

6 The Implications of Different Models of Social Relations for Understanding Knowledge Sharing

Niels-Ingvar Boer, Peter J. van Baalen and Kuldeep Kumar

Introduction

It is generally agreed upon that knowledge sharing is a crucial process within organizational settings, whether these are, for example, project teams, formal work groups or communities of practice. One might even argue that sharing knowledge is the *raison d'être* of such organizational settings. After all, due to the division of labour and accompanying fragmentation, specialization and distribution of knowledge, it becomes essential to integrate and thus share the diversity of complementary knowledge in order to produce complex products and services (Grant, 1996).

Many practitioners and academics assume that since knowledge sharing is crucial for achieving the collective outcome of organizational settings, people *will* share all the required knowledge. However, many companies and institutions have experienced that knowledge sharing is not obvious in practice, whether a codified strategy or a personalized strategy has been followed (Hansen, Nohria and Tierney, 1999).

A variety of conditions has been identified in the literature, trying to explain the lack or presence of knowledge sharing. It is assumed that when any of these conditions is not given into, knowledge sharing is unlikely to take place, or at least in an efficient or effective way. Among these conditions are characteristics of knowledge such as its tacitness (Boisot, 1998; Szulanski, 1996), characteristics of the sender such as one's workload (Huber, 1991), characteristics of the receiver such as one's absorptive capacity (Cohen and Levinthal, 1990; Lane and

Lubatkin, 1998), and characteristics of the organizational context such as the communication infrastructure (Moenaert, Caeldries, and Wauters, 2000) and the richness of the media (Daft and Lengel, 1984).

Rather than considering individual (including epistemological), organizational or technological conditions for sharing knowledge, this chapter addresses the motivational dimension of knowledge sharing by focussing on the relationships within which knowledge is being shared. With respect to motivations for sharing knowledge, the literature is preoccupied with a rather rational economic perspective on sharing knowledge. According to Davenport and Prusak (1998), knowledge should be shared according to the logic of markets. 'Many knowledge initiatives have been based on the utopian assumption that knowledge moves without friction or motivation force, that people will share knowledge with no concern for what they may gain or lose by doing so' (Davenport and Prusak, 1998). However, although the economic rationality is necessary, it is not sufficient for understanding why people (do not) share knowledge.

Business practice illustrates that in some situations knowledge is not being shared while it would be expected to take place according to the economic rationality (see Textboxes 1 and 2). For example, it seems very rational for organizations to develop knowledge repositories and to build intranets in order to share their 'best practices' so that their employees do not have to 'reinvent the wheel' over and over again. However, many intranets and knowledge repositories remain without content, since people do not contribute to it by sharing their knowledge (Ciborra and Patriotta, 1996).

Besides situations in which knowledge is not being shared while it would be expected to take place according to an economic rationality, the opposite also occurs. In some situations one would *not* expect to find people sharing knowledge, while it *does* take place. For example, people contributing to discussion groups on the Internet or developing Open Source software cannot be explained solely from a rational economic perspective (see Textbox 1). Sometimes people share knowledge even though they are not receiving any direct financial value in return (Raymond, 2001). Thus, motivations other than pure economic rationality exist that either promote or inhibit the process of knowledge sharing.

Alternative models for describing or prescribing the motivational and relational dimension of knowledge sharing have been proposed. For example, sociologists have interpreted work-related and scientific communication as gift giving (Blau, 1963; Hagstrom, 1965) and enrolling allies (Latour, 1987). Others have pointed to the importance

Textbox 1

Developing best practices

In an increasingly competitive environment, organizations need to operate as efficiently as possible, especially when they are dealing with repetitive work (e.g., doing similar consultancy assignments, processing insurance claims or developing software). Since these organizations employ people who all have acquired particular knowledge in practice, it seems rational to try to benefit from this knowledge, so that every employee can take advantage of prior experiences of their colleagues. It would be inefficient to let people 'reinvent the wheel' every time. Therefore organizations have tried to set up knowledge repositories that contain best practices and other knowledge that could be of interest for other employees. Rationally most people subscribe the usefulness of such knowledge systems. However, in practice many repositories remained 'empty' since the employees did not contribute to the accumulation of knowledge in the database.

Open Source Software Development

The success story of Open Source Software Development (OSSD) started with the creation and collective development of Linux in 1991. Collaborative, networked development was a new model of software development made possible by the Internet. The full power of this collaborative method can only be realized when the source code to software is freely shared among developers. The source code is copyrighted under the GNU Public License, meaning that software must be freely distributed with source code available, and anyone may freely modify that source code provided that any modifications they distribute are distributed with source code. OSSD breaks down the barriers between developers and users, and removes obstacles in developer-to-developer communication. Each new version of a software application (e.g. an operating system) is rapidly viewed and tested by thousands of programmers world wide, aptly demonstrating the adage that 'given enough eyeballs, all bugs are shallow'. In this way, OSSD can accelerate the software development process, increase the level of customization and makes the software more reliable. The question arises what makes thousands of developers around the world contribute to a particular source code? They are not motivated by economic motives to share their knowledge, since they do not receive any financial rewards for it.

of communities (Brown and Duguid, 1991; Wenger, 1998). Within social capital theory the social relations are emphasized rather than the market relations, or the hierarchical relations (Adler and Kwon, 2002). Most research is dominated by only one model of social relations, resulting in a fragmentary understanding of knowledge sharing.

The objective of this chapter is to illustrate how the relation models theory (Fiske, 1991), which postulates that human relations may be based largely on combinations of *four* relational models (communal

sharing, authority ranking, equality matching and market pricing), can contribute to a better understanding of the dynamics of knowledge sharing within different organizational settings. By taking these four relational models into account as mechanisms behind knowledge sharing, rather than just one, it is asserted that the understanding of knowledge sharing might improve.

Different models of social relations

Knowledge sharing is considered to be a fundamentally social phenomenon. 'Social behavior is inherently relational in nature: individual behavior assumes social meaning only in the context of human relations. The basic unit of analysis is therefore not individual behavior, but behavior-in-a-relational context' (Fiske, 1991). In line with the idea of structuration (Giddens, 1984), it can be stated that a relationship between people is established as soon as they share knowledge with one another and that a particular relationship between people consequently influences the way knowledge is being shared. Knowledge can be shared between people interacting face-to-face, or mediated by technology, both synchronous and asynchronous. 'It is not necessary that the "other persons" be present or even exist – nor, if they do exist, that they actually perceive the action or perceive it as it was intended. A social relationship exists when any person acts under the implicit assumption that they are interacting with reference to imputedly shared meanings' (Fiske, 1991).

The relation models theory of Fiske (1991, 1992) claims that people are fundamentally sociable. They generally organize their social life in terms of their relations with other people. In general people seek to create, sustain, and repair social relationships because the relationships themselves are subjectively imperative, intrinsically satisfying, and significant. The relation models theory integrates the work of the major social theorists and builds on a synthesis of empirical studies across the social sciences, including anthropological fieldwork. From an exhaustive review of the major thinking on relationships in sociology (such as Blau, 1964; Buber, 1987; Durkheim, 1966; Tönnies, 1988; Weber, 1975), social anthropology (such as Malinowski, 1961; Polanyi, 1957; Salins, 1965; Udy, 1959) and social psychology (such as Clark and Mills, 1979; Krich and Crutchfield, 1965; Leary, 1957; Piaget, 1973), Fiske argues for the existence of four fundamental forms of human relationships: communal sharing, authority ranking, equality matching and market pricing. These four structures are manifestations of elementary mental models (schemata). Table 6.1 summarizes some of the major postulations

Table 6.1 Postulations of relation models theory

- People are fundamentally sociable; they generally organize their social life in terms of their relations with other people.
- People use just four relational models (*communal sharing*, *authority ranking*, *equality matching* and *market pricing*) to generate, understand, co-ordinate and evaluate these social relationships; the four social structures are manifestations of elementary mental models (schemata).
- These models are autonomous, distinct structures, not dimensions; there is no continuum of intermediate forms.
- People find each of the models of relationships intrinsically satisfying for its own sake. There is typically an extremely high degree of consensus among interacting actors about what model is, and should be operative.
- People believe that they should adhere to the models, and insist that others conform to the four models as well.
- Social conflicts often occur when people are perceived to be profoundly violating the elementary relationships.
- The residual cases not governed by any of these four models are *asocial interactions*, in which people use other people purely as a means to some ulterior end, or *null interactions*, in which people ignore each other's conceptions, goals and standards entirely.
- People commonly string the relational models together and nest them hierarchically in various phases of an interaction or in distinct activities of an organization.
- Relations and operations that are socially significant in one relational structure may not be meaningful in certain others.
- People in different societies commonly use different models and combinations of models in any given domain or context. Cultural implementation rules (rules that stipulate when each model applies and rules that stipulate how to execute each model) are essential for the realization of any model in practice (domain, degree).
- The four models do not all work equally well in every domain, and each is dysfunctional for some purposes in some contexts.

Source: Derived from Fiske (1992).

of the relation models theory. Each of the relational models is now briefly described.

Communal sharing relationships (CS) are based upon a conception of some bounded group of people as equivalent and undifferentiated. In this kind of relationship, the members of a group or dyad treat each other as being identical, focussing on commonalities and disregarding distinct individual identities. People in a CS relationship often think of themselves as sharing some common substance, and hence think that it is natural to be relatively kind and altruistic to people of their own kind. Close kinship ties usually involve a major CS component, as does

intense love; ethical and national identities and even minimal groups are more attenuated forms of CS. When people are thinking in terms of equivalence relations, they tend to regard the equivalence class to which they themselves belong as better than others, and to favour it.

Authority ranking relationships (AR) are based on a model of asymmetry among people who are linearly ordered along some hierarchical social dimension. People higher in rank have prestige, prerogatives, and privileges that their inferiors lack, but subordinates are often entitled to protection and pastoral care. Authorities often control some aspects of their subordinates' actions. Relationships between people of different ranks in the military are predominantly governed by this model, as are relations across generations and between genders in many traditional societies. Although, in principle, in any society or situation, people could be ranked in different hierarchies according to innumerable different status-relevant features, in practice, people tend to reduce these factors to a single linear ordering. When people are thinking in terms of such linearly ordered structures, they treat higher ranks as better.

Equality matching relationships (EM) are based on a model of even balance and one-for-one correspondence, as in turn taking, egalitarian distributive justice, in-kind reciprocity, tit-for-tat retaliation, eye-for-an-eye revenge, or compensation by equal replacement. People are primarily concerned about whether an EM relationship is balanced, and keep track of how far out of balance it is. The idea is that each person is entitled to the same amount as each other person in the relationship, and that the direction and magnitude of an imbalance are meaningful. Colleagues who are not intimate often interact on this basis: they know how far from equality they are, and what they would need to do to even things up. People value equality and strongly prefer having at least as much as their partners in an EM relationship.

Market pricing relationships (MP) are based on a model of proportionality in social relationships and people attend to ratios and rates. People in an MP relationship usually reduce all the relevant features and components under consideration to a singular value or utility metric that allows the comparison of many qualitatively and quantitatively diverse factors. People organize their interactions with reference to ratios of this metric, so that what matters is how a person stands in proportion to others. Proportions are continuous, and can take any value. The most prominent examples of interactions governed by MP are those that are oriented towards prices, wages, commissions, rents, interest rates, tithes, taxes and all other relationships organized in terms of cost-benefit ratios and rational calculations of efficiency or expected utility.

The four described relational models all imply a social relationship between people. If there is no truly social relationship, Fiske speaks about *null interaction*, in which people ignore each other's conceptions, goals and standards entirely. Obviously, any given person has no social relationship at all with most of the people on earth. Furthermore, using the same toilet, and drinking at the same coffee machine are not social relationships *ipso facto*. People sometimes may simply disregard the existence of other people as social partners, acting towards others as if they were merely animate organisms, or taking no account of them at all. On the other hand, people may have a social relationship without ever encountering each other face to face or even communicating directly (Anderson and O'Gorman, 1983).

Fiske furthermore distinguishes *asocial interactions*, in which people use other people purely as a means to some ulterior end. In asocial relations one party treats the other merely as an object, a means to an end, and the other submits out of fear, pain, hunger, or the like. Although the relation models theory does not include these asocial relationships, they play an important role in understanding why people do not share knowledge.

Figure 6.1 illustrates that the null relationship and the asocial relationship are actually extremes on continua of two variables. The nature of a relationship can vary from social to asocial and the intensity of a

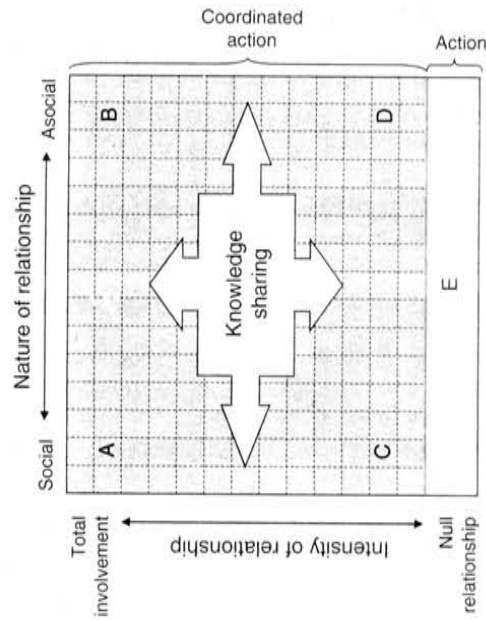


Figure 6.1 Knowledge sharing determined by the nature and intensity of a relationship

relationship can vary from a null relationship to total involvement. A third variable, albeit one not depicted in the figure, is the formality or strictness with which people observe the standards of whatever model they are using. As Figure 6.1 indicates, knowledge sharing always implies co-ordinated action within any kind of relationship; sharing knowledge during an intensive workshop among colleagues could be an example of A; a bank clerk sharing the secret code of the bank vault with the robber while being threatened by his gun could be an example of B; C could refer to a situation where someone has a nice brief chat with a stranger and D could refer to a call centre that bothers you with asking stupid questions about a product or service; riding a bike is an example of action that does not involve any relationship nor knowledge sharing. However, note that all these examples could be modelled according to any of the four described relational models.

Diversity and complexity in social relations

It might seem impossible that only four relational models can explain all complex relationships. However, there are different ways in which diversity based on the four models is established. (After all, there are also just four bases in the genetic code of DNA.) There are three aspects of the construction of social relationships that result in a limitless variety of surface manifestations of a limited set of relatively simple underlying models.

First, the models are in one sense 'empty' principles, which can be realized in behavior only within the context of certain arbitrary cultural rules. *Cultural implementation rules* are rules that stipulate when each model applies and rules that stipulate how to execute each model. Each of the four elementary models can be realized only in some culture-specific manner. There are no culture-free implementations of the models. Each model leaves open a number of parameters that require some determinant setting. Within CS relationships one has to determine what is shared collectively and what is not (for example, goods or thoughts). Within AR relationships the important question is whether people are ranked by age, gender, race, inheritance of or succession to office, or various kinds of achieved status. Questions like 'What counts as equal?' and 'What is appropriate delay before reciprocating?' need to be answered within EM relationships. MP relationships have to determine how prices are set, what counts as an offer of sale or bid to buy and when one can acceptably withdraw from an agreement.

Furthermore, people in different societies commonly use different models and combinations of models in any given domain or context.

Within many Western countries the husband-wife relationship, for example, is primarily based on EM, whereas other cultures consider it as normal that the husband dominates his wife (AR). Relations and operations that are socially significant in one relational structure may not be meaningful in certain others. For example, within a CS mindset the idea of private ownership has no meaning at all, whereas within a MP mindset it is hard to understand that people share goods free of charge.

Second, the four models are ordinarily combined in various ways to yield complex structures, which, though analytically reducible to the four fundamental structures, nevertheless may have emergent properties as a combination. It is quite rare to find a relationship that draws on only one relational model. People commonly use a combination of models, out of which people construct complex social relations. For example, colleagues may share office supplies freely with each other (CS), work on a task at which one is an expert and imperiously directs the other (AR), divide equally the amounts of carpooling rides (EM), and transfer a laptop computer from one to the other for a price determined by its utility or exchange value (MP). Thus, each of the models is operating simultaneously at different levels of a social relationship. Figure 6.2 illustrates how the four basic relational models can be distinguished and how these relations can be combined in hybrid relations.

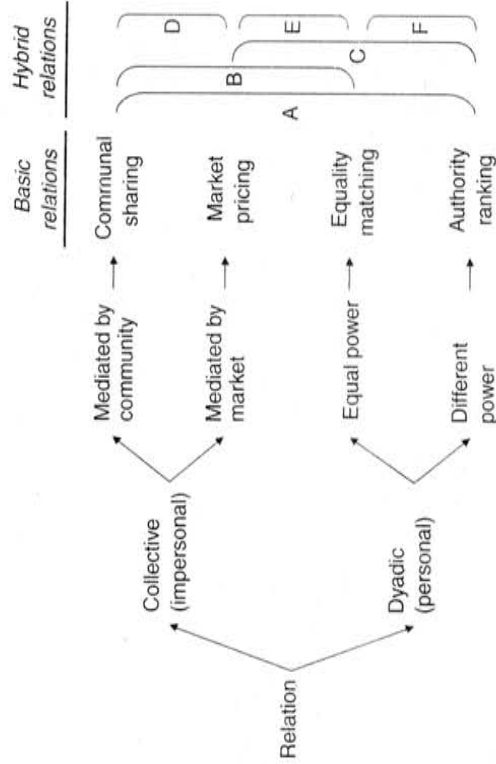


Figure 6.2 Distinction between the four basic relational models and their hybrid variations

Third, the recursive application of the same model at successive embedded levels results in a limitless potential for elaboration of any one model. This aspect is further discussed in the section about infocultures.

Finally, the relational models in use are not static, but might change over time. Several theorists have described dynamic sequences of transition in which the dominant form of interaction changes from one of the relational models to another. The relationship between a given pair of people or among the members of a particular group is assumed to transform from MP to EM to CS, or from AR to CS, although sequences may vary. In a society, however, most writers suggest a sequence in the opposite direction that is some subset of the ordering, CS → AR → EM → MP, usually over historical spans of time (for example, transition from primitive tribe to capitalistic society).

Implications for knowledge sharing

The previous sections have described the four fundamental relational models and how these can establish diverse and complex relationships. Furthermore, it has been asserted that the dynamics of knowledge sharing can be organized according to these relational models. Since the relation models theory intends to describe the elementary 'grammar' of social life in general rather than focussing on the knowledge sharing issue specifically, this section describes how the theory can be specified for knowledge sharing. It is explained how each model conceptualizes knowledge and how each model determines the principles behind knowledge sharing.

Within CS relationships, knowledge is perceived as a common resource, rather than as one's individual property. Knowledge is not personally marked, since it belongs to the whole group. Knowledge is freely shared among people belonging to the same group or dyad, following the idea of 'What's mine is yours'. Whereas the CS relationship described by Fiske primarily refers to an almost pure type of altruism, we suggest a type of communal sharing based on the idea of generalized exchange (Maus, 1925). The underlying assumption of people sharing knowledge within such a CS relationship is that they expect an unspecified favour from an unspecified group member within an unspecified time span in return. By sharing knowledge within the group or dyad one 'receives' the potential helpfulness of the group in future. The motivation for sharing knowledge is based on intimacy. Knowledge is shared because one thinks that someone else might need it or because someone asks for it. There are no hidden motives for (not) sharing knowledge. The only reason for not sharing

knowledge is when one is not capable of sharing or when the desirability for sharing knowledge is unknown.

In order to share knowledge according to CS principles, a bounded group sharing some common substance (such as kinship) is required. It is important to realize that this common substance between people can be based on different *objects* of cohesion and on different *grounds* for cohesion (Lammers, 1964). Although CS is frequently not the dominant structure for sharing knowledge organization-wide (for example object is the university), there might exist some subsets within the organization where knowledge is being shared based on CS (for example object is department within the university). Furthermore, people might share knowledge with others according to CS since they feel connected with them based on shared ideological objectives (ideal cohesion, for example within a political movement), based on shared activities (instrumental cohesion, like between academic staff) or based on solidarity (social cohesion, like fine working environment).

Within AR relationships knowledge is perceived as a means to display rank differences, whether rank is based on, for example, formal power, expertise or age. The higher a person's rank, the better access to better knowledge. A person higher in rank who shares knowledge with someone lower in rank demonstrates his nobility and largesse and expects to get authority or status in return. A subordinate shares knowledge because either he has to or because he wants to ingratiate himself with his superior. In both cases the subordinate can expect a kind of 'pastoral care' or career perspective in return. In this respect knowledge sharing is motivated by power differences. People are less or not willing to share knowledge when it can change their balance of power negatively. 'Negative' knowledge is frequently withheld by window dressing behavior and a knowledge overload may originate from largesse and sweet-talk.

Within EM relationships knowledge is perceived as a means of leveling out knowledge sharing efforts. The principle behind knowledge sharing within an EM relation is based on the exchange of knowledge for similar knowledge. Knowledge is being shared because someone else has shared something similar before or because one expects something similar in return. It is the desire for equality that motivates knowledge sharing in these circumstances. In this respect one can morally oblige a person to share something in return by sharing knowledge oneself. People are less or not willing to share knowledge when nothing similar can be shared in return within a reasonable time span.

Within MP relationships knowledge is perceived as a commodity which has a value and can be traded. Knowledge is being shared because

one receives a compensation for it (not being similar knowledge or status). People are motivated to share knowledge by achievement. When the perceived compensation is not high enough, people are less or not willing to share knowledge. In Appendix 1 at the end of this chapter the implications of the four relational models for understanding knowledge sharing are summarized.

Let's illustrate the different knowledge sharing principles for professional knowledge workers. Whereas the university is expected to be a place where knowledge is being shared freely, following the rules of CS, the reality demonstrates that the CS mechanism is hardly present within universities. Of course, scientists are very eager to share their knowledge with other people from the academic community, but only when they are being rewarded for it by prestige (AR) or money (MP). So sharing ideas through scientific publications associated with author names is common practice, just like contributing to a lucrative publication. However, freely sharing knowledge with colleagues in the pre-publication phase (CS) is less likely to occur. In the day-to-day activities of academics, knowledge is commonly shared with colleagues according to EM principles. Only when they acquire valuable knowledge from colleagues, will they share similar knowledge with them (and vice versa). Regularly, academics feel more cohesiveness with the peers who are working on their own research topic than with people from unrelated departments or with the entire university.

A similar line of reasoning exists for ambitious professional consultants. Since these knowledge workers frequently feel more connected with the consulting profession and their own career than with the consulting firm they are temporarily working for, they like to receive intellectual recognition for their own work (AR) more often than a financial reward (MP). After all, they already have achieved a minimum level of income. In contrast to the academics, consultants are frequently not personally rewarded for their intellectual effort. The intellectual outcome is considered to be 'owned' by the whole organization (CS) and therefore the company name is connected to it, rather than the name of the consultant who created it. Some consultancy firms have succeeded in creating an intensive ideal cohesiveness, resulting in CS practices of knowledge sharing.

This section ends with some remarks about the null relation and the asocial relation, since they explain, among other things, why knowledge is not being shared. As has been described before, when there is a null relation between people, knowledge cannot be shared by definition. In these situations it is interesting to find out why there is no longer

a relation between the actors involved and if this is problematic. In addition, the degree to which the actors are relating for the sake of the relationship itself (social) or are using each other as means to social ends determines if and how knowledge is being shared. In the long run, asocial relationships will discourage or even prevent knowledge sharing.

Infoculture: recursive application of social relations

To date, the relational models have been described primarily as the mechanisms behind knowledge sharing between individual relationships. One can usually generalize such a relationship towards one dominant model of social relations. The relation between a husband and wife, for example, might be primarily based on EM, even when they also act according to the other models.

The models can also be used to delineate the knowledge sharing mechanisms within organizational settings. After all, organizational actors are embedded within a network of social relations. When the majority of actors within an organizational setting is sharing knowledge according to one particular relational model, the organizational setting can be typified by that dominant model of social relations.

Based on a process of institutionalization (Berger and Luckmann, 1966) not only relationships and organizational settings can be typified by one dominant relational model, but also a country or even a society. Whereas many Western countries are inclined towards MP thinking, for example, many countries from the Middle East are more based on AR.

Let us now focus on the significance of the relational models at the level of organizational settings. Different organizational settings could be characterized according to different dominant relational models. The assumptions underlying a community of practice, for example, are frequently based on CS. In a similar way one might argue that people in a formal work group interrelate according to AR and that project members interrelate according to MP. Partly this can be explained by the time scope of the different organizational settings. The more often people interact, the longer the relationship endures, and the greater the number and diversity of domains in which they interact, the less likely they are to use MP and the more likely they are to relate in a CS mode; EM is in between (Fiske, 1991).

In practice one frequently explains a lack of knowledge sharing by saying that 'there exists a culture that discourage knowledge sharing'. And indeed this 'knowledge-sharing culture' is of crucial importance, but commonly remains rather abstract. In this respect, the four

relational models can be seen as different completions of what Ciborra (Ciborra and Patriotta, 1996) refers to as an infoculture and specify this rather abstract, yet interesting theoretical notion.

Although it is possible to use any of the four models to organize any aspect of social relations, some relational models are more obvious to occur in particular situations. For example, work organized along CS lines lacks the long-term productive potential characteristic of division of labour based on differentiated complementarity. Whereas EM is widely used as a means of obtaining supplementary labour at times of peak demand or of tasks that require massed labour, it is never the primary mode of organizing the core group for the entire cycle of production. This is probably because a complete cycle of production can rarely be broken down into tasks that are all the same, and because often there is no great functional advantage in balanced reciprocal exchange of the same task. Market systems governed by prices can be the most efficient mechanism for organizing large-scale production and exchange. In part this is because MP facilitates division of labour and technical specialization, and in part because of its emergent property of conveying information about utilities and costs, permitting the use of this information to guide allocation decisions. On the other hand, many kinds of public goods cannot be produced and allocated by MP alone.

Thus, the four models of human relations are dysfunctional for some purposes in some contexts. Furthermore, they do not work equally well in every domain. Let's take a decision making process as an example. Within CS decision making is based on seeking consensus, within AR relations on authoritative fiat, within EM relations on one person, one vote, and within MP relations on rational cost-benefit analysis. When quick decision making is required, AR is more appropriate than CS, since this last model is cumbersome and time consuming.

Conflicts: mismatch of relational models

Hitherto, it has been presumed that individuals, groups or organizations sharing knowledge are operating according to the same relational model without problems and that the technologies supporting knowledge sharing are in line with the relational model of their users. However, in practice the distinctness and the congruence of the relational models are not always assured. Three situations can be distinguished where a mismatch of relational models might result in a social conflict: (a) people share knowledge according to the same relational model but disagree about how the model is applied, (b) people share

knowledge according to different relational models and (c) the technology or organizational structure supposed to support knowledge sharing is designed according to a different rationale than the relational model of its users. All three situations are now illustrated.

In the first type of situation social conflicts can occur when the people involved have different interpretations of the same relational model in use. Conflicts are the result of applying different cultural implementation rules. An example of such a social conflict in organizational settings is the disturbed relation between an employee from the IT helpdesk and a needy manager from another department. Both individuals might think that their relation is based on AR. The IT-er has a technical expertise that the manager is lacking and the manager has a formal power that supersedes the influence of the IT-er. Thus, the variable on which the hierarchy is based is different. Both are acting and sharing knowledge as if they are the higher in rank, ending in a social conflict. The result is that both evaluate the other's behaviour as inappropriate and both experience a lack of understanding. Similar conflicts might occur between young, recently graduated academics and grown old senior employees, or between a secretary with many years of experience and her new manager.

A second example deals with a different interpretation of how to balance a mutually approved EM relationship. When one person has shared a significant amount of knowledge with someone else and this person only receives insignificant knowledge in return or significant knowledge with an inappropriate delay, a social conflict might occur. This social conflict can be resolved in several ways. The person can continue to share knowledge with the other, so that the relationship might shift from an EM to an AR model. The person acquires a certain expert status implicitly, due to the developed imbalance of knowledge. Or the person can be inclined not to share any knowledge with that person anymore in future. Additional knowledge needs to be shared in order to resolve the conflicts.

The second type of situation results in more serious social conflicts, since the actors involved share knowledge according to different relational models. If one person shares knowledge with someone else, while implicitly adopting a CS model, he would feel offended when the other is asking money for his contribution (MP). When a person starts to behave as an expert to his colleagues (AR), he can expect opposition of them when they are used to share knowledge according to EM.

In the third type of situation conflicts can occur since the technology or organizational structure are designed according to different relational

models than their users'. This can be illustrated by considering the development of knowledge repositories in order to share best practices. The rationale behind the design of most current knowledge repositories is based on CS. Knowledge is considered to be a pooled resource that is accessible by everyone and knowledge is considered to be freely shared with others where possible. When the people involved do actually interrelate according to the model of CS, then there is no problem. However, in situations where there exists a difference between the assumed CS rationale behind the technology and the actual relational model in use, problems might occur. For example, when people relate with one another based on AR, they might have difficulties with using a technology that is based on CS. Since information is accessible by everybody including one's superiors, they avoid the knowledge system and share their ideas informally through other media. People do not want to be adjudicated on the basis of some informal premature documents they have put in the system. People acting upon EM have other reasons for (not) contributing to knowledge systems. A frequently expressed argument is that 'people do not want to bring more than they get'. Especially employees who have no intention to remain in an organization for a long time, for example, do not value the importance of retaining experiences for future use by their colleagues, since they won't benefit themselves. People who share knowledge according to MP only contribute to the knowledge repository when they receive an appropriate reward for it. A repository based on CS does not provide such a reward.

Different strategies can be followed to solve these kinds of problems. One can try to change the existing relational model of the user in order to fit the technology to be used, one can try to redesign the existing technology in order to fit the relational model of its user, or a combination of both. The first situation requires a cognitive change of the users which is a time-consuming process, whereas the second situation requires a fundamental reconsideration about the functionalities of the technology. Obviously, in practice it should not be an either or choice, but a combination of both strategies.

Several technical adjustments of the knowledge system can be proposed. The problem within an AR relation might be solved by implementing a double-layer structure in the knowledge system; only the final content is made accessible by everybody, while the rest is only accessible by colleagues of the project team (Ciborra and Patriotta, 1996). In the EM situation, for example, one could redesign the technology in such a way that people can only consult the knowledge system when they also contribute something. In a MP situation people

Textbox 2

Implementing communities

The last two decades, a whole range of organizations have reorganized themselves into team-based organizations, since there was widespread agreement that multidisciplinary working was essential in the new competitive environment (Orlikowski, Yates, Okamura and Fujimoto, 1995). While moving from a functionally based company, where experts were located amongst others with similar backgrounds and interests, to one based on project teams, they found out that much cross-fertilization of ideas within disciplines were lost (Blackler, Crump and McDonald, 1999). An increasing number of organizations have tried to solve their problem by creating communities as a way of maintaining connections with peers, continuing the abilities of specialists to work at the forefront of their own fields (Wenger, 1998). Appealing historic examples (Orr, 1990; Wenger and Snyder, 2000) have probably contributed to the desire of many organizations to implement similar communities within or between organizational settings. Although communities benefit from cultivation (Wenger and Snyder, 2000), their fundamentally informal and self-organizing nature makes a simple managerial implementation almost impossible (management paradox). And indeed, in practice many organizations are struggling with facilitating communities and the expected advantages for the knowledge sharing process do not always come off.

might be stimulated to contribute to the system by providing financial bonuses. These suggestions for changing the technology should be accompanied by an appropriate change of the relational model (information culture) of the users.

Just as the rationale of a technology needs to be in line with the relational model of its users, in addition the rationale of the organizational structure needs to fit the relational model of the way people share knowledge. Within organizations with a dominant MP infoculture, it is very hard or even impossible to implement a community of practice based on CS. Thus, reward systems, supporting technologies, organizational hierarchies need to be in line with the relational models in use and vice versa. It is useless to reward people according to MP when they relate to one another based on Authority Ranking (AR).

Research model

This section presents a conceptual research model for investigating knowledge sharing in practice. The vertical relations in Figure 6.3 describe the argument made in this chapter. It has been argued that the different models of social relations determine the structure behind knowledge sharing processes and that cultural implementation rules

are essential for the realization of any relational model in practice. The horizontal relations are implicitly assumed in this chapter, but are important for placing the argument in context. The horizontal relations are now briefly described (for reasons of clarity, not all relations are depicted in Figure 6.3).

In this chapter the focus has been on knowledge sharing within organizational settings. In another paper (Boer, Baalen and Kumar, 2002) we describe how different organizational settings can be described as the context within which knowledge is being shared by using an activity theory approach. However, it is important to realize that knowledge sharing is not an end in itself but a means to an end. The first and most obvious reason for sharing knowledge is that the knowledge is required to execute one's task (activity performance), since the required knowledge is distributed among different people. The need for knowledge sharing depends, among other factors, on the nature of the task (see, for example, information processing theory of Galbraith, 1973).

Besides sharing knowledge in order to execute one's task, a second reason for sharing knowledge is to respond to changes that organizational settings are dealing with continuously (for example, change of task formulation, change of personnel, change of technologies). Such changes might result in knowledge tensions or breakdowns (for example, disagreement about task description, social conflict between people due to acting according to different relational models, incompatibility of technologies). Consequently, it might be necessary to share knowledge in order to solve these kinds of tensions and breakdowns by for example clarifying the problem, suggesting solutions or evaluating alternatives.

As has been addressed in the introduction to this chapter, there are several other factors besides the relational models for explaining why people do or do not share knowledge. However, taking the different relational models into account as principles behind knowledge sharing

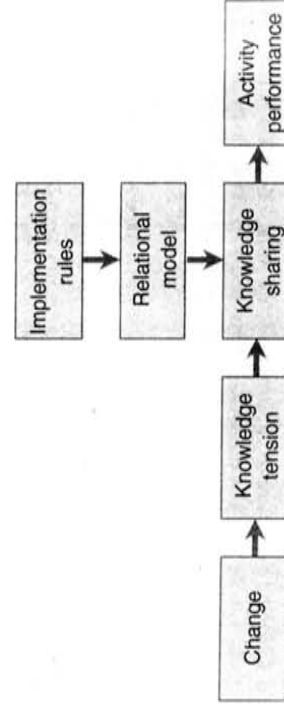


Figure 6.3 Conceptual model for investigating knowledge sharing

is considered to be crucial, yet the relational aspects of knowledge sharing are frequently underexposed in literature. Of special interest is the link between both types of research, that is how the relational models are influenced by and influence individual, organizational, technical and knowledge factors. For example, when knowledge is specific and uncodified, it is almost impossible to share it according to MP principles. Also the effort to acquire knowledge influences the relational model people will adopt for sharing this knowledge; 'Low profile' knowledge like knowing how to use the coffee machine is likely to take place according to CS, whereas an electronic presentation about a specific subject is more likely to take place according to EM or MP.

This section concludes with some remarks about the way that data can be collected in practice. Table 6.2 describes the major steps one can follow when investigating knowledge sharing in organizational settings. An important issue is how a relational model can be mapped. Fiske argues that there is only one criterion for determining what kind of social relationship (if any) it is that people are engaged in: 'The trick is to figure out what the devil *they* think they are up to.' Thus, the unit of analysis, the locus of the social relationships, is cognitive (in the broad sense). The models are goals, ideals, criteria, rules or guidelines that, under certain circumstances, conceivably may not correspond closely to what any particular observer sees in the manifest action or its outcome. The standard for determining what kind of social relation is operative is not the concrete result of the action either in the short run or the long term;

Table 6.2 Practical steps for investigating the relational dimension behind knowledge sharing

1. Determine whether there is a social (or an asocial) relation between the actors under investigation. If so, describe how this relationship has developed over time. If not, explain why not and indicate the implications for the organization (position the relation in Figure 6.1);
2. Indicate what (mix of) relational models are actually operative between these actors with respect to different types of knowledge sharing in different phases (select from Figure 6.2);
3. Specify the specific cultural implementation rules of these relational models with respect to knowledge sharing and indicate how these have changed over time (see section 3);
4. Make a detailed description of how knowledge is being shared. Try to find out when people do not share knowledge and why. Give special attention to the three types of conflicts that can occur (see sections 4 and 6);
5. Compare the findings of the actual situation with any other situation, e.g. the dominant infoculture, the proposed or desired situation or the situation after implementing a new supporting technology or organizational structure.

the standard is the conception each person has or what the relationship is (or ought to be). Consequently, different people may reckon that different relationships are in effect. Furthermore, so long as people believe that they are interacting with another person, they may apply the model and operate in a social mode even when no other person is really there.

Concluding remarks

The message of this chapter is to emphasize the relational and motivational nature of knowledge sharing. Although individual, organizational and technical factors and the nature of knowledge contribute to the understanding of knowledge sharing, much of its dynamics remains unexplained. One important reason for this is that current research about knowledge sharing has been guided largely by one model of social relations, whether this is for example one of altruism or one of rational cost-benefit analysis.

By adopting the four relational models distinguished by the relation models theory of Fiske (communal sharing, authority ranking, equality matching and market pricing) new insights are obtained. It has been described how knowledge is being shared differently within each of the four relational models. Explanations are provided, for example, for why it is so difficult to implement communities of practice within organizational settings based on market pricing, why people do not contribute to knowledge repositories and why it is so difficult to change the infoculture within organizational settings.

The cultural implementation rules, determining when each relational model is applied and how each model is executed, play a central role in the way knowledge is being shared. Some of these implementation rules have been described in this chapter, but much additional research is required to further specify these rules. The research model and the practical guidelines for investigating knowledge sharing presented here are just a start and need further refinement. We would like to invite researchers to join our search for the implications of different models of social relations for understanding knowledge sharing.

It is our conviction that in order to really understand knowledge sharing, one needs to know according to what relational model knowledge is being shared. Consequently, one can better design technologies that support knowledge sharing and design the structure of organizational settings. On the other hand, by knowing the assumptions about the social relations underlying the technical and organizational infrastructure, one can better understand why knowledge is or is not being shared.

Appendix 1 Knowledge sharing according to different models of social relations

Communal sharing	Authority ranking	Equality matching	Market pricing
<p>How is knowledge being perceived?</p> <p>As a common resource, rather than as one's individual property.</p> <p>Knowledge is freely shared among people belonging to the same group; 'What's mine is yours'.</p> <p>Why is knowledge being shared? (push vs pull)</p> <p>Because one thinks that someone else might need it; because someone asks for it. Motivated by intimacy.</p> <p>When one is not capable of sharing it or when the desirability is unknown.</p> <p>When might knowledge not be shared even though it is desirable?</p>	<p>As a means to display one's superiority; 'Knowledge is power'.</p> <p>By sharing knowledge one can demonstrate one's nobility and largesse. The higher a person's rank, the better access to better knowledge.</p> <p>Because it is requested by someone in a higher rank; because the superior has to share it. Motivated by power.</p> <p>When it can change the balance of power negatively.</p> <p>When might knowledge not be shared even though it is desirable?</p>	<p>As a means of exchange for other knowledge.</p> <p>The knowledge sharing process becomes dependent on similar processes from the past and/or in the future.</p> <p>Because someone else has shared something similar before; because one expects something in return. Motivated by desire for equality.</p> <p>When nothing similar can be shared in return within a reasonable time span.</p> <p>When the perceived compensation is not high enough.</p>	<p>As a commodity which has a value and can be traded.</p> <p>The knowledge sharing process becomes dependent on the value of the knowledge.</p> <p>Because one receives a compensation for it (not something similar). Motivated by achievement.</p> <p>When the perceived compensation is not high enough.</p>
<p>What are the implications of this perception for the knowledge sharing process?</p> <p>Knowledge is freely shared among people belonging to the same group; 'What's mine is yours'.</p> <p>Why is knowledge being shared? (push vs pull)</p> <p>Because one thinks that someone else might need it; because someone asks for it. Motivated by intimacy.</p> <p>When one is not capable of sharing it or when the desirability is unknown.</p> <p>When might knowledge not be shared even though it is desirable?</p>	<p>As a means to display one's superiority; 'Knowledge is power'.</p> <p>By sharing knowledge one can demonstrate one's nobility and largesse. The higher a person's rank, the better access to better knowledge.</p> <p>Because it is requested by someone in a higher rank; because the superior has to share it. Motivated by power.</p> <p>When it can change the balance of power negatively.</p> <p>When might knowledge not be shared even though it is desirable?</p>	<p>As a means of exchange for other knowledge.</p> <p>The knowledge sharing process becomes dependent on similar processes from the past and/or in the future.</p> <p>Because someone else has shared something similar before; because one expects something in return. Motivated by desire for equality.</p> <p>When nothing similar can be shared in return within a reasonable time span.</p> <p>When the perceived compensation is not high enough.</p>	<p>As a commodity which has a value and can be traded.</p> <p>The knowledge sharing process becomes dependent on the value of the knowledge.</p> <p>Because one receives a compensation for it (not something similar). Motivated by achievement.</p> <p>When the perceived compensation is not high enough.</p>
<p>How are problems resulting from knowledge sharing being solved?</p> <p>By seeking consensus.</p> <p>By kinship, minimal groups, national identities (knowledge is not being shared with outsiders).</p> <p>By people with different hierarchical positions (ranks).</p> <p>By people at the same horizontal or vertical position in the division of labor.</p> <p>How is knowledge being shared?</p> <p>By sharing knowledge with someone, one can morally oblige this person to share something in return.</p> <p>By one person, one vote.</p> <p>By rational cost-benefit analysis.</p>	<p>'Negative' knowledge is withheld; window dressing. Knowledge overload may originate from largesse and sweet-talk.</p> <p>By authoritative fiat.</p> <p>By authoritative fiat.</p> <p>By one person, one vote.</p> <p>By rational cost-benefit analysis.</p>	<p>Mostly not spontaneous but based on sense of duty.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>By the people who receive and provide the compensation.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Direct or at specified moment in time (in contract).</p> <p>In a similar way as before or as expected in future.</p> <p>Functional expertise.</p> <p>Examples of knowledge that is typically being shared?</p> <p>How is knowledge being shared?</p> <p>Diverse ways, but in a personal way.</p> <p>In principle everything.</p>
<p>What are the opportunistic motives for (not) sharing knowledge?</p> <p>No opportunistic motives.</p> <p>'Negative' knowledge is withheld; window dressing. Knowledge overload may originate from largesse and sweet-talk.</p> <p>By authoritative fiat.</p> <p>By one person, one vote.</p> <p>By rational cost-benefit analysis.</p>	<p>'Negative' knowledge is withheld; window dressing. Knowledge overload may originate from largesse and sweet-talk.</p> <p>By authoritative fiat.</p> <p>By one person, one vote.</p> <p>By rational cost-benefit analysis.</p>	<p>Mostly not spontaneous but based on sense of duty.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>By the people who receive and provide the compensation.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Direct or at specified moment in time (in contract).</p> <p>In a similar way as before or as expected in future.</p> <p>Functional expertise.</p> <p>Examples of knowledge that is typically being shared?</p> <p>How is knowledge being shared?</p> <p>Diverse ways, but in a personal way.</p> <p>In principle everything.</p>
<p>By who is knowledge being shared?</p> <p>By kinship, minimal groups, national identities (knowledge is not being shared with outsiders).</p> <p>By people with different hierarchical positions (ranks).</p> <p>By people at the same horizontal or vertical position in the division of labor.</p> <p>How is knowledge being shared?</p> <p>By sharing knowledge with someone, one can morally oblige this person to share something in return.</p> <p>By one person, one vote.</p> <p>By rational cost-benefit analysis.</p>	<p>By kinship, minimal groups, national identities (knowledge is not being shared with outsiders).</p> <p>By people with different hierarchical positions (ranks).</p> <p>By people at the same horizontal or vertical position in the division of labor.</p> <p>How is knowledge being shared?</p> <p>By sharing knowledge with someone, one can morally oblige this person to share something in return.</p> <p>By one person, one vote.</p> <p>By rational cost-benefit analysis.</p>	<p>Mostly not spontaneous but based on sense of duty.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>By the people who receive and provide the compensation.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Direct or at specified moment in time (in contract).</p> <p>In a similar way as before or as expected in future.</p> <p>Functional expertise.</p> <p>Examples of knowledge that is typically being shared?</p> <p>How is knowledge being shared?</p> <p>Diverse ways, but in a personal way.</p> <p>In principle everything.</p>
<p>With what emotion is knowledge being shared?</p> <p>Based on idealism.</p> <p>It goes without saying.</p> <p>Mostly not spontaneous but based on sense of duty.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>Based on idealism.</p> <p>It goes without saying.</p> <p>Mostly not spontaneous but based on sense of duty.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>Mostly not spontaneous but based on sense of duty.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>By the people who receive and provide the compensation.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Direct or at specified moment in time (in contract).</p> <p>In a similar way as before or as expected in future.</p> <p>Functional expertise.</p> <p>Examples of knowledge that is typically being shared?</p> <p>How is knowledge being shared?</p> <p>Diverse ways, but in a personal way.</p> <p>In principle everything.</p>
<p>What moment is knowledge being shared?</p> <p>Unspecified, any time when needed.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>Unspecified, any time when needed.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>Mostly not spontaneous but based on sense of duty.</p> <p>Immediately when the superior requests it and otherwise when he has time.</p> <p>Diverse ways (brief and short).</p> <p>Factual knowledge.</p> <p>Personal background stories.</p>	<p>By the people who receive and provide the compensation.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Unproblematic as long as the time span between the return is not too long.</p> <p>Direct or at specified moment in time (in contract).</p> <p>In a similar way as before or as expected in future.</p> <p>Functional expertise.</p> <p>Examples of knowledge that is typically being shared?</p> <p>How is knowledge being shared?</p> <p>Diverse ways, but in a personal way.</p> <p>In principle everything.</p>
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References

- Adler, P.S. and Kwon, S.-W. (2002) Social capital: prospects for a new concept, *Academy of Management Review*, 27: 17–40.
- Anderson, B. and O'Gorman, R. (1983) *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso.
- Berger, P.L. and Luckmann, T. (1966) *The Social Construction of Reality: a Treatise in the Sociology of Knowledge*. Garden City, NY: Doubleday.
- Blackler, F., Crump, N. and McDonald, S. (1999) Managing experts and competing through innovation: an activity theoretical analysis, *Organization*, 6: 5–31.
- Blau, P. (1963) *The Dynamics of Bureaucracy*. Chicago: University of Chicago Press.
- Blau, P. (1964) *Exchange and Power in Social Life*. New York: Wiley.
- Boer, N.I., Baalen, P.J.v., and Kumar, K. (2002) An activity theory approach for studying the situatedness of knowledge sharing, *Hawaii International Conference on System Sciences*. Hawaii: IEEE Computer Society Press.
- Boisot, M.H. (1998) *Knowledge Assets: Securing Competitive Advantage in the Information Economy*. Oxford: Oxford University Press.
- Brown, J.S. and Duguid, P. (1991) Organizational learning and communities of practice, *Organizational Science*, 2: 40–57.
- Rubier, M. (1987 [1923]) *I and thou*. New York: Collier-Macmillan.
- Ciborra, C.U. and Patriotta, G. (1996) Groupware and teamwork in new product development: the case of a consumer goods multinational. In C.U. Ciborra (ed.), *Groupware and Teamwork*. New York: John Wiley & Sons.
- Clark, M.S. and Mills, J. (1979) Interpersonal attraction in exchange and communal relationships. *Journal of Personality and Social Psychology*, 37: 12–24.
- Cohen, W. and Levinthal, D. (1990) Absorptive capacity: a new perspective on learning and innovation, *Administrative Science Quarterly*, 35: 128–52.
- Dalt, R.L. and Iengel, R.H. (1984) Information richness: a new approach to managerial behavior and organizational design, *Research in Organizational Behavior*, 6: 191–233.
- Davenport, T.H. and Prusak, L. (1998) *Working Knowledge: How Organizations Manage What They Know*. Boston: Harvard Business School Press.
- Durkheim, E. (1966 [1897]) *Suicide: a Study in Sociology*. New York: Free Press.
- Fiske, A.P. (1991) *Structure of Social Life: the Four Elementary Forms of Human Relations*. The Free Press.
- Fiske, A.P. (1992) The four elementary forms of sociality: framework for a unified theory of social relations, *Psychological Review*, 99: 689–723.
- Galbraith, J.R. (1973) *Designing Complex Organizations*. London: Addison-Wesley.
- Giddens, A. (1984) *The Constitution of Society*. University of California Press.
- Grant, R.M. (1996) Toward a knowledge-based theory of the firm, *Strategic Management Journal*, 17: 109–22.
- Hagstrom, W.O. (1965) *The Scientific Community*. New York: Basic Books.
- Hansen, M.T., Nohria, N. and Tierney, T. (1999) What's your strategy for managing knowledge?, *Harvard Business Review*, 106–16.
- Huber, G.P. (1991) Organizational learning: the contribution process and the literatures, *Organizational Science*, 2: 88–115.
- Krech, D. and Crutchfield, R.S. (1965) *Elements of Psychology*. New York: Knopf.
- Lammers, C.J. (1964, Uiterlijke samenhang en bindingskracht van de organisatie, *Sociologie van de organisatie*. Leiden: Rijksuniversiteit Leiden.
- Lane, P.J. and Lubatkin, M. (1998) Relative absorptive capacity and interorganizational learning, *Strategic Management Journal*, 19: 461–77.
- Latour, B. (1987) *Science in Action*. Cambridge: Harvard University Press.
- Leary, T.F. (1957) *Interpersonal Diagnosis of Personality: a Functional Theory and Methodology for Personality Evaluation*. New York: Ronald Cress.
- Malinowski, B. (1961 [1922]) *Argonauts of the Western Pacific: an Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea*. New York: Dutton.
- Mauss, M. (1925) *The Gift: Forms and Functions of Exchange in Archaic Societies*. London: Routledge and Kegan Paul.
- Moenart, R.K., Caeldries, A. and Wauters, E. (2000) Communication flows in international product innovation teams, *Journal of Product Innovation Management*, 17: 360–77.
- Orlikowski, W.J., Yates, J., Okamura, K. and Fujimoto, M. (1995) Shaping electronic communication: the metastructuring of technology in the context of use, *Organization Science*, 6: 423–44.
- Orr, J.E. (1990) Sharing knowledge, celebrating identity: community memory in a service culture. In D. Middleton and D. Edwards (eds), *Collective Remembering: Memory in Society*. London: Sage.
- Piaget, J. (1973 [1932]) *Le jugement moral chez l'enfant*. Paris: Presses Universitaires de France.
- Polanyi, K. (1957 [1944]) *The Great Transformation: the Political and Economic Origins of Our Time*. New York: Rinehart.
- Raymond, E.S. (2001) *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary*. California: O'Reilly Publications.
- Salins, M. (1965) On the sociology of primitive exchange. In M. Banton (ed.), *The Relevance of Models for Social Anthropology*. London: Tavistock.
- Szulanski, G. (1996) Exploring international stickiness: impediments to the transfer of best practice within the firm, *Strategic Management Journal*, 17: 27–43.
- Tönnies, F. (1988 [1887]) *Community and Society (Gemeinschaft und Gesellschaft)*. New Brunswick, NJ: Transaction Books.
- Udy, S.H. (1959) *Organization of Work: a Comparative Analysis of Production among Nonindustrial Peoples*. New Haven, CT: Human Relations Area File Press.
- Weber, M. (1975 [1916]) The social psychology of the world religions. In H.H. Gerth and C.W. Mills (eds), *From Max Weber: Essays in Sociology*. New York: Oxford University Press.
- Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press.
- Wenger, E.C. and Snyder, W.M. (2000) Communities of practice: the organizational frontier, *Harvard Business Review*, 78: 139–45.

Organizations as Knowledge Systems

Knowledge, Learning and Dynamic
Capabilities

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Haridimos Tsoukas

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