other strong ties may also provide indirect help in the capital acquisition process through a mechanism called "bootstrapping".

One bootstrapping strategy involves eliminating or decreasing the need for capital by acquiring resources free or at a very low cost (Harrison *et al.*, 2004b; Brush, 2008). Although kin and other strong contacts may not directly provide money, they are most helpful when their support is more role-appropriate, such as in providing personal services (Kim *et al.*, 2009). In normal business situations, kin appear to help only when what they supply corresponds with their areas of competence (Renzulli and Aldrich, 2005). The money saved by the services and competences provided by strong ties can then be funneled to other areas of financial need in the venture process. In particular, strong ties help firm performance by allowing strategies such as withholding salary from family members and cross-subsidizing the new business from other family businesses (Jones and Jayawarna, 2010).

Any connections to investors, strong or weak, direct or indirect, translate into better chances of capital acquisition (Jenssen and Koenig, 2002; Shane and Cable, 2002). Venture capitalists are more likely to lend money to entrepreneurs to whom they were previously connected and that tendency is even more pronounced among angel investors. However, venture capitalists rarely invest in startups, preferring instead to wait until a new firm has accumulated a record of success sufficient to justify an investment. By contrast, angel investors are much more amenable to investing in

startups. (Angel investors are wealthy individuals who provide funding to ventures in amounts that would be too small for venture capitalists). As individuals, angels tend to invest in companies where they know the owner from previous interactions (Steier and Greenwood, 2000). In voluntary investment associations, angels tend to invest in companies that can convince a few members of their potential, a process involving a great deal of informal communication among members.

Although any contact with investors is good, in the end diversity seems to enhance entrepreneurs' chances of acquiring financial resources. Over their life course, entrepreneurial ventures may require resources at many points to expand or consolidate their operations. Therefore, although individuals in the pre-venture personal network of the entrepreneur may provide initial capital, continued access to capital requires that entrepreneurs expand and diversify their network of potential investors. Diverse capital networks are associated with positive outcomes, such as increasing the chances that firms will find adequate funding at later stages in their development (Steier and Greenwood, 2000), receive higher price for the equity they provide to venture capitalists (Hsu, 2007), and have better performance (Florin *et al.*, 2003). However, the returns to diversity may be culturally specific, differing between countries with well-developed financial markets and those characterized by network capitalism. For example, in China, strong ties are instrumental in providing entrepreneurs not only with access to capital, but also with more favorable terms in their contractual arrangements with investors (Batjargal and Liu, 2004). Some have argued that this advantage stems from the collectivist nature of Chinese culture, where commitment is valued over opportunity (Zhixing and Tsui, 2007).

In addition to traditional investments, immigrants in developed nations and entrepreneurs in developing countries can obtain capital through rotating credit associations (Biggart, 2001). In this scheme, a group of participants makes a commitment to contribute a certain amount of money at each group meeting – which can be weekly, monthly, or another period – for as many meetings as there are members in the group, with a randomly selected member at each meeting receiving the full amount collected by the group. These associations are usually formed by kin and close friends, and they rely on trust and reciprocity of strong ties, making default “almost unthinkable” (Coleman, 1990, pp. 306-7; Biggart, 2001).

Microcredit borrowing groups, similar to rotating credit associations, depend on pre-existing cohesive social relations. The microcredit system begins with the formation of small groups of borrowers who use the group as an alternative form of collateral because they lack traditional financial collateral (Anthony, 2005). Individuals submit loan applications to the group, which denies or approves them. Only after two members make a pre-determined number of on-time payments is credit then made available to the next two members of the group. The chairperson of the group is the last one to receive a loan (Dowla, 2006). All group members lose access to credit if one of them defaults.

Incentives for repayments of loans are based almost exclusively on social ties and cohesion. First, borrowers develop a sense of reciprocity with the banking institution; as the bank demonstrates trust in the group, individuals are bound to reciprocate that trust (Narayan *et al.*, 2000). Higher levels of cooperation and interdependence among the members reduce the risk of defaults, while a strong sense of group identity and the use of sanctions increase the longevity and the borrowing levels of the group (Anthony,

2005). Social capital has proved to be a very effective form of collateral, as most microcredit banks report very high repayment rates, well above the levels of commercial banks (Woolcock, 1998). Furthermore, the creation of borrowing associations helps members develop more social capital, which in turn allows them to improve their lives and their businesses (Dowla, 2006).

Employee recruitment and selection

Using networks to recruit employees is a good strategy, particularly for new or small businesses that may have problems attracting talent (Leung *et al.*, 2006). When it comes to recruiting employees, many entrepreneurs rely on family members, whether paid or unpaid. Aldrich and Langton (1997), for example, found that 25 percent of the firms in their Canadian sample employed family members at the time of start-up. Although not restricted to start-ups, Heck and Trent's (1999) study of business-owning households provided further data on the importance of family members as a supply of human resources. About 73 percent of the business-owning households in their sample had at least two residential household members working in the business, approximately 24 percent had one or more employed relatives working for pay who did not live in the household, and 27 percent had non-household relatives who were unpaid workers. Given the extent to which business owners rely on family members as a source of employees, shrinking family size complicates the human resource mobilization process for many organizational founders (Aldrich and Cliff, 2003).

Family employees carry advantages rarely found when employees are hired through weak ties. Family members usually have higher levels of commitment to a business and may have extensive tacit knowledge of the industry. They tend to be more reliable and willing to make sacrifices in terms of time, money, and effort with long-term goals in mind (Anderson *et al.*, 2005; Stewart, 2003). However, using strong family contacts as employees may cost entrepreneurs dearly with regard to acquiring information from external sources. Generally, employees are instrumental in providing information, especially market information (Jack, 2005). Given that hiring via strong connections tends to create a homogeneous workforce, entrepreneurs may find that the skills and information provided by family employees are limited. Diverse employees with a variety of experiences can better help new firms build bridges that link the activities of the company with external actors and therefore let them take advantage of structural holes (Jones, 2005).

Moreover, in the end, developing relationships that are not based in the market logics of efficiency and merit may undermine organizational performance if family connections are given priority over experience and capability. Family considerations may undermine or preclude the development of a system linking performance and rewards (Ram and Holliday, 1993). By favoring family, entrepreneurs may also create conflict between kin and non-kin employees (Whyte, 1996). Not surprisingly, early in the lifetime of new ventures, when resources are scarce, entrepreneurs favor cohesion and similar values and ideas in their employees, but when they enter growth phases, switch their priority to finding complementary competences (Leung *et al.*, 2006).

Exchange stage

In this section, we move from the level of the personal networks in which entrepreneurs are embedded to the relationships formed by new ventures as they exchange resources

with suppliers, customers, and others. We note the trade-off between transactions conducted between strangers at arms' length versus those embedded in long-term relationships. Table IV summarizes the arguments in this section.

Suppliers/inter-firm alliances

Networks and alliances with other organizations provide entrepreneurs with a myriad of advantages. They increase the likelihood of innovation through facilitating the exchange and diffusion of technology and information (Fukuyama, 1995; von Hippel, 1987; Lipparini and Sobrero, 1994; McEvily and Zaheer, 1999; Robertson *et al.*, 1996). They also provide potential cost advantages for entrepreneurs (Starr and Macmillan, 1990), increase flexibility and production capacity to meet the needs of clients (Pyke, 1992; Schmitz, 1995; Strambach, 1994), facilitate cooperation and governance (De Toni and Nassimbeni, 1995) and promote growth (Lechner and Dowling, 2003; Stearns, 1996; Zhao and Aram, 1995). By contrast, businesses that do not develop diversity in their networks tend to plateau or decline, even in non-knowledge related endeavors (Chell and Baines, 2000).

Not surprisingly, governments all over the globe engage in public policies designed to facilitate networking among entrepreneurs (Malecki, 1993). Governments support the creation of clusters or industrial districts under the assumption that geographic proximity creates cooperation (Becattini, 1990; Lawson and Lorenz, 1999; Maskell and Malmberg, 1999; Maskell, 2001). In clusters, the state is instrumental in building institutions, promoting inter-organizational associations, and developing collective service centers (Humphrey and Schmitz, 1996; Tambunan, 2005). They may also foster "broker" individuals or organizations that facilitate connections between actors in an industry (Ceglie *et al.*, 1999; Kilpatrick *et al.*, 2007).

Inter-organizational relations can be characterized as relatively weak, compared to those with kin and close friends. However, even weak relationships require certain levels of trust to facilitate interaction and information exchange (Levin, 1999). This trust can be based on an affective evaluation of the benevolence of a contact or on a cognitive appreciation of someone's competence (Schoorman *et al.*, 2007). Reliance on a particular type of trust may depend on the developmental phase of the venture, with benevolent trust being important earlier in the venture's lifecycle and with cognitive trust becoming more important over time (Smith and Lohrke, 2008). Trusted weak ties

	Strong/cohesive ties	Weak/diverse ties
Inter-organizational relations	Create preferential access to resources If hierarchical, reduce organizational efficiency	Offer broad access to information and potential for innovation Need to be based on common personal interests
Customers	Provide an initial basic customer based, particular for ethnic minorities, but may have limited resources May demand preferential treatment and hold venture hostage	Provide potential opportunities for expansion Most profitable opportunities arise from connecting previously unconnected partners, which requires diversity

Table IV.
Network effects in the exchange stage

appear to offer the best results for acquiring new and useful information (Levin and Cross, 2004). Because of the importance of personal trust for even weak relationships, it appears that the best networks tend to satisfy instrumental needs while simultaneously appealing to the personal interests of entrepreneurs (Huggins, 2000; Ingram and Roberts, 2000).

Entrepreneurs can develop relationships with members of other organizations by participating in voluntary associations (Spence *et al.*, 2003) and through engaging in market transactions. Contacts created through voluntary associations, such as industry organizations, civic clubs, networking events, breakfast clubs and chambers of commerce, help owners overcome the limitations of their original more identity-based networks. Membership in a mix of voluntary associations increases the diversity of contacts for entrepreneurs (Davis *et al.*, 2006). Zuckerman and Sgourev (2006) argued that industry peer networks, consisting of firms in the same industry but not in the same competitive market area, enabled owners to learn about best practices and practical applications in a cooperative context. Such learning is analytically distinct from that posited to occur because of firms responding to competitive pressures in capitalist markets, leading us to our next topic: the value of embedded relationships.

Arms' length versus embedded transactions

Normal business transactions not only might make a founder's network more diverse but also lead to potentially stronger relationships. In research on market transactions and inter-organizational relations, investigators often use different terminology than network theorists. Instead of contrasting weak and strong ties, they compare "arms-length" with "embedded" transactions (Granovetter, 1985; Granovetter, 2005). Arms-length transactions refer to interactions between economic agents that are primarily based on instrumental considerations and lack any kind of long term view or investment (Dyer and Singh, 1998). In other words, they lack social cohesion. In contrast, embedded connections are characterized by repeated interactions, long-term goals, and a sense of mutual obligation. Embeddedness facilitates day-to-day business operations. For example, suppliers are more likely to provide credit (a form of working capital) to entrepreneurs with whom they have personal connections (Fafchamps, 2000).

How do embedded relations develop? We note a difference between personal networks, formed by individuals with direct relationships to an entrepreneur, and the extended network of relations between organizations and the outside world (Dubini and Aldrich, 1991). Networks among organizations are based either on institutionalized forms of behavior that create a hierarchy or on market transactions with economic concerns. Both market and hierarchy interactions can create personal relations (Adler and Kwon, 2002). Repeated contact with organizations will mean contact and cooperation with the same subset of managers, and this interaction helps build personal relationships (Casson and Giusta, 2007; Johannisson, 1996). These social relationships then affect entrepreneurial ventures by changing the frequency, intensity, and honesty of the dialogue among managers (and among managers and entrepreneurs) on priority tasks (Charan, 1991; Zeffane, 1995). Embeddedness thus strengthens relationships among individuals involved in market transactions.

A few empirical studies indicate that a winning strategy in inter-organizational relations is to have a combination of embedded and arms-length relationships. For example, in his study of the apparel industry in New York, Uzzi (1997) found that high degrees of embeddedness between an organization and its suppliers improved the survival capabilities of these organizations. However, too much embeddedness had negative effects on survival chances. A study of entrepreneurs' relationships to banks found a similar pattern. Embeddedness increased the chances that a bank would take the risk of issuing loans (Uzzi, 1999); in addition, firms with embedded relationships with banks obtained discounts and avoided late fees (Uzzi and Gillespie, 2002). However, arms-length relationships provided information about interest rates. More information allowed entrepreneurs to make judgments about the relative desirability of one loan versus another (Uzzi, 1999). Uzzi and Lancaster (2003) argued that firms combining arms-length and embedded ties are likely to have more frequent incremental and radical innovations than firms favoring only one type of transaction. A balance of strong and weak ties appears to be more important once the phase of nascent entrepreneurship is over and firms are firmly established (Evald *et al.*, 2006). In contrast, new firms in relatively young industries look for cooperation to reduce uncertainty, rather than exploiting structural holes for gain (Walker *et al.*, 1997).

The study of inter-organizational networks has identified two other concepts applicable to entrepreneurship research: absorptive capacity and power imbalance. Absorptive capacity describes a condition in which even if two entrepreneurs have similar connections in terms of cohesion, diversity, and resources, they have dissimilar capacities to take advantage of them (Cohen and Levinthal, 1990; Dyer and Singh, 1998; Lane and Lubatkin, 1998; Lane *et al.*, 2006). Entrepreneurs lacking the necessary knowledge and the capacity to use their contacts' information will not benefit very much from their ties. Cooperation with other firms will only increase corporate success if the founders or management teams of firms under consideration have extensive know-how in the area of co-operation (McGee *et al.*, 1995). Therefore, entrepreneurial experience, social competencies, level of university education, prior knowledge in the area and other factors determine how much benefit an entrepreneur can derive from existing ties (Shane, 2000; Witt, 2004; Zaheer and Bell, 2005).

Embeddedness has different consequences, depending on the relative power of each actor in the relationship. Actors that are more powerful achieve levels of control in relationships that allow them to benefit more than weaker actors. In addition to a lack of autonomy, less powerful actors may also become dependent in terms of resources and clients (Kogut, 2000; Walker *et al.*, 1997). Firms that are more centrally located within a network, and therefore have direct access to greater numbers of different partners, will obtain greater benefits from their networking activities (Soh, 2003).

Despite power imbalances in their relationships, small and new firms that lack prestige or resources still benefit from affiliating with well established and large organizations, as some of the high status transfers to them (Benjamin and Podolny, 1999; Gulati and Higgins, 2003; Stuart, 2000; Stuart *et al.*, 1999). Some studies show, however, that relationships that are more equal, democratic, and open produce better results for all involved parties, as opposed to only benefitting the central firms (Owen-Smith and Powell, 2004). A study of Chinese business groups found that hierarchical relationships with other "sister" organizations decreased the ability of firms to perform effectively, whereas firms belonging to relatively democratic

non-hierarchical groups had higher levels of efficiency and performance (Keister, 1998). This relationship between efficiency and democratic governance may arise because less democratic business groups funnel resources from one company to another, obscuring the transparent trail needed for accountability (Ferris *et al.*, 2003).

Customers

The relationship between entrepreneurs and their customers is, in the end, a market transaction: goods or services exchanged for monetary compensation. However, social dynamics affect the exchange process. Relationships between entrepreneurs and their customers vary in their degree of embeddedness, from one-time market transactions to continued exclusive use of one particular entrepreneur. Customers in general face the problem of imperfect information; prior to a transaction they do not know the quality of the good or service they are buying (Williamson, 1985). Therefore, they use mechanisms such as reputation, brand image, and social connections as proxy variables that might assure quality (Podolny, 1993; Podolny, 2001). For example, immigrant groups support their compatriots by buying their goods and services not only because their goods and services have a higher probability of being tailored to their needs, but also because of a sense of solidarity (Boissevain *et al.*, 1990).

Customers may assume that embeddedness and positive social relations allow them to fill gaps in their information regarding price and quality, thus enabling them to avoid problems accompanying purely market-based transactions (Geertz, 1978; Phalen, 1998). Using networks ties as a guide to choosing transaction partners is particularly likely in major transactions. A substantial percentage of major purchases like cars, homes, legal services, and home maintenance services occur between friends and family members or through indirect ties formed via family members and friends (DiMaggio and Louch, 1998; Röper *et al.*, 2009). Particularly in emergent economies, in the absence of strong institutional constraints (Chuang and Lin, 2009), connections not only solve the problem of imperfect information but also help curb opportunism.

From the point of view of the venture, using social capital can provide an initial base of resources, among them customers (Baron and Markman, 2000). However, relying on strong ties for customers may have negative consequences for organizational performance, whereas diversity may help it. For example, relationships with customers provide a source of information for learning during the creation of new products (Parsons and Rose, 2004). Diversity in customer relationships may then translate into innovations. Embedded relationships with customers facilitate knowledge transfer, but high levels of trust, a potential sign of over-embeddedness, decrease that transfer (Yli-Renko *et al.*, 2001). In an extreme case, firms that depend on only one client seem to have a diminished absorptive capacity (McEvily and Marcus, 2000).

Although family, friends and co-ethnics do provide an easily reached pool of customers, relying on them as the only or main source of customers can limit organizational survival and success. First, norms of reciprocity create obligations between entrepreneurs and their customers (Lyon, 2000; Williamson, 1983; Yamagishi *et al.*, 1998). Entrepreneurs might feel compelled to provide the best quality/price combination available, cutting their profits (DiMaggio and Louch, 1998). Reciprocity sometimes means that customers demand preferential treatment and favors in return for their business (Boissevain *et al.*, 1990). Thus, in some cases, preferential treatment means a loss of resources for entrepreneurs (Portes and Sensenbrenner, 1993).

A second issue with relying on strong relationships for customers stems from the limited resources available in the groups that are favored. Particularly in socially disadvantaged groups, those who have strong connections to entrepreneurs often have limited resources, reducing their value. Strong connections can therefore be barriers to capital flows (Dasgupta, 2003). This situation of low resources and strong connections acting as barriers often arises within ethnic groups and communities in the developing world (Boissevain *et al.*, 1990; Kristiansen and Ryen, 2002).

A third argument against over-reliance on strong community ties for a customer base stems from the relationship between market structure and profitability. The most profitable business opportunities come from brokerage: connecting previously unconnected partners (Burt, 2005). For entrepreneurs, brokerage translates into providing goods or services to customers outside their immediate network. Entrepreneurial success thus depends, to some extent, on the capacity of entrepreneurs to develop bridging social capital (Woolcock and Narayan, 2000). Because of the dynamics discussed earlier, bridging social capital is more likely to come from weak ties. Therefore, to expand customer networks beyond their immediate community and maximize the potential profits of those relationships, entrepreneurs need to learn how to develop and maintain weaker ties (Turner, 2007).

Transnational entrepreneurs

Transnational entrepreneurs create firms that engage in regular contact with entities in foreign countries, making those firms dependent on these contacts for success. Transnational firms have networks of clients, suppliers or alliances that cross national borders (Portes *et al.*, 2002). These entrepreneurs tend to be immigrants who maintain ties to their home countries, as well as former immigrants who return to their home countries and continue to have relationships with contacts in their former host countries. Although these types of entrepreneurial efforts are not new, the last wave of globalization has made them more important (Faist, 2000).

Transnational entrepreneurs are embedded in complex international networks that facilitate successful cross border business operation (Wai-Chung Yeung, 2002). Transnational entrepreneurs connect developing countries to Western economies, fostering industrial upgrading and resource transfer (Styan, 2007). These networks create value precisely because of their geographical dispersal and transnational business circuits (Wong, 2004). Immigrant professionals are particularly good at detecting opportunities in their home countries that have not been explored by local entrepreneurs (Saxenian and Sabel, 2008). Transnational innovation networks are especially likely in high technology industries (Coe and Bunnell, 2003).

Although our recommendations for future research will be explored in the conclusion section, we must point out that research on the role of networks for transnational entrepreneurs is behind the other network research mentioned in this review. The field has very limited information about the composition and dynamics of transnational networks, particularly compared to their local counterparts. Given global trends in communication and transportation technologies, the creation of social ties – strong or weak – is no longer limited to local contexts (Coe and Bunnell, 2003). Faist (2000) theorized that transnational social spaces involve the strong and dense circular flows of persons, goods, ideas, and symbols, which would imply the presence of strong ties. Future research will need to explore the different configurations of transnational

networks, the effects of these configurations on the achievement of entrepreneurial goals, the risks they imply, and the resources needed to maintain them.

Conclusions

Our review of the literature concerning the value of diverse versus cohesive networks and contacts indicates that such value depends upon a variety of factors. In this section, we will summarize what we have learned about various contingencies and then turn to a few suggestions regarding possible research projects that follow up some issues we have uncovered.

Summary of our findings

Based on our review, we can offer a few generalizations. Cohesion through strong ties does appear to provide entrepreneurs with hard to get resources very early in the development of new ventures, when entrepreneurs have very few resources of their own and have not yet developed their own proficiency. Cohesion also appears most valuable in societies that have very scarce institutional avenues for supporting entrepreneurial activities.

Despite their undisputable value to entrepreneurs, strong ties carry two potential disadvantages. First, by nature they are limited in scope. Of the many different resources and unique activities entrepreneurs need, strong ties provide circumscribed help, especially when those strong ties are kin. The second disadvantage of strong ties is their cost. Strong ties require high levels of reciprocity, which means that entrepreneurs need to offer some sort of repayment, either economic or emotional or both, for the help that they receive.

Although diversity provides advantages at the beginning of the entrepreneurial process, it appears to become more important as well as more common at later moments in the process of venture formation. Diversity carries three advantages. First, diverse ties of any kind increase the probability that entrepreneurs will find a helper whose resources and skills fit the entrepreneur's needs. Second, diverse ties translate into more diversity of behaviors and information, as well as weaker pressures for conformity, which fosters innovation. Finally, because there is a limit to the number strong ties that any entrepreneur can maintain, weak ties become more predominant in the development of diverse networks. Weak ties mean fewer reciprocity commitments, which limit resource demands by contacts on entrepreneurs and their firms.

Issues for further research

Our review has emphasized the strategic uses of networks by entrepreneurs, focusing on contingencies affecting networking at three stages of entrepreneurial activity: opportunity development, technology and organizational creation, and exchange. By using the term "strategic", we have necessarily implied that entrepreneurs do not simply work with the conditions of networks as they find them, but rather that they consciously play a role in creating and reshaping them. Rather than accept this assumption at face value, we propose research on two related issues: how much autonomy and flexibility do entrepreneurs actually exercise with regard to networks, and can entrepreneurs really reach beyond their direct ties to realize the full value of networking through indirect ties? Are efforts to increase networking by business associations and non-entrepreneurial entities like governments, universities and

religious institutions (Koning, 2009) capable of having an impact on entrepreneurial outcomes?

Our first recommendation to answer these questions concerns going beyond static analyses. Discovering the extent to which entrepreneurs really have capabilities that enable them to create new and transform existing networks requires dynamic analysis. By contrast, most of the network studies we uncovered for this review were based on either cross-sectional data or data collected over a very limited time span. Although static cross-sectional analyses give investigators valuable information about the structure of individuals' and ventures' social networks, they cannot really convey a sense of the extent to which ties remain stable over time. Moreover, developing applicable knowledge about networks requires that we know something about the pacing, rhythm, and time scale of the effort required. For example, we have noted that most entrepreneurs have a very small number of strong ties but a very large number of weak ties. Based on how we have described strong ties, we can imagine that such ties are highly resistant to change and that any changes take place over extended periods. If so, the cost of trying to transform an existing network of strong ties, perhaps by replacing some of the strong ties with formerly weak ones, might not be worth the effort.

Consider the implications of adding a time dimension to several other key concepts we have reviewed: cognitive capital and opportunity recognition. Acquiring new cognitive capital can be quite valuable if it leads to new systems of meaning that enable entrepreneurs to recognize opportunities heretofore hidden, simply because they were not part of an entrepreneur's cognitive schemata (Aldrich and Ruef, 2006). Ordinarily we think of learning new systems of meaning as requiring rigorous socialization, such as through formal education, apprenticeships, or extensive trial and error learning. Furthermore, one of the dominant perspectives in organization studies these days, neo-institutional theory, assumes that people's cognitive categories are deeply rooted in their location within institutional constraints and thus difficult to change. Accordingly, there are reasons to be skeptical about claims that entrepreneurs can strategically acquire new cognitive capital leading to better opportunity recognition. How might we research this issue?

Evidence for network stability and change requires research that follows people in new ventures over time, and we envision more resources devoted to at least four different kinds of projects. First, we propose more "fully ethnographic" (Hallett and Ventresca, 2009) projects of the kind that Jack (2005) carried out in her study of the use and activation of strong and weak network ties. Such research involves field study over periods long enough to allow investigators to observe ties forming and breaking, as well as the reasons for such changes. Quite a bit of ethnographic research on entrepreneurship has accumulated in recent decades and we suggest investigating whether it might contain information on network tie formation or transformation (Ram, 1994; Down, 2006; Holliday, 1995). Second, we propose more dynamic panel studies, such as the projects carried out in Sweden and the United States and now being replicated in other countries, called the Panel Study of Entrepreneurial Dynamics (PSED) by American investigators. Unfortunately, data on networks is quite sparse in these studies, but the model they offer would permit enough repeated observations of entrepreneurs' networks to allow tentative inferences about the stability of ties.

Third, social psychologists have been studying social relations in laboratory studies for many years, including research on power dynamics in simple networks (Cook and

Emerson, 1978; Yamagishi and Cook, 1993). For some reason, entrepreneurship researchers have shied away from laboratory studies, even though they would permit the most controlled studies of tie formation and dissolution. Fourth, simulation projects have slowly grown in importance in organization studies (Lomi, 1995), primarily because they permit agent-based modeling of complex activities that are very difficult to study “in the wild”. As we accumulate more information from ethnographic studies, as well as survey projects, we will have data available to create more realistic parameter settings that enable simulation studies to shed light on real-world entrepreneurial behavior.

A second major recommended line of research involves indirect ties. We have noted, at several points in our review, that the greatest value comes from indirect ties, but actually most research on social networks has focused on direct ties. The greater value of indirect ties stems partly from the fact that there are simply more of them, but more important, indirect ties link entrepreneurs to people who are otherwise mostly invisible to them. Learning more about indirect ties requires that we pay more attention to the role of brokers and how that role is played (Burt, 2005). We note that both strong and weak ties can play the role of broker, as the central question is not what resources the brokers themselves control but rather what are the resources controlled by people to whom they are linked. We found two studies that explored the role of indirect ties on resource acquisition. In their study of high-technology startups in Singapore and Beijing, Zhang *et al.* (2010) found that entrepreneurs can successfully use referrers to which they have only weak ties as long as those referrers have strong ties to resource owners. Another study found that referrers and other stakeholders conveyed important symbolic information about the capabilities of entrepreneurs to those with resources (Zott and Huy, 2007). Both studies indicate the potential of further research on indirect ties and their role in resource acquisition.

Given their importance, why is there so little research on brokers and indirect ties? We think the relative neglect of brokers and indirect ties stems from the significant difficulty involved in trying to find them. Most survey projects on entrepreneurship question individual entrepreneurs and asked them about their direct ties. By definition, it is unlikely that entrepreneurs will have first-hand knowledge of the characteristics of indirect ties, because those people are only in their networks via their connections to one of their direct ties. In short, if a resource provider or important contact were connected to the people interviewed, they would probably be listed in the direct tie set obtained through questioning. Thus, the best we can hope to accomplish in interview projects is to create lists of direct ties who could, in turn, be followed up and queried about their own direct ties. Such questioning would thus give us a simple map of all the ties one-step removed from the focal entrepreneur who was questioned in the initial round of interviewing. However, obtaining this information requires we overcome two obstacles: concerns about privacy on the part of the entrepreneurs interviewed in the first round, and the substantial costs involved in trying to track down the persons who are listed as direct ties and then interviewing them with a question list similar to that used in the first round of interviews. As teams begin about half of all startups, researchers cannot be content with interviewing only one member of the team. Instead, to obtain a complete picture of a new venture’s networks, all the founding members must be interviewed.

Obtaining more information about brokers and indirect ties will require a change in strategy from that used by network researchers studying relationships within organizations. Network researchers studying ties within corporations, voluntary associations, or other type of organizations have the luxury of access to a full list of all the employees and members of the organization and thus through direct interviews can map out all the indirect ties between them. Investigators studying entrepreneurs “in the wild” will need to take a different approach. One possibility would be to return to the kinds of strategies used by social scientists studying communities in the 1950s and 1960s, which involved near-saturation sampling of neighborhoods and communities and snowball sampling – within a constrained area – to locate people relevant to the project’s purpose. Case studies of single industries for which a team of knowledgeable investigators is aware of peripheral as well as central players can lead to sampling lists that mimic the kind available to investigators studying relations within organizations. Ethnographic studies of the kind mentioned above for investigating network stability could also be useful in identifying brokers, especially if the role of “broker” represents a cultural category within a community.

In this review, we have taken up the challenge of identifying some of the contingencies affecting the costs and benefits of networking strategies, drawing upon research findings from the past several decades. The two research issues we have discussed represent only a small fraction of the potential unleashed because of the pioneering work of Granovetter (1973), Burt (1992; 2005) and their followers on the importance of cohesion, relational diversity, and other network concepts and principles. We have learned a great deal over the past several decades, but many challenging questions remain. We find this line of research thought provoking and we hope others will, as well.

References

- Adler, P.S. and Kwon, S.-W. (2002), “Social capital: prospects for a new concept”, *Academy of Management Review*, Vol. 27 No. 1, pp. 17-40.
- Aidis, R., Estrin, S. and Mickiewicz, T. (2008), “Institutions and entrepreneurship development in Russia: a comparative perspective”, *Journal of Business Venturing*, Vol. 23 No. 6, pp. 656-72.
- Aldrich, H.E. and Cliff, J.E. (2003), “The pervasive effects of family on entrepreneurship: toward a family embeddedness perspective”, *Journal of Business Venturing*, Vol. 18 No. 5, pp. 573-96.
- Aldrich, H.E. and Fiol, C.M. (1994), “Fools rush in? The institutional context of industry creation”, *The Academy of Management Review*, Vol. 19 No. 4, pp. 645-70.
- Aldrich, H.E. and Kim, P.H. (2007), “A life course perspective on occupational inheritance: self-employed parents and their children”, in Ruef, M. and Lounsbury, M. (Eds), *Research in the Sociology of Organizations*, JAI Press Elsevier, Oxford, pp. 33-82.
- Aldrich, H.E. and Langton, N. (1997), “Human resource management and organizational life cycles”, in Reynolds, P.D., Bygrave, W., Carter, N.M. and Davidsson, P. (Eds), *Frontiers of Entrepreneurship Research*, Babson College Center for Entrepreneurial Studies, Babson Park, MA, p. 349.
- Aldrich, H.E. and Martinez, M.A. (2001), “Many are called, but few are chosen: an evolutionary perspective for the study of entrepreneurship”, *Entrepreneurship: Theory and Practice*, Vol. 25 No. 4, pp. 41-56.
- Aldrich, H.E. and Ruef, M. (2006), *Organizations Evolving*, Sage Publications, Thousand Oaks, CA.

- Aldrich, H.E. and Waldinger, R. (1990), "Ethnicity and entrepreneurship", *Annual Review of Sociology*, Vol. 16 No. 1, pp. 111-35.
- Aldrich, H.E., Elam, A.B. and Reese, P.R. (1997), "Strong ties, weak ties and strangers: do women owners differ from men in their use of networking to obtain assistance?", in Birley, S. and Macmillan, I.C. (Eds), *Entrepreneurship in a Global Context*, Routledge, pp. 1-25.
- Aldrich, H.E., Reese, P.R. and Dubini, P. (1989), "Women on the verge of a breakthrough: networking among entrepreneurs in the United States and Italy", *Entrepreneurship and Regional Development*, Vol. 1 No. 4, pp. 339-56.
- Anderson, A.R., Jack, S.L. and Dodd, S.D. (2005), "The role of family members in entrepreneurial networks: beyond the boundaries of the family firm", *Family Business Review*, Vol. 18 No. 2, pp. 135-54.
- Angle, H.L. (1989), "Psychology and organizational innovation", in Van de Ven, A.H., Angle, H.L. and Poole, M.S. (Eds), *Research on the Management of Innovation: The Minnesota Studies*, Ballinger, New York, NY, pp. 135-70.
- Anthony, D. (2005), "Cooperation in microcredit borrowing groups: identity, sanctions, and reciprocity in the production of collective goods", *American Sociological Review*, Vol. 70 No. 3, pp. 496-515.
- Baron, R.A. and Markman, G.D. (2000), "Beyond social capital: how social skills can enhance entrepreneurs' success", *Academy of Management Executive*, Vol. 14 No. 1, pp. 106-16.
- Baron, R.A. and Tang, J. (2009), "Entrepreneurs' social skills and new venture performance: mediating mechanisms and cultural generality", *Journal of Management*, Vol. 35 No. 2, pp. 282-306.
- Bates, T. (1997), "Financing small business creation: the case of Chinese and Korean immigrant entrepreneurs", *Journal of Business Venturing*, Vol. 12 No. 2, pp. 109-24.
- Batjargal, B. (2003), "Social capital and entrepreneurial performance in Russia: a longitudinal study", *Organization Studies*, Vol. 24 No. 4, pp. 535-56.
- Batjargal, B. and Liu, M. (2004), "Entrepreneurs' access to private equity in China: the role of social capital", *Organization Science*, Vol. 15 No. 2, pp. 159-72.
- Becattini, G. (1990), "The Marshallian industrial districts as a socio-economic notion", in Pyke, F., Becattini, G. and Sengenberger, W. (Eds), *Industrial Districts and Inter-firm Cooperation in Italy*, *International Institute for Labour Studies*, International Institute for Labour Studies, ILO, Geneva, pp. 37-51.
- Benjamin, B.A. and Podolny, J.M. (1999), "Status, quality, and social order in the California wine industry", *Administrative Science Quarterly*, Vol. 44 No. 3, pp. 563-89.
- Bhave, M.P. (1994), "A process model of entrepreneurial venture creation", *Journal of Business Venturing*, Vol. 9 No. 3, pp. 223-42.
- Biggart, N.W. (2001), "Banking on each other: the situational logic of rotating savings and credit associations", *Advances in Qualitative Organization Research*, Vol. 3, pp. 129-53.
- Blau, P.M. (1977), "A macrosociological theory of social structure", *The American Journal of Sociology*, Vol. 83 No. 1, pp. 26-54.
- Boisot, M. and Child, J. (1996), "From fiefs to clans and network capitalism: explaining China's emerging economic order", *Administrative Science Quarterly*, Vol. 41 No. 4, pp. 600-28.
- Boissevain, J., Blaschke, J., Grotenber, H., Joseph, I., Light, I., Sway, M., Waldinger, R. and Webner, P. (1990), "Ethnic entrepreneurs and ethnic strategies", in Waldinger, and, R., Aldrich, H.E. and Ward, R. (Eds), *Ethnic Entrepreneurs: Immigrant Business in Industrial Societies*, Sage Publications, Newbury Park, CA, pp. 131-76.

-
- Bourdieu, P. (1974), "Cultural reproduction and social reproduction", in Brown, R. (Ed.), *Education and Social Change*, Taylor and Francis, London, pp. 71-84.
- Brush, C.G. (2008), "Pioneering strategies for entrepreneurial success", *Business Horizons*, Vol. 51 No. 1, pp. 21-7.
- Burt, R.S. (1992), *Structural Holes: The Social Structure of Competition*, Harvard University Press, Cambridge, MA.
- Burt, R.S. (1997), "The contingent value of social capital", *Administrative Science Quarterly*, Vol. 42 No. 2, pp. 339-65.
- Burt, R.S. (2005), *Brokerage and Closure: An Introduction to Social Capital*, Oxford University Press, Oxford.
- Cassar, G. (2004), "The financing of business start-ups", *Journal of Business Venturing*, Vol. 19 No. 2, pp. 261-83.
- Casson, M. and Giusta, M.D. (2007), "Entrepreneurship and social capital: Analyzing the impact of social networks on entrepreneurial activity from a rational action perspective", *International Small Business Journal*, Vol. 25 No. 3, pp. 220-44.
- Ceglie, G., Clara, M. and Dini, M. (1999), "Cluster and network development projects in developing countries: lessons learned through the Unido experience", *Boosting Innovation: The Cluster Approach*, OECD Proceedings, Paris.
- Charan, R. (1991), "How networks reshape organizations – for results", *Harvard Business Review*, Vol. 69 No. 5, pp. 104-15.
- Chell, E. and Baines, S. (2000), "Networking entrepreneurship and microbusiness behaviour", *Entrepreneurship and Regional Development*, Vol. 12 No. 3, pp. 195-215.
- Chuang, C.-M. and Lin, C.-P. (2009), "Social capital in mutual funds: the implications for agency problem, governance, and synergy", *The Journal of International Management Studies*, Vol. 4 No. 1, pp. 175-81.
- Clark, E. (2000), "The role of social capital in developing Czech private business", *Work Employment Society*, Vol. 14 No. 3, pp. 439-58.
- Coe, N.M. and Bunnell, T.G. (2003), "Spatializing knowledge communities: towards a conceptualization of transnational innovation networks", *Global Networks*, Vol. 3 No. 4, p. 437.
- Cohen, W.M. and Levinthal, D.A. (1990), "Absorptive capacity: a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35 No. 1, pp. 128-52.
- Coleman, J.S. (1988), "Social capital in the creation of human capital", *American Journal of Sociology*, Vol. 94, pp. s1-S95.
- Coleman, J.S. (1990), *Foundations of Social Theory*, Harvard University Press, Cambridge, MA.
- Colombo, M.G. and Grilli, L. (2005), "Founders' human capital and the growth of new technology-based firms: a competence-based view", *Research Policy*, Vol. 34 No. 6, pp. 795-816.
- Cook, K.S. and Emerson, R.M. (1978), "Power, equity and commitment in exchange networks", *American Sociological Review*, Vol. 43 No. 5, pp. 721-39.
- Cooke, P. and Wills, D. (1999), "Small firms, social capital and the enhancement of business performance through innovation", *Small Business Economics*, Vol. 13 No. 3, pp. 219-35.
- Cooke, P., Clifton, N. and Oleaga, M. (2005), "Social capital, firm embeddedness and regional development", *Regional Studies*, Routledge, pp. 1065-77.
- Dasgupta, P. (2003), "Social capital and economic performance: analytics", in Ostrom, E. and Ahn, T.K. (Eds), *Foundations of Social Capital*, Edward Elgar, Cheltenham, pp. 238-57.

- Davidsson, P. and Honig, B. (2003), "The role of social and human capital among nascent entrepreneurs", *Journal of Business Venturing*, Vol. 18 No. 3, pp. 301-31.
- Davis, A.E., Renzulli, L.A. and Aldrich, H.E. (2006), "Mixing or matching? The influence of voluntary associations on the occupational diversity and density of small business owners' networks", *Work and Occupations*, Vol. 33 No. 1, pp. 42-72.
- De Carolis, D.M. and Saporito, P. (2006), "Social capital, cognition, and entrepreneurial opportunities: a theoretical framework", *Entrepreneurship: Theory and Practice*, Vol. 30 No. 1, pp. 41-56.
- De Toni, A. and Nassimbeni, G. (1995), "Supply networks: Genesis, stability and logistics implications. A comparative analysis of two districts", *Omega*, Vol. 23 No. 4, pp. 403-18.
- Deakins, D., Ishaq, M., Smallbone, D., Whittam, G. and Wyper, J. (2007), "Ethnic minority businesses in Scotland and the role of social capital", *International Small Business Journal*, Vol. 25 No. 3, pp. 307-26.
- Dekker, H.C. (2004), "Control of inter-organizational relationships: evidence on appropriation concerns and coordination requirements", *Accounting, Organizations and Society*, Vol. 29 No. 1, pp. 27-49.
- DiMaggio, P. and Louch, H. (1998), "Socially embedded consumer transactions: for what kinds of purchases do people most often use networks?", *American Sociological Review*, Vol. 63 No. 5, pp. 619-37.
- Dowla, A. (2006), "In credit we trust: building social capital by Grameen bank in Bangladesh", *Journal of Socio-Economics*, Vol. 35 No. 1, pp. 102-22.
- Down, S. (2006), *Narratives of Enterprise: Crafting Entrepreneurial Self-identity in a Small Firm*, Edward Elgar, Cheltenham.
- Dubini, P. and Aldrich, H. (1991), "Personal and extended networks are central to the entrepreneurial process", *Journal of Business Venturing*, Vol. 6 No. 5, pp. 305-13.
- Dyer, J.H. and Singh, H. (1998), "The relational view: cooperative strategy and sources of interorganizational competitive advantage", *Academy of Management Review*, Vol. 23 No. 4, pp. 660-79.
- Edelman, L.F., Bresnen, M., Newell, S., Scarbrough, H. and Swan, J. (2004), "The benefits and pitfalls of social capital: empirical evidence from two organizations in the United Kingdom", *British Journal of Management*, Vol. 15, s1, pp. S59-S69.
- Eisenhardt, K.M. and Schoonhoven, C.B. (1990), "Organizational growth: linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978-1988", *Administrative Science Quarterly*, Vol. 35 No. 63, pp. 504-29.
- Elfring, T. and Hulsink, W. (2007), "Networking by entrepreneurs: patterns of tie formation in emerging organizations", *Organization Studies*, Vol. 28 No. 12, pp. 1849-72.
- Erikson, T. (2003), "Towards a taxonomy of entrepreneurial learning experiences among potential entrepreneurs", *Journal of Small Businesses and Enterprise Development*, Vol. 10 No. 1, pp. 106-13.
- Evald, M.R., Klyver, K.I.M. and Svendsen, S.G. (2006), "The changing importance of the strength of ties throughout the entrepreneurial process", *Journal of Enterprising Culture*, Vol. 14 No. 1, pp. 1-26.
- Fafchamps, M. (2000), "Ethnicity and credit in African manufacturing", *Journal of Development Economics*, Vol. 61 No. 1, pp. 205-35.
- Faist, T. (2000), *The Volume Dynamics of International Migration and Transnational Social Spaces*, Oxford University Press, New York, NY.

-
- Feeser, H.R. and Willard, G.E. (1990), "Founding strategy and performance: a comparison of high and low growth high tech firms", *Strategic Management Journal*, Vol. 11 No. 2, pp. 87-98.
- Ferris, S.P., Kim, K.A. and Kitsabunnarat, P. (2003), "The costs (and benefits?) of diversified business groups: the case of Korean chaebols", *Journal of Banking and Finance*, Vol. 27 No. 2, pp. 251-73.
- Fischer, C.S. (1982), *To Dwell Among Friends: Personal Networks in Town and City*, University of Chicago Press, Chicago, IL.
- Florin, J., Lubatkin, M. and Schulze, W. (2003), "A social capital model of high-growth ventures", *The Academy of Management Journal*, Vol. 46 No. 3, pp. 374-84.
- Forbes, D.P., Borchert, P.S., Zellmer-Bruhn, M.E. and Sapienza, H.J. (2006), "Entrepreneurial team formation: an exploration of new member addition", *Entrepreneurship: Theory and Practice*, Vol. 30 No. 2, pp. 225-48.
- Fukuyama, F. (1995), *Trust: The Social Virtues and the Creation of Prosperity*, Penguin, London.
- Gartner, W.B. (1985), "A conceptual framework for describing the phenomenon of new venture creation", *The Academy of Management Review*, Vol. 10 No. 4, pp. 696-706.
- Geertz, C. (1978), "The bazaar economy: information and search in peasant marketing", *The American Economic Review*, Vol. 68 No. 2, pp. 28-32.
- Granovetter, M. (1985), "Economic action and social structure: the problem of embeddedness", *The American Journal of Sociology*, Vol. 91 No. 3, pp. 481-510.
- Granovetter, M. (2005), "The impact of social structure on economic outcomes", *Journal of Economic Perspectives*, Vol. 19 No. 1, pp. 33-50.
- Granovetter, M.S. (1973), "The strength of weak ties", *The American Journal of Sociology*, Vol. 78 No. 6, pp. 1360-80.
- Greve, A. and Salaff, J.W. (2003), "Social networks and entrepreneurship", *Entrepreneurship: Theory and Practice*, Vol. 28 No. 1, pp. 1-22.
- Gulati, R. and Higgins, M.C. (2003), "Which ties matter when? The contingent effects of interorganizational partnerships on IPO success", *Strategic Management Journal*, Vol. 24 No. 2, p. 127.
- Hallett, T. and Ventresca, M.J. (2009), "Inhabited institutions: social interactions and organizational forms in Gouldner's patterns of industrial bureaucracy", *Theory and Society*, Vol. 35 No. 2, pp. 213-36.
- Harrison, R.T., Cooper, S.Y. and Mason, C.M. (2004a), "Entrepreneurial activity and the dynamics of technology-based cluster development: the case of Ottawa", *Urban Studies (Routledge)*, Vol. 41 Nos 5-6, pp. 1045-70.
- Harrison, R.T., Mason, C.M. and Girling, P. (2004b), "Financial bootstrapping and venture development in the software industry", *Entrepreneurship and Regional Development*, Vol. 16 No. 4, pp. 307-33.
- Hartmann, M. (2000), "Class-specific habitus and the social reproduction of the business elite in Germany and France", *The Sociological Review*, Vol. 48 No. 2, pp. 241-61.
- Heck, R.K.Z. and Trent, E.S. (1999), "The prevalence of family business from a household sample", *Family Business Review*, Vol. 12 No. 3, pp. 209-19.
- Hills, G.E., Lumking, G.T. and Singh, R. (1997), "Opportunity recognition: perceptions and behaviors", in Reynolds, P.D., Bygrave, W., Carter, N.M., Davidsson, P., Garnet, W., McDougal, M.C. and McDougal, P. (Eds), *Frontiers of Entrepreneurship Research*, Center for Entrepreneurial Studies, Wellesley, MA, pp. 168-82.

- Hite, J.M. and Hesterly, W.S. (2001), "The evolution of firm networks: from emergence to early growth of the firm", *Strategic Management Journal*, Vol. 22 No. 3, pp. 275-86.
- Holliday, A. (1995), "Assessing language needs within an institutional context: an ethnographic approach", *English for Specific Purposes*, Vol. 14 No. 2, pp. 115-26.
- Hsu, D.H. (2007), "Experienced entrepreneurial founders, organizational capital, and venture capital funding", *Research Policy*, Vol. 36 No. 5, pp. 722-41.
- Huggins, R. (2000), "The success and failure of policy-implemented inter-firm network initiatives: motivations, processes and structure", *Entrepreneurship and Regional Development*, Vol. 12 No. 2, pp. 111-35.
- Humphrey, J. and Schmitz, H. (1996), "The triple C approach to local industrial policy", *World Development*, Vol. 24 No. 12, pp. 1859-77.
- Ingram, P. and Roberts, P.W. (2000), "Friendships among competitors in the Sydney hotel industry", *American Journal of Sociology*, Vol. 106 No. 2, pp. 387-423.
- Jack, S.L. (2005), "The role, use and activation of strong and weak network ties: a qualitative analysis", *Journal of Management Studies*, Vol. 42 No. 6, pp. 1233-59.
- Jack, S.L. and Anderson, A.R. (2002), "The effects of embeddedness on the entrepreneurial process", *Journal of Business Venturing*, Vol. 17 No. 5, pp. 467-87.
- Jenssen, J.I. and Koenig, H.F. (2002), "The effect of social networks on resource access and business start-ups", *European Planning Studies*, Vol. 10 No. 8, pp. 1039-46.
- Johannisson, B. (1996), "The dynamics of entrepreneurial networks", in Reynolds, P.D., Bygrave, W., Carter, N.M., Davidsson, P., Garnet, W., Mason, C. and McDougal, P. (Eds), *Frontiers of Entrepreneurship Research*, Center for Entrepreneurial Studies, Wellesley, MA.
- Jones, C., Hesterly, W.S. and Borgatti, S.P. (1997), "A general theory of network governance: exchange conditions and social mechanisms", *Academy of Management Review*, Vol. 22 No. 4, pp. 911-45.
- Jones, O. (2005), "Manufacturing regeneration through corporate entrepreneurship: middle managers and organizational innovation", *International Journal of Operations and Production Management*, Vol. 25 No. 5, pp. 491-511.
- Jones, O. and Jayawarna, D. (2010), "Resourcing new businesses: social networks, bootstrapping and firm performance", *Venture Capital*, Vol. 12 No. 3 (forthcoming).
- Julien, P.-A., Andriambeloson, E. and Ramangalahy, C. (2004), "Networks, weak signals and technological innovations among SMEs in the land-based transportation equipment sector", *Entrepreneurship and Regional Development*, Vol. 16 No. 4, pp. 251-69.
- Keister, L.A. (1998), "Engineering growth: business group structure and firm performance in China's transition economy", *The American Journal of Sociology*, Vol. 104 No. 2, pp. 404-40.
- Kilpatrick, S., Fulton, A. and Johns, S. (2007), "Matching training needs and opportunities: the case for training brokers in the Australian agricultural sector", *International Journal of Lifelong Education*, Vol. 26, pp. 209-24.
- Kim, P.H., Longest, K.C. and Aldrich, H.E. (2009), "Can you lend me a hand? Task-role alignment of social support and entrepreneurial persistence", working paper, UNC-CH, 2009.
- Koberg, C.S., Detienne, D.R. and Heppard, K.A. (2003), "An empirical test of environmental, organizational, and process factors affecting incremental and radical innovation", *The Journal of High Technology Management Research*, Vol. 14 No. 1, pp. 21-45.
- Kogut, B. (2000), "The network as knowledge: Generative rules and the emergence of structure", *Strategic Management Journal*, Vol. 21 No. 3, pp. 405-26.

-
- Kolvareid, L. (1996), "Prediction of employment status choice intentions", *Entrepreneurship: Theory and Practice*, Vol. 21 No. 1, pp. 47-57.
- Koning, J. (2009), "Singing yourself into existence: Chinese Indonesian entrepreneurs, Pentecostal-Charismatic Christianity, and the Indonesian nation state", in Bautista, J. and Lim Khok Gee, F. (Eds), *Christianity and the State in Asia: Complicity and Conflict*, Routledge, London, pp. 115-30.
- Kristiansen, S. and Ryen, A. (2002), "Enacting their business environments: Asian entrepreneurs in East Africa", *African and Asian Studies*, Vol. 1 No. 3, p. 165.
- Krueger, N. (1993), "The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability", *Entrepreneurship: Theory and Practice*, Vol. 18 No. 1, pp. 5-21.
- Lane, P.J. and Lubatkin, M. (1998), "Relative absorptive capacity and interorganizational learning", *Strategic Management Journal*, Vol. 19 No. 5, pp. 461-77.
- Lane, P.J., Koka, B.R. and Pathak, S. (2006), "The reification of absorptive capacity: a critical review and rejuvenation of the construct", *Academy of Management Review*, Vol. 31 No. 4, pp. 833-63.
- Lawson, C. and Lorenz, E. (1999), "Collective learning, tacit knowledge and regional innovative capacity", *Regional Studies*, Vol. 33 No. 4, pp. 305-17.
- Lechner, C. and Dowling, M. (2003), "Firm networks: external relationships as sources for the growth and competitiveness of entrepreneurial firms", *Entrepreneurship and Regional Development*, Vol. 15 No. 1, pp. 1-26.
- Lee, D.Y. and Tsang, E.W.K. (2001), "The effects of entrepreneurial personality, background and network activities on venture growth", *Journal of Management Studies*, Vol. 38 No. 4, pp. 583-602.
- Lee, R. and Jones, O. (2008), "Networks, communication and learning during business start-up: the creation of cognitive social capital", *International Small Business Journal*, Vol. 26 No. 5, pp. 559-94.
- Leung, A., Zhang, J., Wong, P.K. and Foo, M.D. (2006), "The use of networks in human resource acquisition for entrepreneurial firms: multiple fit considerations", *Journal of Business Venturing*, Vol. 21 No. 5, pp. 664-86.
- Levin, D.Z. (1999), "Transferring knowledge within the organization in the R&D arena", unpublished doctoral dissertation, Northwestern University, Evanston, IL.
- Levin, D.Z. and Cross, R. (2004), "The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer", *Management Science*, Vol. 50 No. 11, pp. 1477-90.
- Liao, J. and Welsch, H. (2003), "Social capital and entrepreneurial growth aspiration: a comparison of technology- and non-technology-based nascent entrepreneurs", *The Journal of High Technology Management Research*, Vol. 14 No. 1, pp. 149-70.
- Lin, N. (2001), *Social Capital: A Theory of Social Structure and Action*, Cambridge University Press, Cambridge, New York, NY.
- Lipparini, A. and Sobrero, M. (1994), "The glue and the pieces: entrepreneurship and innovation in small-firm networks", *Journal of Business Venturing*, Vol. 9 No. 2, pp. 125-40.
- Lomi, A. (1995), "The population ecology of organizational founding: location dependence and unobserved heterogeneity", *Administrative Science Quarterly*, Vol. 40 No. 1, pp. 111-44.
- Low, M.B. and Abrahamson, E. (1997), "Movements, bandwagons, and clones: Industry evolution and the entrepreneurial process", *Journal of Business Venturing*, Vol. 12 No. 6, pp. 435-57.
- Lyon, F. (2000), "Trust, networks and norms: the creation of social capital in agricultural economies in Ghana", *World Development*, Vol. 28 No. 4, pp. 663-81.

- McEvily, B. and Marcus, A. (2000), "The acquisition of competitive capabilities as social learning", paper presented at the Presentation at the Organizational Science Winter Conference, Keystone, Colorado.
- McEvily, B. and Zaheer, A. (1999), "Bridging ties: a source of firm heterogeneity in competitive capabilities", *Strategic Management Journal*, Vol. 20 No. 12, pp. 1133-56.
- McGee, J.E., Dowling, M.J. and Megginson, W.L. (1995), "Cooperative strategy and new venture performance: the role of business strategy and management experience", *Strategic Management Journal*, Vol. 16 No. 7, pp. 565-80.
- McPherson, M., Smith-Lovin, L. and Cook, J.M. (2001), "Birds of a feather: homophily in social networks", *Annual Review of Sociology*, Vol. 27 No. 1, p. 415.
- Malecki, E.J. (1993), "Entrepreneurship in regional and local development", *International Regional Science Review*, Vol. 16 Nos 1-2, pp. 119-53.
- Manev, I.M., Gyoshev, B.S. and Manolova, T.S. (2005), "The role of human and social capital and entrepreneurial orientation for small business performance in a transitional economy", *International Journal of Entrepreneurship and Innovation Management*, Vol. 5 Nos 3-4, pp. 298-318.
- Maskell, P. (2001), "Towards a knowledge-based theory of the geographical cluster", *Industrial Corporate Change*, Vol. 10 No. 4, pp. 921-43.
- Maskell, P. and Malmberg, A. (1999), "Localized learning and industrial competitiveness", *Cambridge Journal of Economics*, Vol. 23 No. 2, pp. 167-85.
- Matthews, C.H. and Moser, S.B. (1996), "A longitudinal investigation of the impact of family background and gender on interest in small firm ownership", *Journal of Small Business Management*, Vol. 34 No. 2, pp. 29-43.
- Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review*, Vol. 23 No. 2, pp. 242-66.
- Narayan, D., Chambers, R., Shah, M. and Petisch, P. (2000), *Crying Out for Change: Voices of the Poor*, Oxford University Press, New York, NY.
- Nerkar, A.A., McGrath, R.G. and MacMillan, I.C. (1996), "Three facets of satisfaction and their influence on the performance of innovation teams", *Journal of Business Venturing*, Vol. 11 No. 3, pp. 167-88.
- Newell, S., Tansley, C. and Huang, J. (2004), "Social capital and knowledge integration in an ERP project team: the importance of bridging and bonding", *British Journal of Management*, Vol. 15 No. S1, pp. 43-57.
- Nicolaou, N. and Birley, S. (2003), "Social networks in organizational emergence: the university spinout phenomenon", *Management Science*, Vol. 49 No. 12, pp. 1702-25.
- Owen-Smith, J. and Powell, W.W. (2004), "Knowledge networks as channels and conduits: the effects of spillovers in the Boston biotechnology community", *Organization Science*, Vol. 15 No. 1, pp. 5-21.
- Parsons, M.C. and Rose, M.B. (2004), "Communities of knowledge: entrepreneurship, innovation and networks in the British outdoor trade, 1960-90", *Business History*, Vol. 46 No. 4, pp. 609-39.
- Phalen, P.F. (1998), "The market information system and personalized exchange: business practices in the market for television audiences", *Journal of Media Economics*, Vol. 11 No. 4, pp. 17-34.
- Podolny, J.M. (1993), "A status-based model of market competition", *The American Journal of Sociology*, Vol. 98 No. 4, pp. 829-72.

-
- Podolny, J.M. (2001), "Networks as the pipes and prisms of the market", *The American Journal of Sociology*, Vol. 107 No. 1, pp. 33-60.
- Portes, A. and Sensenbrenner, J. (1993), "Embeddedness and immigration: notes on the social determinants of economic action", *The American Journal of Sociology*, Vol. 98 No. 6, pp. 1320-50.
- Portes, A., Guarnizo, L.E. and Haller, W.J. (2002), "Transnational entrepreneurs: an alternative form of immigrant economic adaptation", *American Sociological Review*, Vol. 67 No. 2, pp. 278-98.
- Puffer, S.M. and McCarthy, D.J. (2007), "Can Russia's state-managed, network capitalism be competitive?: Institutional pull versus institutional push", *Journal of World Business*, Vol. 42 No. 1, pp. 1-13.
- Pyke, F. (1992), *Industrial Development Through Small Firm Cooperation*, ILO, Geneva.
- Ram, M. (1994), *Managing to Survive: Working Lives in Small Firms*, Blackwell, Oxford.
- Ram, M. and Holliday, R. (1993), "Relative merits: family culture and kinship in small firms", *Sociology*, Vol. 27 No. 4, pp. 629-48.
- Renzulli, L.A. and Aldrich, H. (2005), "Who can you turn to? Tie activation within core business discussion networks", *Social Forces*, Vol. 84 No. 1, pp. 323-41.
- Renzulli, L.A., Aldrich, H. and Moody, J. (2000), "Family matters: gender, networks, and entrepreneurial outcomes", *Social Forces*, Vol. 79 No. 2, pp. 523-46.
- Reynolds, P.D. (1994), "Reducing barriers to understanding new firm gestation: prevalence and success of nascent entrepreneurs", Meeting of the Academy of Management, Dallas, TX.
- Reynolds, P.D. and White, S. (1997), *The Entrepreneurial Process: Economic Growth, Men, Women and Minorities*, Quorum, Westport, CT.
- Ring, P.S. and Van de Ven, A.H. (1992), "Structuring cooperative relationships between organizations", *Strategic Management Journal*, Vol. 13 No. 7, pp. 483-98.
- Robertson, M., Swan, J. and Newell, S. (1996), "The role of networks in the diffusion of technological innovation", *Journal of Management Studies*, Vol. 33, pp. 333-59.
- Rona-Tas, A. (1994), "The first shall be last? Entrepreneurship and communist cadres in the transition from socialism", *The American Journal of Sociology*, Vol. 100 No. 1, pp. 40-69.
- Röper, A., Völker, B. and Flap, H. (2009), "Social networks and getting a home: do contacts matter?", *Social Networks*, Vol. 31 No. 1, pp. 40-51.
- Roure, J.B. and Maidique, M.A. (1986), "Linking prefunding factors and high-technology venture success: an exploratory study", *Journal of Business Venturing*, Vol. 1 No. 3, pp. 295-306.
- Ruef, M. (2002), "Strong ties, weak ties and islands: structural and cultural predictors of organizational innovation", *Industrial and Corporate Change*, Vol. 11 No. 3, pp. 427-49.
- Ruef, M., Aldrich, H.E. and Carter, N.M. (2003), "The structure of founding teams: homophily, strong ties, and isolation among US entrepreneurs", *American Sociological Review*, Vol. 68 No. 2, pp. 195-222.
- Saxenian, A. and Sabel, C. (2008), "Roepke lecture in economic geography venture capital in the periphery: the new Argonauts, global search, and local institution building", *Economic Geography*, Vol. 84 No. 4, pp. 379-94.
- Schmitz, H. (1995), "Collective efficiency: growth path for small-scale industry", *Journal of Development Studies*, Vol. 31 No. 4, pp. 529-67.
- Schoorman, F.D., Mayer, R.C. and Davis, J.H. (2007), "An integrative model of organizational trust: past, present, and future", *Academy of Management Review*, pp. 344-54.

- Scott, M.G. and Twomey, D.F. (1988), "The long-term supply of entrepreneurs: students' career aspirations in relation to entrepreneurship", *Journal of Small Business Management*, Vol. 26 No. 4, pp. 5-13.
- Sequeira, J.M. and Rasheed, A.A. (2006), "Start-up and growth of immigrant small businesses: the impact of social and human capital", *Journal of Developmental Entrepreneurship*, Vol. 11 No. 4, pp. 357-75.
- Sequeira, J., Mueller, S.L. and McGee, J.E. (2007), "The influence of social ties and self-efficacy in forming entrepreneurial intentions and motivating nascent behavior", *Journal of Developmental Entrepreneurship*, Vol. 12 No. 3, pp. 275-93.
- Shane, S. (2000), "Prior knowledge and the discovery of entrepreneurial opportunities", *Organization Science*, Vol. 11 No. 4, pp. 448-69.
- Shane, S. and Cable, D. (2002), "Network ties, reputation, and the financing of new ventures", *Management Science*, Vol. 48 No. 3, pp. 364-81.
- Smith, D.A. and Lohrke, F.T. (2008), "Entrepreneurial network development: trusting in the process", *Journal of Business Research*, Vol. 61 No. 4, pp. 315-22.
- Soh, P.-H. (2003), "The role of networking alliances in information acquisition and its implications for new product performance", *Journal of Business Venturing*, Vol. 18 No. 6, pp. 727-44.
- Spence, L.J., Schmidpeter, R. and Habisch, A. (2003), "Assessing social capital: small and medium sized enterprises in Germany and the UK", *Journal of Business Ethics*, Vol. 47 No. 1, pp. 17-29.
- Starr, J.A. and Macmillan, I.C. (1990), "Resource cooptation via social contracting: resource acquisition strategies for new ventures", *Strategic Management Journal*, Vol. 11 No. 4, pp. 79-92.
- Stearns, T.M. (1996), "Strategic alliances and performance of high technology new firms", in Reynolds, and, P.D., Bygrave, W., Carter, N.M., Davidsson, P., Garnet, W., Mason, C. and McDougal, P. (Eds), *Frontiers of Entrepreneurship Research*, Center for Entrepreneurial Studies, Wellesley, MA.
- Steier, L. and Greenwood, R. (2000), "Entrepreneurship and the evolution of angel financial networks", *Organization Studies*, Vol. 21 No. 1, p. 163.
- Stewart, A. (2003), "Help one another, use one another: toward an anthropology of family business", *Entrepreneurship: Theory and Practice*, Vol. 27 No. 4, pp. 383-96.
- Strambach, S. (1994), "Knowledge-intensive business services in the Rhine-Neckar area", *Tijdschrift voor economische en sociale geografie*, Vol. 85, pp. 354-65.
- Stuart, T.E. (2000), "Interorganizational alliances and the performance of firms: a study of growth and innovation", *Strategic Management Journal*, Vol. 21 No. 8, pp. 791-811.
- Stuart, T.E., Hoang, H. and Hybels, R.C. (1999), "Interorganizational endorsements and the performance of entrepreneurial ventures", *Administrative Science Quarterly*, Vol. 44 No. 2, pp. 315-49.
- Styan, D. (2007), "The security of Africans beyond borders: migration, remittances and London's transnational entrepreneurs", *International Affairs*, Vol. 83 No. 6, pp. 1171-91.
- Tambunan, T. (2005), "Promoting small and medium enterprises with a clustering approach: a policy experience from Indonesia", *Journal of Small Business Management*, Vol. 43 No. 2, pp. 138-54.
- Tsai, K.S. (2005), "Capitalists without a class: political diversity among private entrepreneurs in China", *Comparative Political Studies*, Vol. 38 No. 9, pp. 1130-58.

-
- Turner, S. (2007), "Small-scale enterprise livelihoods and social capital in Eastern Indonesia: ethnic embeddedness and exclusion", *Professional Geographer*, Vol. 59 No. 4, pp. 407-20.
- Uzzi, B. (1997), "Social structure and competition in interfirm networks: the paradox of embeddedness", *Administrative Science Quarterly*, Vol. 42 No. 1, pp. 35-67.
- Uzzi, B. (1999), "Embeddedness in the making of financial capital: how social relations and networks benefit firms seeking financing", *American Sociological Review*, Vol. 64 No. 4, pp. 481-505.
- Uzzi, B. and Gillespie, J.J. (2002), "Knowledge spillover in corporate financing networks: embeddedness and the firm's debt performance", *Strategic Management Journal*, Vol. 23 No. 7, pp. 595-618.
- Uzzi, B. and Lancaster, R. (2003), "Relational embeddedness and learning: the case of bank loan managers and their clients", *Management Science*, Vol. 49 No. 4, pp. 383-99.
- von Hippel, E. (1987), *The Sources of Innovation*, Oxford University Press, New York, NY.
- Wai-Chung Yeung, H. (2002), "Entrepreneurship in international business: An institution perspective", *Asia Pacific Journal of Management*, Vol. 19 No. 1, p. 29.
- Waldinger, R., Aldrich, H.E. and Ward, R. (1990), "Opportunities, group characteristics and strategies", in Waldinger, R., Aldrich, H.E. and Ward, R. (Eds), *Ethnic Entrepreneurs: Immigrant Businesses in Industrial Societies*, Sage Publications, Newbury Park, CA, pp. 13-48.
- Waldinger, R.D. (1986), *Through the Eye of the Needle: Immigrants and Enterprise in New York's Garment Trades*, New York University Press, New York, NY.
- Walker, G., Kogut, B. and Shan, W. (1997), "Social capital, structural holes and the formation of an industry network", *Organization Science*, Vol. 8 No. 2, pp. 109-25.
- Weiler, S. and Bernasek, A. (2001), "Dodging the glass ceiling? Networks and the new wave of women entrepreneurs", *Social Science Journal*, Vol. 38 No. 1, p. 85.
- White, H.C., Boorman, S.A. and Breiger, R.L. (1976), "Social structure from multiple networks. I. Blockmodels of roles and positions", *The American Journal of Sociology*, Vol. 81 No. 4, pp. 730-80.
- Whyte, M.K. (1996), "The Chinese family and economic development: obstacle or engine?", *Economic Development and Cultural Change*, Vol. 45 No. 1, pp. 1-30.
- Williamson, O.E. (1983), "Credible commitments: using hostages to support exchange", *American Economic Review*, Vol. 73 No. 4, p. 519.
- Williamson, O.E. (1985), *The Economic Institutions of Capitalism*, Free Press, New York, NY.
- Witt, P. (2004), "Entrepreneurs' networks and the success of start-ups", *Entrepreneurship and Regional Development*, Vol. 16 No. 5, pp. 391-412.
- Wong, L.L. (2004), "Taiwanese immigrant entrepreneurs in Canada and transnational social space", *International Migration*, Vol. 42 No. 2, pp. 113-52.
- Woolcock, M. (1998), "Social capital and economic development: toward a theoretical synthesis and policy framework", *Theory and Society*, Vol. 27 No. 2, pp. 151-208.
- Woolcock, M. and Narayan, D. (2000), "Social capital: Implications for development theory, research, and policy", *The World Bank Research Observer*, Vol. 15 No. 2, pp. 225-49.
- Wu, Y.L. (1983), "Chinese entrepreneurs in Southeast Asia", *The American Economic Review*, Vol. 73 No. 2, pp. 112-7.
- Yamagishi, T. and Cook, K.S. (1993), "Generalized exchange and social dilemmas", *Social Psychology Quarterly*, Vol. 56 No. 4, pp. 235-48.

- Yamagishi, T., Cook, K.S. and Watabe, M. (1998), "Uncertainty, trust, and commitment formation in the United States and Japan", *The American Journal of Sociology*, Vol. 104 No. 1, pp. 165-94.
- Yli-Renko, H., Autio, E. and Sapienza, H.J. (2001), "Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms", *Strategic Management Journal*, Vol. 22 Nos 6/7, pp. 587-613.
- Zaheer, A. and Bell, G.G. (2005), "Benefiting from network position: firm capabilities, structural holes, and performance", *Strategic Management Journal*, Vol. 26 No. 9, pp. 809-25.
- Zahra, S.A., Ireland, R.D. and Hitt, M.A. (2000), "International expansion by new venture firms: international diversity, mode of market entry, technological learning, and performance", *The Academy of Management Journal*, Vol. 43 No. 5, pp. 925-50.
- Zcan, G.B. (1995), "Small business networks and local ties in Turkey", *Entrepreneurship and Regional Development: An International Journal*, Vol. 7 No. 3, pp. 265-84.
- Zeffane, R. (1995), "The widening scope of inter-organizational networking: economic, sectoral and social dimensions", *Leadership and Organization Development Journal*, Vol. 16 No. 4, pp. 26-33.
- Zhang, J., Soh, P. and Wong, P. (2010), "Entrepreneurial resource acquisition through indirect ties: Compensatory effects of prior knowledge", *Journal of Management*, Vol. 36 No. 2, pp. 511-36.
- Zhao, L. and Aram, J.D. (1995), "Networking and growth of young technology-intensive ventures in China", *Journal of Business Venturing*, Vol. 10 No. 5, pp. 349-70.
- Zhixing, X. and Tsui, A.S. (2007), "When brokers may not work: the cultural contingency of social capital in Chinese high-tech firms", *Administrative Science Quarterly*, Vol. 52, pp. 1-31.
- Zimmer, C. and Aldrich, H. (1987), "Resource mobilization through ethnic networks: kinship and friendship ties of shopkeepers in England", *Sociological Perspectives*, Vol. 30 No. 4, pp. 422-45.
- Zott, C. and Huy, N.Q. (2007), "How entrepreneurs use symbolic management to acquire resources", *Administrative Science Quarterly*, Vol. 52 No. 1, pp. 70-105.
- Zuckerman, E.W. and Sgourev, S.V. (2006), "Peer capitalism: parallel relationships in the US Economy", *American Journal of Sociology*, Vol. 111 No. 5, pp. 1327-66.

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