SOCIAL CAPITAL: MATURATION OF A FIELD OF RESEARCH

SEOK-WOO KWON Temple University

PAUL S. ADLER University of Southern California

Over the past decade social capital has matured from a concept into a field of research. We identify some of the main theoretical developments over this period and point to some areas where further work appears warranted. We argue that the basic social capital thesis has now been widely accepted across a range of disciplines and fields, and that research is therefore naturally shifting toward more specific aspects and mechanisms.

Social capital has been a "growth industry" (Baker & Faulkner, 2009). As Figure 1 shows, the use of "social capital" in the title, abstract, and key words of journal articles has multiplied rapidly over the past several decades. In our 2002 article (Adler & Kwon, 2002) we argued that social capital was still in the "emerging excitement" phase of the life cycle typical of an umbrella concept. By 2008, however, as Woolcock (2010) has argued, it had become largely "routinized" in both everyday conversation and policy circles. Woolcock notes the prevalence of social capital themes in research in at least eight fields beyond our own field of management and organizations: families and youth behavior problems, crime and violence, schools and education, community life, public health, management of common-pool resources, economic development, and democracy and governance. Moody and Paxton (2009) offer a similar map of the main areas of social capital research in sociology. Within economics, social capital has acquired considerable legitimacy, particularly in development economics (Hayami, 2009). Within management and organizational research, social capital has influenced research in such areas as interorganizational relationships (Sorenson & Rogan, in press), knowledge management (Maurer, Bartsch, & Ebers, 2011), and entrepreneurship (Slotte-Kock & Coviello, 2010), to name α few.

In this essay we do not review the empirical research in these various strands, since excellent reviews are already available (e.g., Burt, 2005; Durlauf & Fafchamps, 2005; Kadushin, 2004; Kim & Aldrich, 2005; Robison, Schmid, & Siles, 2002: Schuller, 2007). Instead, we review some of the main theoretical developments over the past decade, and we point to some areas where further work appears warranted. Our overall assessment is that social capital has maturedfrom a concept into a whole field of research. As a result of this success, as in any maturing industry, opportunities for growth no longer appear in the form of product or process innovation but, rather, in targeting niches for more differentiated service: there is no longer much need to refine and demonstrate the value of the overarching concept, but research can usefully continue to expand on specific aspects and mechanisms of social capital as they are relevant to specific disciplines and topics.

SOURCES OF SOCIAL CAPITAL

Social capital, we suggested in 2002, can be defined as the goodwill available to individuals and groups, where goodwill refers to "a kind, helpful, or friendly feeling or attitude," per Merriam-Webster Dictionary. Its effects lie in information, influence, and solidarity benefits that accrue to members of a collectivity ("bonding" social capital) and to actors, whether individual or collective, in their relations to other actors ("bridging" social capital). Its sources lie in the social relations among those actors, and these social relations can be differentiated (notionally) from relations of market exchange and of hierarchical authority.

FIGURE 1 Research Trends in Social Capital

Source: Social Sciences Citation Index.

We argued that the specific features of social relations that give rise to social capital lie in (1) the opportunities provided by the network structure of those relations, (2) the norms and values that constitute the content of those social network ties and give them their motivational force, and (3) the abilities at each of the nodes of this network that can be mobilized by such goodwill. This folk schema of opportunity, motivation, and ability (OMA) has not been prominent in the subsequent management literature on social capital, but we note that several other accounts rely on similar tripartite schemas differentiating structural, normative, and resource elements (Glanville & Bienenstock, 2009). And we note that our OMA schema is common in the marketing field (MacInnis, Moorman, & Jaworski, 1991) and parallels Chen's (Chen, 1996; Chen, Kuo-Hsien, & Tsai, 2007) "awareness-motivationcapability" model of competitive dynamics. We therefore use the same framework in the following paragraphs as we review the recent theoretical developments.

Opportunity: The Structural Dimension of Social Capital

Much of the prior and subsequent scholarship has located the source of social capital in the formal structure of the ties in the social network (Mouw, 2006). Indeed, the graph structure of tie networks—the subject matter of a rapidly expanding universe of scholarship among economists, sociologists, and researchers in other disciplines—has proven to be a powerful predictor of social capital's hypothesized benefits. News reports over the past decade about terrorist networks and about insider trading and "expert" networks on Wall Street have intensified both scholarly and popular interest, not to mention interest on the part of intelligence and law enforcement agencies.

The opportunity for further cross-fertilization between social network research and social capital research appears to be enormous: according to a recent review by Moody and Paxton, "only 4.5% of abstracts for articles on social networks mention social capital, and just about 2% of those on social capital explicitly mention social networks" (2009: 1491). In this section we review new developments in the social network literature that have greater relevance for social capital.

Cognitive networks. Much of the scholarship we reviewed in 2002 looks at network ties as objective and physical connections, without explicit consideration of any mediation by actor cognition. We ignored the work of cognitively oriented researchers who highlight the individual's perception of networks and criticize the existing approach as being "underpsychologized" (Kilduff, Tsai, & Hanke, 2006). Growing out of the informant accuracy research of the 1970s and 1980s (Bernard, Killworth, & Sailer, 1979), this work shows that the same set of nodes and relationships can be perceived differently by different individuals (Kilduff & Krackhardt, 1994) and that such different perceptions, in turn, condition the emergence of social capital. Thus, one study shows that perceived networks are more closely associated than actual networks with popularity and brokerage in friendship networks (Kilduff, Crossland, Tsai, & Krackhardt, 2008).

Another stream in cognitive networks research argues that networks can be constituted in the minds of individuals as "memories, thoughts, and desires" in the form of "ghost ties," without any corresponding actual ties (Kilduff et al., 2006). Social capital in the form of influence can be generated with ghost ties—as, for example, when people's attitudes are influenced by those of a celebrity with whom they imagine having a tie of some kind. Thus, research has shown that people known only through company newsletters or office gossippeople with whom the focal individual has never had any direct contact-influence the focal actor's career aspirations more than the people with whom the actor has concrete social network ties (Lawrence, 2006). Such cognitive ties can also create a wider sense of community, transcending one's immediate network contacts and one's narrow circle of friends. For example, a longitudinal, multilevel network study of teachers' use of computers found that teachers who identify more strongly with the broader school community are more likely to help colleagues whom they do not know personally (Frank, 2009).

When cognitions are given a central role in network analysis, it becomes clear that actors who occupy objectively similar places in a social network may perceive their social ties differently and, thus, may not see the same structures of constraints and opportunities. They may not notice, for example, that they span a structural hole, and, as a result, they may not derive the potential benefits of such a position. Conversely, actors may attempt to take advantage of nonexistent structural holes because of their inaccurate perception of the network structure. Clearly, however, the objective structure plays a role in these perceptions, and misinformed actors can learn and improve their ability to mobilize their potential social capital over time. Hence, one study found that individuals who report bridging structural holes in a prior network tend to be better able to recognize such holes in their current network (Janicik & Larrick, 2005) and are, as a result, more likely to derive the associated benefits.

Potential and mobilized ties. A stream of work has emerged in the last decade that distinguishes having social capital from using social capital. While social network research often assumes that individuals will take advantage of their network contacts, this more recent stream points out that this assumption often fails. For example, Obukhova and Lan (2013) found that job seekers' social capital does not predict well the likelihood of using contacts to search for jobs, even though those who use contacts do improve their job search outcomes. As Smith puts it, "Access, therefore, did not guarantee mobilization" (2005: 2).

Researchers have examined the factors that influence whether ties are actually mobilized. For example, in their study of people's recovery from Hurricane Andrew, Hurlbert, Haines, and Beggs (2000) found that the structures of individuals' core networks influenced the extent to which individuals activated ties to gain informal support. Individuals embedded in higherdensity core networks (i.e., networks in which many alters are connected to each other) activated ties to a greater degree than did individuals embedded in lower-density networks. Renzulli and Aldrich (2005) studied when business owners were likely to activate network ties to get legal, loan, financial, and expert advice and found that business owners were more likely to tap networks when these included high-status individuals and covered a large range with high density.

While the distinction between potential and mobilized ties makes sense if one looks at the ties cross-sectionally, ties can change from potential to mobilized (or vice versa) if analyzed over time. Thus, Mariotti and Delbridge (2012) suggest that researchers differentiate activated ties from potential ties (embryonic relationships where exchange has not yet occurred) and latent ties (established relationships that are not currently active in social exchanges). In a longitudinal study of firms in the European motorsport industry, these researchers found that firms selectively used these different types of ties: potential ties helped identify new ideas and latent ties helped maintain relationships with partners with whom they were not currently cooperating. Such latent ties were preferred over new ties when these latent tie partners had previously displayed expertise, high reliability, and quality of work. Moreover, given a history of successful exchange in the past, latent ties can provide a quicker and smoother way to handle unpredicted new developments and emerging problems. The role of latent ties has also been studied at the individual level by Cohen, Frazzini, and Malloy (2008), who found that latent ties formed during university years (e.g., during an MBA program) often have a large impact on social capital many years later, notably in the form of access to "private" information for use in the stock market. Levin, Walter, and Murnighan (2011) studied latent ("dormant") ties and found that executive MBA students consulted their dormant ties just as readily as their currently active ties. As they put it, "Today's dormant ties could be tomorrow's reconnected tie" (Levin et al., 2011: 935). The social capital of latent ties thus suggests some caution in interpreting cross-sectional network data. For example, cross-sectional network data are offered as evidence for the power of structural holes, while, in fact, "what may look like a structural hole between two groups, based on a network of current ties, may actually be full of dormant ties" (Levin et al., 2011: 935).

Propinguity effect. In the social network literature researchers are paying increasing attention to the role of physical space (adams, Faust, & Lovasi, 2012). Solidarity and cooperation are often intensified by face-to-face interaction, and actors who are located closer together in physical space are more likely to interact and form ties-an effect first identified by Festinger, Back, and Schachter (1950). The effect is well known among technology innovation researchers: Allen (1977) found that while interaction enhanced innovative output in R&D laboratories, such interaction happened far less frequently when offices were more than 15.2 meters from each other. More recently, Reagans (2011) analyzed data on tie strength among teachers working in five public schools and found that if teachers had classrooms on the same floor or took breaks at the same time, they communicated more frequently and felt closer. Moreover, he found that close ties among socially similar

teachers were amplified if they worked in physical proximity; thus, age-similar teachers who had classrooms on the same floor had the strongest network connections. Interestingly, the propinquity effect was found even within a digital media industry that famously relies on digital technologies to enable distance work. Neff (2005) found that the designers and front-office employees in New York's internet industry clustered around a very narrow swath of Manhattan in order to benefit from networking events within the industry-cocktail parties, seminars, ceremonies, and the like. At the organizational level, examining patenting activity for United States-based life science firms in industrial districts and regional clusters, Whittington, Owen-Smith, and Powell (2009) found that physical proximity to similar firms significantly increases a company's patenting output. The role of physical distance and proximity is likely to remain an exciting area of research.

Motivation

In our 2002 article we argued that the flow of social capital resources cannot be explained simply by the graph structure of social networks. Resources potentially available through social networks only reach the focal actors when the alters are motivated to share resources with the focal actors (Etzioni, 2001). In arguing for the importance of motivation, we pitted ourselves against two alternatives: first, against rational actor perspectives, which assume that all actors are identically motivated by self-interest, and second, against the strong version of formalistic network sociology, which posits motivation as the effect of network structure (e.g., Burt, 1992: 32-34; Uzzi, 1999: 500). Both these lines of argument appeared to us overstated-heuristically productive perhaps, but overstated nevertheless. In contrast, by distinguishing the integrated versus fragmented structure of networks from the shared versus divergent nature of values, Baker and Faulkner (2009) have generated a fruitful fourfold typology of societal social capital structures.

The literature has pointed to norms, values, trust, and community membership as the key sources of motivation for social capital. Studying social capital at the individual level, Smith (2005) found that among poor African-Americans, job contacts may be unwilling to help a job seeker, not because of the deficiencies in access to contacts but because they fear that recommending an unreliable worker will damage their own reputation. In other words, trust facilitates the activation of network ties in searching for a job (Smith, 2005, 2010). Studying whitecollar workers, Marin (2012) found that when someone does not pass on information about a possible job to a contact, this is often not because the first person has no social ties to the second, but because the first is hesitant to "intrude" without a clear indication that the second is serious about searching for a job.

In studying social capital at the community level, Baldassarri and Diani (2007) examined both the structure and content of civic association ties in two U.K. cities. They explained that "while network formal properties are important, they cannot be fully understood without referring to the content of ties.... it is by referring to the interplay between form and content of network ties that the peculiar structure of civic networks can be explained" (2007: 742). Using data from the Urban Communes Project, Vaisey (2007) examined why some of these communes experienced Gemeinschaft, the "we-feeling" of group solidarity and identification, while others did not. Vaisey distinguished between the structural and cultural mechanisms that contribute to the experience of community in communal groups, arguing that in this setting the existence of cultural influences and shared moral order, not social network ties as such, are the most likely source of community identity. Owen-Smith and Powell (2004) found a similar process operating at the organizational level when they studied the biotechnology community in the Boston metropolitan area. They found that when the network is dominated by public research organizations, where, as a result, norms allow easy sharing of information, all organizations in the network, regardless of their positions in the network, benefit in the form of higher patenting rates. In contrast, when the network is dominated by for-profit organizations, where, as a result, the flow of information is restricted, only those firms occupying central positions in the network benefit. This further highlights the importance of network norms relative to network position.

The motivational content of ties may affect not just the generation of social capital but also the duration of social capital. Notwithstanding the power of latent ties discussed above, ties that are based on an instrumental motivation-for example, to access alters' resources in order to complete a short-term project-are often shortlived and may not have much long-term effect. Among organizations, "connections are often forged with a specific goal in mind, such as taking a company public or selling and distributing a new medicine. Once the task is completed, the relationship is ended and successful collaborators depart gracefully" (Powell, White, Koput, & Owen-Smith, 2005: 1138). This pattern is also found at the individual level (Podolny & Baron, 1997). In this context social capital is not likely to be a durable resource unless instrumental motivations are complemented by other motivations.

In the work of some scholars, norms are generated exogenously, particularly from the network context. A study by Moody (2001) showed that whereas the general homophily preference promotes same-race friendships, school context can make cross-race ties more or less attractive, changing their motivational content and therefore making such ties more or less common. While Moody's study highlights the role of values at the organizational level, Xiao and Tsui (2007) expanded their focus to encompass both the organizational and national levels. In their study of the effect of structural holes in four high-tech companies in China, they found that while structural holes might bring positive returns such as a higher salary or bonus to individuals working in market-like, low-commitment organizations, structural holes were a handicap for individuals working in a clan-like, high-commitment culture. At the national level, their study shows that brokering behaviors are incompatible with the collectivistic values of China; this result is in stark contrast with the positive effects of structural holes found in studies using samples from individualistic cultures and further highlights the role of context in generating norms in social capital.

Ability

Because social capital is about relationships, researchers have not paid much attention to the characteristics of the actors involved in the relationships. However, as we argued in the 2002 article, if social capital is the resource provided by an actor's relationships, the magnitude of this resource is surely in part a function of those contacts' abilities to offer such resources.

People are likely to obtain social capital that is more valuable from alters who possess qualities, skills, and know-how that are complementary to their own and relevant to solving the particular problem or objective at hand. Consideration of this dimension of social capital affords insight into some of the dynamics of social capital formation. In studying coauthorship networks in science, Moody remarked, "In highgrowth, fast changing specialties, we would expect to see more coauthorship because it is easier to bring in a new author than it is to learn new material oneself" (2004: 217). Indeed, Moody (2004) found that, compared to researchers who have never published quantitative work, researchers whose work requires familiarity with both theory and methodology are more than five times likely to coauthor a paper. At the organizational level, firms exhibit a preference for collaborating with younger, less connected organizations over well-established, highly connected firms because the former firms are often the source of novel knowledge (Powell et al., 2005). Venture syndicates are more likely among partners with different skills (Sorenson & Stuart, 2008).

Obukhova's (2012) study of job referrals explains how ability interacts with motivation to shape social capital outcomes. Obukhova argues that strong ties provide the alter more motivation to provide job referrals, but the alters most motivated to help the job seeker might not always be the ones best able to find a job matching the seeker's skills and aspirations. Although family members and close friends may be most motivated to help the job seeker, they may not be the best placed to help.

Our 2002 argument focused on alters' abilities, but another critical factor is the "social skill" of the focal actor. Fligstein (2001) made a compelling case for the importance of social skill—the ability of actors to induce cooperation in other actors in order to produce, contest, or reproduce a given set of rules (Fligstein & McAdam, 2012; Joas, 1996). Along similar lines, Obstfeld (2005) found that individuals who are active in introducing dissimilar others and successful in facilitating collective action among them are more often involved in innovative activities. Mehra, Kilduff, and Brass (2001) argued that central positions in social networks are more likely to be

occupied by chameleon-like high self-monitors than true-to-themselves low self-monitors, and this difference helps predict individuals' workplace performance. Baron and Markman (2003) suggested that entrepreneurs' social competence influences their business success. The higher the entrepreneurs' ability to interact effectively with others-as evidenced by such social skills as accurate perception of others, impression management, and persuasivenessthe greater their financial success. Whether the actor is working in the mode of tertius gaudens (spanning structural holes and deriving individual benefit from remaining the sole bridge between other actors; see Burt, 1997) or in the mode of tertius jungens (bringing otherwise disconnected actors together for collective action; see Obstfeld, 2005), social skill is a critical ingredient in the successful mobilization of potential social capital.

However, it is less clear how to use the concept of social skill when we shift focus from the individual to the organizational actor. At the risk of anthropomorphizing organizations (as noted by Sorenson & Rogan, in press), some researchers have applied to organizations constructs like trust and cooperation, which were originally developed in the context of interpersonal relationships (Gulati, 1995; Uzzi, 1997). In analyzing the related social skills, some treat the social skills of organizations as reducible to those of their members who are playing boundary-spanning roles (Baker & Faulkner, 1993; Haunschild, 1993). Future research will need to clarify the crosslevel dynamics of social capital.

NEW DIRECTIONS

In this section we identify three particularly promising areas of future research.

Social Capital and Inequality

To date, social capital scholarship has mainly focused on the horizontal structuring of societies and organizations and has paid less attention to their vertical structuring. Since our 2002 article, the Occupy movement has brought inequality in these vertical structures back into focus for scholarly and public debate. The inequalities characterizing contemporary social relations—of wealth and income, between races and genders—shape social capital very deeply, and, in turn, social capital is implicated in both the reproduction of these inequalities and in movements attempting to challenge them.

On the reproduction side, Domhoff long ago documented the extensive social ties and social bonding that consolidated a "ruling class" in the United States (Domhoff, 1967, updated at WhoRulesAmerica.net). If social capital is about deriving benefits from social relations, one has to take seriously the high variance in actors' social ties and the resulting inequality of social capital. Social network research shows that most actors have only a few ties, while a small number have many (Rivera, Soderstrom, & Uzzi, 2010). For example, an analysis of the online friendships of 4.2 million people on Facebook found a very skewed distribution: a few individuals had more than 10,000 friends, more than 55 times as many as the average user's 180 (Golder, Wilkinson, & Huberman, 2007). On the corporate side, Davis, Yoo, and Baker (2003) examined the network of corporate board memberships in the United States between 1982 and 2001 and found that the average director was connected to 16 other directors, but a few had interlock ties to as many as 100.

Such network inequality can lead to cumulative advantage, known as the Matthew effect (Merton, 1968): high-status people benefit from network effects more than their lower-status counterparts. For example, the association between using networks to find jobs and job quality is stronger for high socioeconomic status workers than for low socioeconomic status workers (Ioannides & Loury, 2004) and stronger for men than for women (Åberg & Hedström, 2011). In education, "students at the high end of the ability distribution experience the largest peer effects from high ability peers" (Sacerdote, 2011: 260). Smith, Menon, and Thompson (2011) found that one's perception of one's own status also influences whether one decides to use social capital or not. These researchers argue that high-status people activate larger sections of their networks than do low-status individuals because they believe they have more power and, thus, are likely to act optimistically by calling on more contacts for job search. At the macro level, the benefits to entrepreneurs of community social capital are not distributed equally: Kwon, Heflin, and Ruef (2013) found that marginal low-status members of a communitythose who recently relocated to the community,

immigrants, and ethnic minorities—benefit far less from community-level social capital. Reviewing the extensive literature on this topic, DiMaggio and Garip (2012) conclude that social networks can amplify differences in individual endowments and exacerbate social inequality, and they identify several mechanisms through which networks may generate higher levels of intergroup inequality than one would expect based on differences in initial endowments alone.

On the contestation side, a rich stream of scholarship has documented the role of social ties in mobilizing oppositional social movements (Diani, 1997; Edelman, 2001; Lim, 2008). Social capital can be a powerful glue bringing and holding together social movements (Edwards, 2013). Yet a considerable body of social movement research passes over this crucial mechanism and focuses instead on either individual factors (identification, relative deprivation) or structural factors (resources, political opportunity, cultural frames). Passy (2003) identified three key functions that social capital plays in social movements, each helping to bridge those psychological and structural factors: (1) socializing individuals, cultivating their interpretative frames and facilitating identification; (2) mobilizing individuals and groups-in the absence of ties, mobilization is considerably more difficult; and (3) shaping individuals' decisions on whether to participate in movement activity. In recent years, of course, we have heard numerous references to "terrorist" social movements. We are led to believe that government agencies in intelligence and law enforcement are using the vast amount of data collected, legally or not, to identify terrorist networks (Keefe, 2006; Perliger & Pedahzur, 2011; Ressler, 2006). The analysis of collectivities in the gray zone between movements and formal organizations has emerged as an area potentially rich in lessons of various kinds (Davis, 2005).

Different Types of Social Capital

A small but persistent stream of research addresses—explicitly or implicitly—the "dark side" of social capital: its capacity to fragment broader collectivities in the name of local, particularistic identities. Portes and Vickstrom (2011) argue that social capital research has too often been blind to this risk, treating it as an afterthought rather than as fundamental to any discussion of social capital in the world today, where such particularistic identities appear resurgent in so many regions. Against the divisive dangers of "mechanistic" solidarities founded on homophilic attraction among people anxious to express their similarities, these researchers counterpose the virtues of "organic" solidarities uniting larger, more diverse collectivities that celebrate the interdependencies woven among their differences.

The Adler, Kwon, and Heckscher (2008) discussion of different forms of community can be read as a further effort to create a typology of social capital. Building on Weber's, this work differentiates traditionalistic, charismatic, instrumentally rational, and value rational types of community. From this vantage point, Portes and Vickstrom's critique can be read as directed at the traditionalistic, Gemeinschaft form of social capital, which indeed is often assumed to be the defining quality of community itself. The Adler et al. (2008) argument is that community and social capital can alternatively take any of these other forms, with very different effects; each has its own benefits, as well as costs and risks.

Causality

Portes and Vickstrom (2011) have reviewed some of the cross-section evidence offered by Putnam (2000) for the power of social capital and have used lagged models to show that social capital is as much the result as the cause of such socioeconomic conditions as levels of poverty and economic inequality. Durlauf (2002), too, has argued that much of the empirical research on social capital fails to adequately consider the possibility of bias due to endogeneity. This problem arises because people tend to connect with others who are similar to them. As a result, it is quite possible that some effects attributed to social capital are, in reality, due to selection (Mouw, 2003, 2006; Shalizi & Thomas, 2011). For example, if a cross-sectional study detected a tendency of influential managers to be more central in their networks, we would want to know whether this finding was evidence that influential individuals had more ties or that those with more ties became influential.

Lizardo's (2006) research challenges the social capital thesis that network ties drive attitudes. Lizardo found that highbrow tastes in music lead to denser networks of strong ties, whereas preferences for popular music lead to an increase in weak ties to more distant segments of the social structure. In these settings different prior taste dispositions lead to the formation of different network relations, rather than the other way around. Similarly, Vaisey and Lizardo (2010), drawing on two waves of nationally representative panel data, found that world views are strong predictors of network ties among U.S. youth but that there is little evidence that network ties play a strong role in shaping world views. Moreover, ties to alters whose behaviors, tastes, or expressive style are incompatible with the focal actor's moral cultural world view tend to decay more quickly than ties to others who exhibit compatible cues.

Other studies, however, have found surprisingly powerful causal effects of social capital. For example, using the random assignment of MBA students to sections at Harvard Business School as a quasi-experimental context where ties result from choices that could not be influenced by self-selection, Shue (2013) explored how executive peer networks can affect managerial decision making. She found that among executives who are alumni from a given Harvard Business School class, firm-level outcomes, such as executive compensation and acquisitions strategy, are significantly more similar among graduates from the same section than among graduates from different sections.

Overall, the evidence reviewed in Mouw's (2006) study suggests that, when the problem of network endogeneity is taken into consideration, the resulting effects of social capital are typically less dramatic. To resolve the causality issue, Mouw identifies a number of approaches. We second his call for more careful attention to endogeneity in future social capital research.

CONCLUSION

Upon reviewing the past decade's research on social capital and the way the term has penetrated so many social science fields, it is difficult to avoid the impression that the basic thesis—that social ties can be efficacious in providing information, influence, and solidarity—is no longer in dispute. The concept has blossomed into a field. As a result, the topics that appear to galvanize interest among researchers today seem to be more discipline and topic specific. This suggests that social capital citations may indeed be at an inflexion point—as suggested by the most recent data in Figure 1—and likely to slow down in the coming years. If so, it will be a signal of scientific success rather than failure.

REFERENCES

- Åberg, Y., & Hedström, P. 2011. Youth unemployment: A selfreinforcing process? In P. Demeulencere (Ed.), *Analytical sociology and social mechanisms:* 201–206. Cambridge: Cambridge University Press.
- adams, j., Faust, K., & Lovasi, G. S. 2012. Capturing context: Integrating spatial and social network analyses. *Social Networks*, 34: 1–5.
- Adler, P. S., & Kwon, S.-W. 2002. Social capital: Prospects for a new concept. Academy of Management Review, 27: 17–40.
- Adler, P. S., Kwon, S., & Heckscher, C. 2008. Professional work: The emergence of collaborative community. Organization Science, 19: 359–376.
- Allen, T. J. 1977. Managing the flow of technology: Technology transfer and the dissemination of technological information within the R&D organization. Cambridge, MA: MIT Press.
- Baker, W. B., & Faulkner, R. R. 1993. The social organization of conspiracy: Illegal networks in the heavy electrical equipment industry. *American Sociological Review*, 58: 837–860.
- Baker, W. B., & Faulkner, R. R. 2009. Social capital, double embeddedness, and mechanisms of stability and change. *American Behavioral Scientist*, 52: 1531–1555.
- Baldassarri, D., & Diani, M. 2007. The integrative power of civic networks. *American Journal of Sociology*, 113: 735– 780.
- Baron, R. A., & Markman, G. D. 2003. Beyond social capital: The role of entrepreneurs' social competence in their financial success. *Journal of Business Venturing*, 18: 41– 60.
- Bernard, H. R., Killworth, P. D., & Sailer, L. 1979. Informant accuracy in social network data IV: A comparison of clique-level structure in behavioral and cognitive network data. Social Networks, 2: 191–218.
- Burt, R. S. 1992. Structural holes: The social structure of competition. Cambridge, MA: Harvard University Press.
- Burt, R. S. 1997. The contingent value of social capital. Administrative Science Quarterly, 42: 339–365.
- Burt, R. S. 2005. Brokerage and closure: An introduction to social capital. Oxford & New York: Oxford University Press.
- Chen, M.-J. 1996. Competitor analysis and interfirm rivalry:

Toward a theoretical integration. Academy of Management Review, 21: 100–134.

- Chen, M.-J., Kuo-Hsien, S., & Tsai, W. 2007. Competitive tension: The awareness-motivation-capability perspective. Academy of Management Journal, 50: 101–118.
- Cohen, L., Frazzini, A., & Malloy, C. 2008. The small world of investing: Board connections and mutual fund returns. *Journal of Political Economy*, 116: 951–979.
- Davis, G. F. 2005. Social movements and organization theory. New York: Cambridge University Press.
- Davis, G. F., Yoo, M., & Baker, W. E. 2003. The small world of the American corporate elite, 1982–2001. Strategic Organization, 1: 301–326.
- Diani, M. 1997. Social movements and social capital: A network perspective on movement outcomes. *Mobilization: An International Quarterly*, 2: 129–147.
- DiMaggio, P., & Garip, F. 2012. Network effects and social inequality. Annual Review of Sociology, 38: 93–118.
- Domhoff, G. W. 1967. *Who rules America*? Englewood Cliffs, NJ: Prentice-Hall.
- Durlauf, S. N. 2002. On the empirics of social capital. Economic Journal, 112: F459–F479.
- Durlauf, S. N., & Fafchamps, M. 2005. Social capital. In A. Philippe & N. D. Steven (Eds.), *Handbook of economic* growth, vol. 1, part B: 1639–1699. San Diego: Elsevier.
- Edelman, M. 2001. Social movements: Changing paradigms and forms of politics. *Annual Review of Anthropology*, 30: 1173–1176.
- Edwards, B. 2013. Social capital and social movements. The Wiley-Blackwell encyclopedia of social and political movements. New York: Wiley-Blackwell.
- Etzioni, A. 2001. Is bowling together sociologically lite? Contemporary Sociology, 30: 223–224.
- Festinger, L., Back, K. W., & Schachter, S. 1950. Social pressures in informal groups: A study of human factors in housing. Stanford, CA: Stanford University Press.
- Fligstein, N. 2001. Social skill and the theory of fields. Sociological Theory, 19: 105–125.
- Fligstein, N., & McAdam, D. 2012. *A theory of fields.* New York: Oxford University Press.
- Frank, K. A. 2009. Quasi-ties directing resources to members of a collective. *American Behavioral Scientist*, 52: 1613– 1645.
- Glanville, J. L., & Bienenstock, E. J. 2009. A typology for understanding the connections among different forms of social capital. *American Behavioral Scientist*, 52: 1507– 1530.
- Golder, S., Wilkinson, D., & Huberman, B. 2007. Rhythms of social interaction: Messaging within a massive online network. In C. Steinfield & N. Contractor (Eds.), *Communities and technologies:* 41–66. London: Springer.
- Gulati, R. 1995. Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. Academy of Management Journal, 38: 85–112.
- Haunschild, P. 1993. Interorganizational imitation: The im-

pact of interlocks on corporate acquisition activity. Administrative Science Quarterly, 38: 564–592.

- Hayami, Y. 2009. Social capital, human capital and the community mechanism: Toward a conceptual framework for economists. *Journal of Development Studies*, 45: 96–123.
- Hurlbert, J. S., Haines, V. A., & Beggs, J. J. 2000. Core networks and tie activation: What kinds of routine networks allocate resources in nonroutine situations? *American Soci*ological Review, 65: 598–618.
- Ioannides, Y. M., & Loury, L. D. 2004. Job information networks, neighborhood effects, and inequality. *Journal of Economic Literature*, 42: 1056–1093.
- Janicik, G. A., & Larrick, R. P. 2005. Social network schemas and the learning of incomplete networks. *Journal of Per*sonality and Social Psychology, 88: 348–364.
- Joas, H. 1996. *The creativity of action*. Chicago: University of Chicago Press.
- Kadushin, C. 2004. Too much investment in social capital? Social Networks, 26(1): 75–90.
- Keefe, P. R. 2006. Can network theory thwart terrorists? New York Times Magazine, March 12: http://query.nytimes. com/gst/abstract.html?res=9B0CE5DB1531F931A25750C0 A9609C8B63.
- Kilduff, M., Crossland, C., Tsai, W., & Krackhardt, D. 2008. Organizational network perceptions versus reality: A small world after all? Organizational Behavior and Human Decision Processes, 107: 15–28.
- Kilduff, M., & Krackhardt, D. 1994. Bringing the individual back in: A structural analysis of the internal market for reputation in organizations. Academy of Management Journal, 37: 87–108.
- Kilduff, M., Tsai, W., & Hanke, R. 2006. A paradigm too far? A dynamic stability reconsideration of the social network research program. *Academy of Management Review*, 31: 1031–1048.
- Kim, P. H., & Aldrich, H. E. 2005. Social capital and entrepreneurship. Boston: Now.
- Kwon, S. W., Heflin, C., & Ruef, M. 2013. Community social capital and entrepreneurship. *American Sociological Review*, 78: 980–1008.
- Lawrence, B. S. 2006. Organizational reference groups: A missing perspective on social context. Organization Science, 17: 80–100.
- Levin, D. Z., Walter, J., & Murnighan, J. K. 2011. Dormant ties: The value of reconnecting. Organization Science, 22: 923–939.
- Lim, C. 2008. Social networks and political participation: How do networks matter? Social Forces, 87: 961–982.
- Lizardo, O. 2006. How cultural tastes shape personal networks. American Sociological Review, 71: 778–807.
- MacInnis, D. J., Moorman, C., & Jaworski, B. J. 1991. Enhancing and measuring consumers' motivation, opportunity, and ability to process brand information from ads. *Journal of Marketing*, 55: 32–53.
- Marin, A. 2012. Don't mention it: Why people don't share job

information, when they do, and why it matters. *Social Networks*, 34(2): 181–192.

- Mariotti, F., & Delbridge, R. 2012. Overcoming network overload and redundancy in interorganizational networks: The roles of potential and latent ties. Organization Science, 23: 511–528.
- Maurer, I., Bartsch, V., & Ebers, M. 2011. The value of intraorganizational social capital: How it fosters knowledge transfer, innovation performance, and growth. Organization Studies, 32: 157–185.
- Mehra, A., Kilduff, M., & Brass, D. J. 2001. The social networks of high and low self-monitors: Implications for workplace performance. *Administrative Science Quarterly*, 46: 121–146.
- Merton, R. K. 1968. Social theory and social structure (1968 enlarged ed.). New York: Free Press.
- Moody, J. 2001. Race, school integration, and friendship segregation in America. *American Journal of Sociology*, 107: 679–716.
- Moody, J. 2004. The structure of a social science collaboration network: Disciplinary cohesion from 1963 to 1999. *American Sociological Review*, 69: 213–238.
- Moody, J., & Paxton, P. 2009. Building bridges linking social capital and social networks to improve theory and research introduction. *American Behavioral Scientist*, 52: 1491–1506.
- Mouw, T. 2003. Social capital and finding a job: Do contacts matter? *American Sociological Review*, 68: 868–898.
- Mouw, T. 2006. Estimating the causal effect of social capital: A review of recent research. Annual Review of Sociology, 32: 79–102.
- Neff, G. 2005. The changing place of cultural production: The location of social networks in a digital media industry. Annals of the American Academy of Political and Social Science, 597: 134–152.
- Obstfeld, D. 2005. Social networks, the tertius iungens orientation, and involvement in innovation. *Administrative Science Quarterly*, 50: 100–130.
- Obukhova, E. 2012. Motivation vs. relevance: Using strong ties to find α job in urban China. *Social Science Research*, 41: 570–580.
- Obukhova, E., & Lan, G. 2013. Do job seekers benefit from contacts? A direct test with contemporaneous searches. *Management Science*, 59: 2204–2216.
- Owen-Smith, J., & Powell, W. W. 2004. Knowledge networks as channels and conduits: The effects of spillovers in the Boston biotechnology community. **Organization Science**, 15: 5–21.
- Passy, F. 2003. Social networks matter. But how? In M. D. Diani & D. McAdam (Eds.), Social movements and networks: Relational approaches to collective action: 21–48. New York: Oxford University Press.
- Perliger, A., & Pedahzur, A. 2011. Social network analysis in the study of terrorism and political violence. PS: Political Science and Politics, 44: 45–50.
- Podolny, J. M., & Baron, J. N. 1997. Resources and relation-

ships: Social networks and mobility in the workplace. *American Sociological Review*, 62: 673–693.

- Portes, A., & Vickstrom, E. 2011. Diversity, social capital, and cohesion. Annual Review of Sociology, 37: 461–479.
- Powell, W. W., White, D. R., Koput, K. W., & Owen-Smith, J. 2005. Network dynamics and field evolution: The growth of interorganizational collaboration in the life sciences. *American Journal of Sociology*, 110: 1132–1205.
- Putnam, R. D. 2000. Bowling alone: The collapse and revival of American community. New York: Simon and Schuster.
- Reagans, R. 2011. Close encounters: Analyzing how social similarity and propinquity contribute to strong network connections. **Organization Science**, 22: 835–849.
- Renzulli, L. A., & Aldrich, H. 2005. Who can you turn to? Tie activation within core business discussion networks. *Social Forces*, 84: 323–341.
- Ressler, S. 2006. Social network analysis as an approach to combat terrorism: Past, present, and future research. *Homeland Security Affairs*, 2(2): 1–10.
- Rivera, M. T., Soderstrom, S. B., & Uzzi, B. 2010. Dynamics of dyads in social networks: Assortative, relational, and proximity mechanisms. *Annual Review of Sociology*, 36: 91–115.
- Robison, L. J., Schmid, A. A., & Siles, M. E. 2002. Is social capital really capital? *Review of Social Economy*, 60: 1–21.
- Sacerdote, B. 2011. Peer effects in education: How might they work, how big are they and how much do we know thus far? Handbook of the Economics of Education, 3: 249–277.
- Schuller, T. 2007. Reflections on the use of social capital. *Review of Social Economy*, 65: 11–28.
- Shalizi, C. R., & Thomas, A. C. 2011. Homophily and contagion are generically confounded in observational social network studies. *Sociological Methods and Research*, 40: 211–239.
- Shue, K. 2013. Executive networks and firm policies: Evidence from the random assignment of MBA peers. *Re*view of Financial Studies, 26: 1401–1442.
- Slotte-Kock, S., & Coviello, N. 2010. Entrepreneurship re-

search on network processes: A review and ways forward. Entrepreneurship Theory and Practice, 34: 31–57.

- Smith, E. B., Menon, T., & Thompson, L. 2011. Status differences in the cognitive activation of social networks. Organization Science, 23: 67–82.
- Smith, S. S. 2005. "Don't put my name on it": Social capital activation and job-finding assistance among the black urban poor. *American Journal of Sociology*, 111: 1–57.
- Smith, S. S. 2010. Race and trust. Annual Review of Sociology, 36: 453–475.
- Sorenson, O., & Rogan, M. In press. (When) do organizations have social capital? Annual Review of Sociology, 40.
- Sorenson, O., & Stuart, T. E. 2008. Bringing the context back in: Settings and the search for syndicate partners in venture capital investment networks. *Administrative Science Quarterly*, 53: 266–294.
- Uzzi, B. 1997. Social structure and competition in interfirm networks: The paradox of embeddedness. Administrative Science Quarterly, 42: 35–67.
- Uzzi, B. 1999. Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing. *American Sociological Review*, 64: 481–505.
- Vaisey, S. 2007. Structure, culture, and community: The search for belonging in 50 urban communes. *American Sociological Review*, 72: 851–873.
- Vaisey, S., & Lizardo, O. 2010. Can cultural worldviews influence network composition? *Social Forces*, 88: 1595– 1618.
- Whittington, K. B., Owen-Smith, J., & Powell, W. W. 2009. Networks, propinquity, and innovation in knowledgeintensive industries. *Administrative Science Quarterly*, 54: 90–122.
- Woolcock, M. 2010. The rise and routinization of social capital, 1988–2008. Annual Review of Political Science, 13: 469–487.
- Xiao, Z., & Tsui, A. 2007. When brokers may not work: The cultural contingency of social capital in Chinese high-tech firms. *Administrative Science Quarterly*, 52: 1–31.

Seok-Woo Kwon (kwon@temple.edu) is an assistant professor of strategic management at Temple University. He received his Ph.D. from the University of Southern California. His research interests include entrepreneurship, technology management, and organization theory.

Paul S. Adler (padler@usc.edu) is currently Harold Quinton Chair in Business Policy at the Marshall School of Business, University of Southern California. He grew up and started his education in Australia, received his Ph.D. in economics and management in France, and moved to the United States in 1981. His research and teaching focus on organization strategy and design and business/government/society interactions.