REVIEW OF SOCIAL CAPITAL CONCEPTS AND THEORIES: FINDING BENEFITS AND COSTS

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Abstract

In our paper we have made an attempt to make a literature review of social capital concepts and theories. We have chosen 25 most citated social capital related literature. First, we have looked through definitions of social capital; have covered existing approaches. Then, we focused in dimensions and drivers of social capital. We defined private and public benefits and costs of social capital. Also we found from review the high importance of trust and norms in social relations.

Key words: social capital, trust, review, norms

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1. Introduction

The main problem concerning economic analysis of what has been termed 'social capital' is that in the literature this term is very heterogeneous; the notion of social capital is not always defined or assessed on clear theoretical and applied grounds. This is probably due to the emphasis on inter-disciplinary research, which characterized the social capital arena in the 1990s, and in the initial phase of work in this area was needed to generate a conceptual and theoretical debate. Among the various definitions and metaphors that occur in the literature, the following are the most relevant for defining the boundaries of the issue: first, "a variety of different entities with two factors in common: they all consist of some aspects of social structure, and they facilitate certain actions – whether personal or corporate actors – within the structure" (Coleman, 1988); second, "those features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam, 1993); third, "a glue that holds societies together" (Serageldin, 1996). Based on these definitions, social capital is possibly identifiable with the 'culture' of a group of agents, a culture of economic reciprocity and cooperation. More generally, there are two issues that arise from the socio-economic literature: 'trust' and 'ease of cooperation'. Paldam (2000) specifically provides meanings revolving around the notion of trust, cooperation and network. The author correctly defines social capital as the glue generating excess cooperation. Trust and ease of cooperation interact in the production of private and public goods, or forms of capital.

Existing of different approaches, unclear definition, the strong interest among researchers to the topic of social capital generated the need to clarify the concepts and make a literature review of theories and concepts, in the same time the need to understand what are the real costs and benefits of social capital.

2. Review of three approaches to social capital

In the past two or three decades, scholars have taken an interest in three different perspectives on social capital in particular.

2.1. Approach of Pierre Bourdieu to social capital

The influential French sociologist Pierre Bourdieu (1930–2002) was interested in the ways in which society is reproduced, and how the dominant classes retain their position. For Bourdieu, this could not be explained by economics alone, and he is especially known for his discussion of *cultural* capital – the ways in which people would use cultural knowledge to undergird their place in the hierarchy. His most famous book, *Distinction* (1984), explores the ways in which the trappings of middle-class taste and cultivation are used by people as cultural signifiers, as they seek to identify themselves with those 'above' them on the social ladder, and to demonstrate their difference from those 'below'. This is not an especially creative struggle, and serves to reinforce those middle-class pretentions. Nevertheless, *Distinction* was groundbreaking as a detailed study of the ways in which cultural artefacts and knowledge were brought into play, alongside basic economics, in the dynamics of social class relations.

He goes on to define social capital as follows: Social capital is the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition. (Bourdieu, in Bourdieu &Wacquant, 1992: 119)

This definition, in itself, is similar to other definitions. Where other writers see social capital as a fundamentally heartwarming network of social connections, however, Bourdieu uses it to explain the cold realities of social inequality. Here, social capital reflects the very worst side of the saying, 'It's not what you know, it's*who* you know'. Bourdieu could well be right – in fact, studies of social mobility continue to show that, to varying degrees, this is what happens. As a use of the idea of social capital, though, it is the most depressing of the models, as its focus is only upon the middle and upper classes making sure that their spheres remain exclusive. Although distinct from economic capital, and operating in a different way, it is inseparable from it. Here, social capital is another tool in the armory of the elite, deployed to ensure that the 'wrong' kind of people don't enter their circles (Bourdieu, 1986, 1992).. The Bourdieu approach is an important reminder that social capital can be exclusionary. Bourdieu likes to talk about people actively 'playing the game', but ultimately sees them as pretty powerless (Gauntlett, 2007: 63–70). On the one hand he highlights the individual's subjective experience, which – if we simplify a bit – he calls the 'habitus', and its dialectical relationship with the wider world (which he calls the 'field'). But, as Richard Jenkins has said, Bourdieu tends to assign so much power to the social context that his universe 'ultimately remains one in which things happen to people, rather than a world in which they can intervene in their individual and collective destinies' (Jenkins, 2002: 91). His version of social capital lands in this context, offering an explanation of the ways in which those at the top of social hierarchies can hold onto their position through a range of subtle techniques which cumulatively form an iron grip.

2.2. Approach of James Coleman to social capital

The eminent American sociologist James Coleman (1926–95) also linked social capital with economics, but in a different way. He sought to combine the insights of sociology and economic theory, seeing social capital as a way of making sense of the overly rational and individualistic models of traditional economics. In particular, he used it to give a human and more collective social face to rational choice theory, which seemed to offer a grand predictive model of how things work, but – less helpfully – saw people more like ants in an ant farm, than as citizens in a civilization. Coleman's approach leads to a broader view of social capital, where it is not seen only as stock held by powerful elites, but notes its value for all kinds of communities, including the powerless and marginalized. He opens his key paper introducing social capital by outlining 'two broad intellectual streams in the description and explanation of social action' (Coleman, 1988: 95). The first is the sociological approach, which sees the individual in a social and cultural environment, subject to 'norms, rules, and obligations'. The second is the economic approach, which is about self-interested, independent individuals seeking to fulfil their goals. He says that the problem with the first one is that if the actor is a product of their environment, then they have no 'internal springs of action,' and no individual drive or purpose. But, despite being drawn to the elegance of economic models, Coleman saves particular scorn for this second approach: The economic stream, on the other hand, flies in the face of empirical reality: persons' actions are shaped, redirected, constrained by the social context; norms, interpersonal trust, social networks, and social organization are important in the functioning not only of the society but also of the economy. (Coleman, 1988: 96)

Coleman seeks to develop a version of sociology which borrows from both these streams, taking in particular the economist's idea of a rational individual engaging in purposive action, but using it to 'account not only for the actions of individuals in particular contexts but also for the development of social organization' (1988: 96).

He proposes a model in which social capital is one of the potential resources which an actor can use, alongside other resources such as their own skills and expertise (human capital), tools (physical capital), or money (economic capital). Unusually, though, social capital is not necessarily 'owned' by the individual but instead arises as a resource which is *available* to them.

Coleman also highlights the role of social capital as a source of useful everyday information, and of norms and sanctions, which can facilitate certain kinds of actions, but can also be restrictive (Coleman, 1988: 104–5). In particular he singles out 'one effect of social capital that is especially important: its effect on the creation of human capital in the next generation' (ibid: 109). This 'human capital', such as a secure sense of self-identity, confidence in expressing one's own opinions, and emotional intelligence, enables young people to become better learners, and so to be more successful in school and in society. This human capital emerges out of social capital, because this kind of development depends upon *relationships*, most obviously within the family (or other support network). As Coleman points out: If the human capital possessed by parents is not complemented by social capital embodied in family relations, it is irrelevant to the child's educational growth that the parent has a great deal, or a small amount, of human capital. (Coleman, 1988: 110)

Coleman's theory assumes: Social capital is an important resource for individuals and may affect greatly their ability to act and their perceived quality of life. They have the capability of bringing it into being. Yet, because the benefits of actions that bring social capital into being are largely experienced by persons other than the actor, it is often not in his interest to bring it into being. (Coleman, 1988: 118)

One can think that he could overcome this problem by suggesting that when people are altruistic, they might still be carrying the (perfectly reasonable) hope that if one gives support to others, one contributes to a general culture of community helpfulness and support, which might ‘pay off’ one day when we ourselves need a hand. But actually Coleman gets around the apparent ‘irrationality’ of altruistic behavior by saying that social capital arises as a ‘by-product’ of other activities.

John Field notes, Coleman has in common with Bourdieu that ‘neither pays much heed to affect, to the fact that people like, love or loathe one another – and therefore associate together or avoid each other – for reasons that lie outside the domain of rational calculation’ (2008: 31).

Indeed, the irrationality of human beings has become a whole field of study in itself. This research is nicely summarized in Joseph Hallinan’s book *Errornomics*(2009), which digests the evidence into chapters which answer the question of why people make mistakes under headings such as ‘We all think we’re above average’, ‘We skim’, ‘We look but don’t always see’, ‘We wear rose-coloured glasses’, and ‘We’d rather wing it’.

Coleman’s contributionoffers a broader view of social capital. Unlike Bourdieu’s pessimistic description of the eternal self-reproduction of elites, Coleman highlights the usefulness of social capital as part of a potential solution for marginalized learners, and its importance in parenting, for people of any social class. Less helpfully, he doesn’t seem willing to entirely follow through on his own observations about the limitations of rational, individualistic economic theory.

2.3. Putnam's concept of social capital

At the beginning of his "Making Democracy work" Putnam says that in drawing his conclusions about Italy's governmental reforms during the last few decades. The main question of Putnam's Italian study is: what are the preconditions for the development of strong, responsive representative institutions and a prosperous economy? The governmental reform of 1976-77 in Italy, responsible for establishing new bodies of local government, offers a good opportunity to provide an answer to this question. The main result of Putnam's study is that governmental reform succeeded well in Northern Italy because it was supported by a florescence of "civic community". This was also the main reason for the economic prosperity of Northern Italy in comparison with the Southern part of the country. In areas with a well-functioning local government and a prosperous economy, the public activity of citizens has created an atmosphere of mutual co-operation, vital social networks, equal political relations and the tradition of citizen participation. Behind all of these phenomena radiates the ethos of mutual trust between citizens (Putnam 1993, 6-7). The activity of a civic community, a major factor behind economic and governmental effectiveness, is measured in Putnam's study in terms of voting activity, the reading of newspapers, and participation in sports clubs and voluntary cultural associations. The result of regional comparison is as follows:

"In the North the crucial social, political, and even religious allegiances and alignments were horizontal, while those in the South were vertical. Collaboration, mutual assistance, civic obligation, and even trust - not universal, or course, but extending further beyond the limits of kinship than anywhere else in Europe in this era - were the distinguishing features in the North. The chief virtue in the South, by contrast, was the imposition of hierarchy and order on latent anarchy"

These differences between horizontal and vertical patterns of organizing social allegiances and alignments had fatal consequences for the development of political actors. "In the North people were citizens, in the South they were subjects". The quality of the civil society "predestined" to a large extent the future economic and political development of the region. Putnam calls this historical ballast (or treasure) "path dependence": "where you can get to depends on where you are coming from, and some destinations you simply cannot get to from here" (op. cit. 179). The concept of social capital expresses the sociological essence of communal vitality. A solution to the problem of common action and opportunism presupposes the development of voluntary collective action, and it is connected to the inherited social capital in the community. Forms of social capital are general moral resources of the community, and they can be divided into three main components: first, trust (and more generally 'positive' values with respect to development); second, social norms and obligations; and third, social networks of citizens' activity, especially voluntary associations.

3.Role of trust in social capital

When we speak about trust in modern societies we speak about "generalized trust". Individual actors do something for the general good not because they know other interactors but because they trust that their own action will be "rewarded" via the positive development of communal relations (see Newton 1999). In the modern world we will need trust when we leave the sphere based on familiarity and enter a world dominated by contingency, complexity and risk (see Luhmann 1988; 1991). Trust is needed when role expectations and familiar relationships no longer help us to anticipate the reactions of our individual or collective interaction partners. In situations of this kind, people gather the harvest whose seeds have been sown in the micro interactions of the past (see Seligman 1997). Choices in micro-level interactions produce, first, mutual reciprocity and trust; and second, as a nonintended consequence of these choices, trust on a higher (macro) level, and thereby integrative values (or their absence) (Coleman 1988). This is the basis of social consensus. As Seligman puts it:

"The emphasis in modern societies on *consensus*.... (is) based on interconnected networks of trust - among citizens, families, voluntary organizations, religious denominations, civic associations, and the like. Similarly the very "legitimation" of modern societies is founded on the "trust" of authority and governments as generalizations“ (1997, 14)

Well-functioning modern societies have to have a value basis that is based on the voluntary regulation of social relations between persons who are foreigners to each other. Generalized trust creates the basis for "brave reciprocity", and social networks and associations that are not means for realizing the short-term interests of any specific groups. These two factors in turn create trust. The circle is ready: trust creates reciprocity and voluntary associations, reciprocity and associations strengthen and produce trust (see Putnam 1993, 163-185). The more social capital is used, the more it grows (Coleman 1988). The forms of social capital are self-reinforcing and cumulative by nature. Vicious circles are expressed in society as distrust, breaking of the norms of reciprocity, avoiding one's duties, isolation, disorder and stagnation. The result is the development of a 'non-civic community'. Virtuous (or rosy, see Govier 1997) circles, on the other hand, result in social equilibrium manifesting itself in a high level of co-operation, expanding trust, strong reciprocity, civic activity and collective well-being (Putnam 1993. 177).

One of Putnam's problems is the explanation of the origin of social trust. Modern (or premodern) “thick trust“develops in personal relations (see Newton 1999, 18-20). Social trust in complex, postindustrial (or postmodern) societies comes from two related sources: norms of reciprocity and networks of civic engagement (Putnam 1993, 171). However, in practice norms of reciprocity are functions of networks of reciprocity. Among these networks voluntary associations are superior in importance. In practice Putnam's civil society is reduced to the examination of the functions of voluntary associations. In this way voluntary associations are dealt with as the sole source of trust (see Cohen 1999, 217). In Jean Cohen's words:

"Once the state is defined and dismissed as a third-party enforcer, once law is turned into sanctions that provide for a certain level of social order but no more, once institutions are dismissed as irrelevant to social trust, and once a vital civil society is reduced to the presence or absence of intermediate voluntary associations, no other source is conceivable" (Cohen 1999, 219).

It has to be remembered too that Putnam's voluntary associations in "Making Democracy Work" consist mainly of sports clubs and cultural associations, which have positive functions concerning the development of social integration and consensus. Putnam is not able to deal with distrust, and those social movements and voluntary associations that present challenges to the prevailing consensus or to integrative institutions. In Putnam's theoretical framework, distrust is mostly connected to "pathological" forms of collective action, like the new social movements or organizations that are seen to advance narrow group interests (see Putnam 1993; Mouritsen 1997, 36).

4. Dimensions of social capital

In order to investigate the complex concept of social capital more thoroughly the three-dimensional model of social capital, developed in organization theory, is a valuable approach. Social capital of organizations can work in similar way as it is for individuals. Social capital can be divided into a structural, a content (communicative), and a relational dimension (Hazleton and

Kennon, 2000; Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998).

4.1. Structure dimension

It is believed that a structure is necessary for the development and utilization of social capital. This dimension is concerned with access to other actors, individual and corporate. Hazleton and Kennan (2000) propose, in particular, four aspects that are important in this dimension. First, it is important to have knowledge of the appropriate network channels to use in effective communication, in other words, availability.

Further, timing is a consequence of both knowledge and network structures, which means that organizations that can communicate more quickly are likely to possess organizational advantage. A frame of reference is also needed, which indicates the network processes that provide information to actors about availability and accessibility of additional network ties. As a fourth aspect, an appropriable social organization describes the ability of networks or organizations formed for one purpose to be utilized for other purposes. Looking at information science research with this dimension in mind shows, however, that we already have considerable knowledge of structural aspects. The structure dimension involves traditional information science concepts such as availability, reference, and time. More specifically, information behaviour in social networks is studied, for example, by Choo (2000), where networks are defined in terms of actors, activities and resources. Actors create and maintain relationships with each other and require knowledge of other actors within the network. Actors are the key factors in strengthening the connection between differentiated areas of meaning and make negotiation, coordination and compatibility possible in order to enable collective and purposeful action to take place.

4.2. Content dimension

The second dimension, the content dimension, or communication, is a visible condition necessary for formation and utilization of social capital. According to Hazleton and Kennan (2000), there are four communication functions that provide social capital: information exchange, problem identification, behavior regulation, and conflict management. Information exchange refers to the ability to gather, interpret, organize, store and disseminate information to relevant components.

Problem identification emphasizes that the organization must be able to exchange information in order to identify problems and find appropriate solutions. This process can only be successful in a sufficiently social environment. An environment without a social capacity creates inflexibility and inability to adjust to change. Behavior regulation is a process through which the behavior of various actors is shaped in relation to organizational goals and objectives. Conflict management is the process through which conflict is understood as a normal and valuable activity that must be managed as a regular and ongoing process. The content dimension is visible especially in information management research. The first aspect mentioned by Hazleton and Kennan (2000), the aspect of information exchange, is a key point in strategic information management. Huotari's (2000) work on information behavior in value constellation, for example, is an important contribution to knowledge of the strategic importance of information exchange to the relationships between people, knowledge and organizational activities in a network organization (Hazleton and Kennan, 2000). Further, the aspect of behavior regulation is visible in studies on internal environments. In information management research, the importance of identifying and analyzing the factors that affect information seeking activity is shown. The internal conditions influence the use of information to a great extent and openness to information flows develops an information climate that supports the individual. The importance of managing the information ecology and environment is underlined (Correia and Wilson, 2000; Kirk, 2002). When the internal environment is analyzed, the hidden information culture becomes visible, and interaction and cooperation are easier to develop. Human and intellectual capital is the basis, but the need for a social dimension becomes obvious for knowledge sharing. Finally, information management research has underlined the importance of information exchange in connection with problem identification. A hermeneutic way of thinking in a company is thought of as an important starting point for being able to actively map threats and opportunities. Collective responsibility and an overall perspective for decision-making in the company are important (Alfino, 1998; Widen-Wulff and Suomi; 2003). The holistic viewpoint is also important in a wider perspective. Information management activities cannot be isolated processes (Hansen and Nohria, 1999), and information and knowledge management should consider both human and system factors (Choi and Lee, 1993).In the study of Finnish insurance companies it was concluded that knowledge sharing is more effective in environments where the learning process is emphasized and implemented in the organization. Intellectual capital is important and it is born in the process of communication, which needs to be a core competence in a knowledge sharing organization. Communication as a core competence exists when there is enough personal knowledge, human capital, an Information and Communications Technology (ICT) infrastructure to support the communication process.

4.3. Relational dimension

The third dimension, the relational dimension, is concerned with expectations and obligations as central features of social capital. Hazleton and Kennan (2000) mention three aspects of relational conditions. Trust is the primary relational feature of social capital in Coleman's (1988) model and is also the most studied concept of social capital (Portes, 1998). There exist several views on trust, but a central definition is presented by Fukuyama (1995). Anyhow, trust is difficult to measure, but an interesting approach is to bring care into knowledge development and trustful communication (Portes, 1998; Schmid, 2002). The second aspect of the relational dimension is identification, which refers to the extent to which actors view themselves as connected to other actors. The third condition of the relational dimension, which is necessary, but not sufficient, is the degree of social system closure. Closure allows effective sanctions to be enacted by those for whom the system of social capital is valued. The effect of system closure is the emergence of observable norms.

In information science, structural aspects are often combined with relational aspects in order to understand information behavior on a more holistic level. For example, Huotari and Chatman (2001) use Chatman's small-world theory and social network theory to explain organizational information behavior. They indicate that the insider/outsider concept from smallworld theory, and the concepts of homogeneity, social values and norms, density, and content from social network theory, together form a valid methodological framework for analyzing organizational information behavior. This kind of research combines the structural dimension of social capital with relational aspects such as identity and social system closure. The aspect of trust has also been an important aspect to consider in information science. A basis for cooperative work in information sharing contexts is evaluated by, for example, Davenport and Cronin (2000), Iivonen and Huotari (2000). It is established that trust is a challenge in the virtual environment. How can trust be engineered into information systems? Representations of trust and trustworthiness may enrich the design of systems for computer-mediated transactions, and the importance of social browsing tools is emphasized (Davenport, 2000). With knowledge sharing as a goal, all of these dimensions of social capital are important to consider. However, this is a very wide subject area. Various organizational outcomes emerge or are enhanced from the appropriate use of social capital. But on the other hand, social capital is difficult to measure and value. Outcomes are complex, turbulent, and uncertain because of the nature of the relationships that produced them (Ginmen, 2003; Hazleton and Kennan, 2000).

Indeed, it is difficult to measure it, but it is possible and important to know supportive factors to create and develop the social capital.

5. Costs of social capital

Most of the views presented in reviewed literature have been considered beneficial for organizations. However, social capital also implies some costs. Building social capital requires considerable investments of time and resources, in establishing and maintaining relationships. Costs arise from two sources, costs associated with sustaining ongoing relationships and norms, and costs of maintaining slack resources (Leana and Van Buren, 1999). The first cost refers to the constant reinforcement of networks in order to avoid weakening. For example, new members of the organization need to be socialized in the norms, values and ways of working inherent in the workgroup and the organization (Leana and Van Buren, 1999). Maintenance requires resources which have to be free or available for social capital formation. The most important resource is time. This means that the organization must allow some slack time, which is not going to be directly productive. The second type of cost of social capital arises from the fact that it can perpetuate existing power structures, and sustain dysfunctional, stable power arrangements within the firm. In this way, strong social relations constrain the consideration of alternatives once those in power express their preferences. Social structures and power relationships tend to perpetuate themselves and, in doing so, can limit the consideration and acceptance of change (Leana and Van Buren, 1999).

The initial concept is of social capital as a resource. This can be modified by different variables: stability, closure, interdependence and interaction. Alterations in any of these factors can enhance or diminish the strength of social capital. And finally, social capital plays an important role in organizations, as a means to contribute to the firm's innovation capabilities.

6. The drivers of social capital

From a process perspective, Nahapiet and Ghoshal (1998) propose four dynamic factors which influence the development of social capital, shaping its creation and evolution.

6.1. Stability

Stability is the length of time that members of a group have had to develop their relationships. Time is important in order to build strong bonds and ties in a community. Furthermore, time allows an accumulated history among the members. Therefore, stability has been found to be a critical factor. The greater the stability, the greater the potential to build stocks of social capital in the three dimensions: stability promotes the creation of networks and relationships, allows people to share experiences which drive same vision and language, and finally it facilitates the creation of trust, norms and obligations (Misztal, 1996; Arregle et al., 2007).

6.2. Closure

Closure refers to the existence of dense social network boundaries that distinguish members of a group from non-members (Bourdieu, 1994; Etzioni, 1996), and within which all actors have relationships with each other. Closure is the driver which has the most positive effect on the cognitive and relational dimensions. The development of norms, identity, and trust has been shown to be facilitated by network closure (Coleman, 1990; Ibarra, 1992) and the development of unique codes and language is assisted by the existence of community separation (Boland &Tenkasi, 1995). In contrast with this, in open structures, violation of norms is more likely to go undetected and unpunished. Therefore, people will be less trusting of one another, weakening social capital (Adler

& Kwon, 2002).

6.3. Interdependence

Interdependence refers to shared goals and the concern for the success of the business, that members of a collective have, as well as the need for cooperation in order to accomplish their own objectives. In this context, Nahapiet&Ghoshal (1998) state that high levels of mutual interdependence help social capital formation, especially in the relational dimension. Conversely, social capital is eroded by factors that make people less dependent upon each other (Coleman, 1990). For example, expectations and obligations are less significant when people have alternative sources of support (Nahapiet&Ghoshal, 1998).

6.4. Interaction

Interaction is the frequency with which members of a network communicate with each other. It reflects the quantity, quality and strength of the relationships among them. Social ties tend to be strengthened through interaction but weakened without it, so social capital increases rather than decreases with use (Nahapiet&Ghoshal, 1998). Consequently, interaction is a precursor for the creation of social capital and for its maintenance (Bourdieu, 1986).

7. Discussion and conclusions

The social capital setting we are framing is a specific application of the more general theory referring to impure public goods, developed within the arena of modern welfare economics. While pure public good and private good theories are the poles on a continuous spectrum, impure public good theory is more general, and can accommodate diverse specifications referring to real-world phenomena, characterized by intrinsically joint production of private and public goods.

The steps of voluntary cooperation can be represented as follows: at a first stage agents voluntarily join together to share the production costs of a good or service, of a private and/or public nature, in the expectation of some dynamic benefits. This constitutes the main tradeoff between present costs and future benefits.

Investment in the private kind of capital can be an investment in capital stock, and investment in the impure public capital can be an investment in R&D. In this case, an example of the private component might be the technological improvements appropriable by the firm, and an example of the public component could be the formation of voluntary and self-enforcing agreements among firms. It is an intermediate capital good, produced privately and intentionally, which endogenously accumulates from the flow of agents' investments in voluntary cooperative effort; and it is also the public component of an impure-public good. Since R&D has the characteristic of an impure public good, it is possible to assert that whenever a district firm invests in one unit of R&D, its investment is in some percentage an investment in a private asset (the technological improvements appropriable by the firm), and in some percentage an investment in social capital. Since each firm's choice regarding social capital has effects both on the firm's own benefits and on the other firms' benefits, investment by one firm in an extra unit of the impure public capital stock (R&D) has three effects: 1) an increase in the firm's private benefits due to the private component; 2) an increase in the total amount of the public component, social capital, available to any district firm; 3) an increase in the firm's private benefits due to the public component (social capital). And this is true for every firm inside the network, so that each firm's benefits depend on its own choices and on those of the other firms concerning R&D investment and the social capital derived from it. Since R&D is here considered as an impure public capital, we can say, following Cornes and Sandler (1984, 1986), that the private and public characteristics are complements. Therefore, an increase in one of these characteristics increases the benefits of increasing the other (Milgrom and Roberts, 1995). Moreover, we can consider the opportunity cost of the impure public capital R&D as equal to the value of the private capital.

Social capital also has been broadly defined as the benefits thatactors derive from their social relationships (Bourdieu, 1986;Coleman, 1988, 1990). Moreover, a structuralview best illustrates the ability of business units both to appropriate(e.g., a resource-exchange network may be used for otherpurposes like gathering information or receiving advice) (Coleman,1988) and to convert social capital (Bourdieu,1985). Two distinct perspectives in the literature address thequestion of how the benefits of structural social capital aredistributed among business units.One group of social network theorists emphasizes privatebenefits. This position advances the notion of social capital as aprivate good that primarily benefits the actors who possess suchcapital (Burt, 1992, 1997; Granovetter, 1973, 1985). Previousresearch has considered this form of social capital at the levels ofthe individual (Ahuja et al., 2003; Belliveau et al., 1996; Perry-Smith and Shalley, 2003; Seibert et al., 2001; Sparrowe et al.,2001), the group (Krackhardt, 1990; Reagans et al., 2004;Sparrowe et al., 2001; Tsai, 2001), the organization (Burt, 1992;Florin et al., 2003), and the industry (Baker, 1990; Gulati, 1995;Walker et al., 1997). Private social capital varies depending onindividual position and positioning strategies, and mainly facilitatesthe pursuit of individual goals. While other actors mightalso benefit from such a private good, access is controlled bythose who create the social capital (Leana and Van Buren, 1999).

Other researchers view social capital as a collective good andtherefore emphasize its collective benefits. In this view, trustreciprocity, and strong social norms facilitate integration andcooperation, and effectively regulate cooperative social behavior(Fukuyama, 1995; Putnam, 1993). Collective social capitalis therefore available to and benefits not only those actors thatcreate this capital but also network members at large (Coleman,1988; Lin, 2001).

Indeed, social capital facilitates the pursuit ofcollective goals by allowing network actors to tap into resourceswithout necessarily having participated in their creation(Kostova and Roth, 2003). The use of this type of social capitalis not competitive; that is, one actor's use does not diminish itsavailability to others, but (unlike pure public goods) its use isexclusive since others can be excluded from a given network ofrelations (Adler and Kwon, 2002).

In addition to these two competing perspectives on thedistribution of social capital's benefits, a similar division existswith respect to the types of network structure that actually createsocial capital. The closure view stresses the positive effect ofdensely embedded networks with strong and cohesive social tieson the production of social norms and sanctions that facilitateexchange of information, creation of obligations and expectations,and imposition of sanctions on those who fail to meet theirobligations; in addition, closure fosters mutual trust amongactors in the network (e.g., Coleman, 1988, 1990). In this view,closure provides the social cement that binds rational actors toone another in lasting, mutually beneficial ways. In contrast, thebrokerage view claims that the benefits of social capital are theresult of access to diverse sources of information and brokerageopportunities the lack of connection (i.e., a structural hole)creates between separate clusters in a social network (Burt, 1992,2001). Central actors embedded in sparsely connected networkswill enjoy efficiency and brokerage advantages based on theirability to arbitrage non-redundant information exchanges (Burt,1992). The closure and brokerage views have different, evencontradictory, normative implications (Walker et al., 1997).Recent research seems to suggests, however, that private andcollective forms of social capital are not necessarily at odds, butrather play different roles that are valuable for different populationsand purposes (Burt, 2000). While a useful networkconfiguration combines elements of closure and brokerage(Reagans et al., 2004; Reagans and Zuckerman, 2001), theoptimal type and degree of social capital is likely to be contingenton the intent of the actors (Ahuja, 2000), and elementsof an enabling social structure for one set of actions may bedisabling for others (Podolny and Baron, 1997; Sandefur andLaumann, 1998). Indeed, both Burt (1992) and Coleman (1990)agree that the question of whether a brokerage or a closure viewis more beneficial becomes a question of whether actors competeon an individual basis or as classes of actors.

In summary, social capital from a private benefits or brokerageview explains the varying success of business units intheir competitive rivalry; the actions and performance of unitscan be greatly facilitated by their direct and indirect links toother units in social networks. In the collective benefits orcohesion view, the social capital of a collectivity of units lies notin its ties to other external units, but in its dense, cohesivestructure that facilitates the pursuit of collective goals (Adlerand Kwon, 2002). These benefits of closure accrue to bothindividual business units and the organization as a whole.

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